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**SCIENTIFIC
SESSION**

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SS-1-A Trauma-Informed Public Health Analysis of Child Sexual Offending In Pakistan: Qualitative Evidence From Incarcerated Offenders And Key Stakeholders

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Background & Objectives: Child sexual abuse (CSA) represents a critical public health concern due to its enduring psychological, social and intergenerational consequences. In Pakistan, institutional responses to child sexual offending are predominantly punitive, with minimal integration of mental health care, psychosocial assessment or preventive interventions.

To explore psychosocial and structural determinants of child sexual offending and to examine institutional gaps in assessment, rehabilitation and reintegration, with a view to identifying opportunities for integrating trauma-informed, public health interventions within existing justice and health systems in Pakistan.

Methods: An exploratory qualitative study was conducted using an interpretivist approach, informed by socio-ecological and life-course frameworks. Participants comprised 25 convicted incarcerated individuals of child sexual offences in Khyber Pakhtunkhwa, along with purposively selected key informants, including clinical psychologists, child protection professionals, religious scholars and senior judiciary members. Semi-

structured interviews were conducted, and data were analyzed thematically using an inductive and comparative approach.

Results: The analysis revealed recurrent trajectories of early childhood adversity, exposure to violence, socio-economic marginalization, untreated mental health needs, and maladaptive belief shaping offending pathways. Most incarcerated participants identified as first-time offenders and reported the absence of psychosocial assessment, risk evaluation or therapeutic support at pre-trial, sentencing, or post-conviction stages. Stakeholders highlighted the lack of structured rehabilitation, evidence-based risk assessment, and reintegration planning.

Conclusion: Findings indicate that reliance on punitive justice responses alone is insufficient to address child sexual offending. Integrating trauma-informed, public health approaches that recognize cumulative adversity and mental health needs is essential to reducing recidivism and preventing future harm.

Keywords: Child Sexual Abuse; Trauma-Informed Care; Public Health; Qualitative Research; Mental Health; Prevention

SS-2-Association Between Cognition And Functional Performance In Patients With Diabetes Mellitus Type Ii: A Cross-Sectional Survey

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Background & Objectives: Plethora of evidence shows that patients with Type 2

Diabetes Mellitus (T2DM) are at higher risk of cognitive impairment. However, there is a scarcity of evidence regarding the level of cognition and physical performance. Therefore this study aimed to evaluate the level of cognition and physical functioning and to find out whether there is any association between them.

Methods: A cross-sectional survey was conducted on 217 T2DM patients recruited from different tertiary care hospitals of Karachi, Pakistan using a convenience sampling technique. Patients diagnosed with T2DM for at least 2 years and aged ≥ 40 years were enrolled. However patients with severe comorbid were excluded. The cognitive level was assessed using Montreal Cognitive Assessment and physical performance using Short Physical Performance Battery. The association between these two variables was examined using Spearman's rho test. Statistical analysis was undertaken using SPSS for Windows version 22.

Result: The mean cognitive score of T2DM patients was 23.69. Majority of T2DM patients i.e. 57.6% had mild cognitive impairment. The mean physical performance score was 7.29. However most of the participants i.e. 43.8% had moderate physical functioning. A significant association was found between cognition and physical performance level in patients with T2DM ($r=0.434$, sig. =.000).

Conclusion: Survey concluded that the cognitive and physical performance level of majority of the T2DM patients was affected and they both were significantly associated. Hence it is essential that healthcare provider must address these areas for providing optimal treatment so that overall well-being and quality of life of patient with T2DM could be enhanced.

Keywords: Cognition disorders, cognitive impairment, Diabetes Mellitus, Diabetes Mellitus type 2 and physical functional performance

SS-3-Comparison of Pars Plana Vitrectomy with Medications And Laser In Malignant Glaucoma: A Retrospective Study Of Intraocular Pressure Reduction

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Background & Objectives: Malignant glaucoma is a rare but serious condition characterized by elevated intraocular pressure and anterior chamber shallowing, often resistant to conventional treatments. Management options include medical therapy, laser procedures, and surgical intervention such as pars plana vitrectomy (PPV). To compare the efficacy of pars plana vitrectomy (PPV) with medications and laser treatments in reducing intraocular pressure (IOP) in patients with malignant glaucoma.

Methods: A retrospective study was conducted on 28 patients (16 males, 12 females) with malignant glaucoma. Patients were treated with either PPV ($n = 10$), medications ($n = 6$), or laser treatments ($n = 6$). IOP reduction was compared between the groups.

Results: PPV resulted in a significantly greater IOP reduction compared to medications and laser treatments ($p < 0.05$). The mean IOP reduction was 25 mmHg in the PPV group, 10 mmHg in the medication group, and 14 mmHg in the laser group.

Conclusion: This retrospective study suggests that PPV may be a more effective treatment option for reducing IOP in patients with malignant glaucoma compared to

medications and laser treatments. Further studies are needed to confirm these findings.

Keywords: pars plana vitrectomy, intraocular pressure, laser treatment.

SS-4-Comparison of Pre- and Postoperative Lower Urinary Tract Symptoms And Quality Of Life After Pelvic Organ Prolapse Surgery
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Background & Objectives: Pelvic organ prolapse (POP) is frequently associated with lower urinary tract symptoms (LUTS), significantly impacting women's quality of life. Surgical correction of POP may lead to either resolution or emergence of de novo LUTS postoperatively. This prospective study included 51 women with POP-Q stage II or greater undergoing pelvic reconstructive surgery.

Methods: LUTS and quality of life were assessed preoperatively and at 1 week, 1 month, and 6 months postoperatively using the International Consultation on Incontinence Questionnaire – Female Lower Urinary Tract Symptoms (ICIQ-FLUTS) and Pelvic Floor Impact Questionnaire (PFIQ-7).

Results: Vaginal hysterectomy with McCall's culdoplasty and anterior-posterior repair was the most performed procedure (61%). Preoperatively, LUTS were highly prevalent, including nocturia (84.3%), urgency (74.5%), and hesitancy (96.1%). At six months postoperatively, significant symptom resolution was observed in nocturia (39.53% complete resolution), urgency (50%), and hesitancy (95.9%). The mean ICIQ-FLUTS score decreased from 10.67 ± 5.14 preoperatively to 2.27 ± 2.39 postoperatively, and the mean PFIQ-7 score

improved from 88.89 ± 54.87 to 8.57 ± 18.37 , indicating substantial enhancement in quality of life. De novo stress urinary incontinence developed in three patients.

Conclusion: POP surgery significantly reduces storage, voiding, and incontinence symptoms and improves quality of life, supporting the need for preoperative counseling and individualized patient management.

Keywords: Pelvic Organ Prolapse, Prospective Study, Surgery, Quality of Life, Questionnaire

SS-5-Comparison Of Spinal Mobilization With Arm Movement And Positional Snags On Pain And Disability In Cervical Radiculopathy Patients

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Background & Objectives: To compare the effect of spinal mobilization with arm movement (SMWAM) and positional SNAGs on pain and disability in cervical radiculopathy patients. A randomized clinical trial was conducted on 32 patients of both genders (age 25–60 years) with confirmed cervical radiculopathy using Wainner's cluster.

Methods: Participants were randomly assigned by lottery method into two groups. Group A received conventional treatment plus SMWAM (intervention 1). Group B received conventional treatment plus positional SNAGs (intervention 2). Treatment was given for three sessions per week for four weeks. Outcomes were assessed at baseline and post-treatment using Neck Disability Index.

Results: Numeric Pain Rating Scale, and range of motion. No statistically significant difference was found between groups ($p > 0.05$) for NDI (Group A: 15.266 ± 6.052 ; Group B: 18.428 ± 7.100 ; $p = 0.207$) and NPRS (Group A: 2.40 ± 0.736 ; Group B: 2.35 ± 0.497 ; $p = 0.85$). ROM showed the same effect in both groups ($p = 0.00$) except cervical extension, where the mean increase was greater in the SMWAM group. Both techniques are effective in cervical radiculopathy.

Conclusion: SMWAM demonstrated greater clinical benefits than positional SNAGs for improving cervical extension.

Keywords: SNAGS, SMWAM, Cervical Radiculopathy, Manual Therapy, Disability

SS-6-Does Platelet-Rich Plasma Improve Outcomes After Anterior Cruciate Ligament Reconstruction? An Updated Meta-Analysis of Randomized Trials

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Background & Objectives: Platelet-rich plasma (PRP) is increasingly used to enhance graft healing and functional recovery after anterior cruciate ligament reconstruction (ACLR), but evidence remains conflicting. This updated systematic review and meta-analysis evaluated the efficacy and safety of PRP augmentation in ACLR.

Methods: PubMed, Cochrane, Clinicaltrials.gov, and grey literature were searched up to August 13, 2025. Randomized controlled trials comparing PRP-augmented ACLR with standard ACLR were included. Outcomes assessed were pain, functional scores (Lysholm, IKDC, Tegner), knee stability (KT-1000), and tunnel widening. Data were pooled using random-effects models.

Results: Sixteen RCTs comprising 1,085 participants (545 PRP; 540 control) with 3–24 months follow-up were included. PRP significantly reduced pain at 3 months (MD -0.76 ; 95% CI -1.90 to -0.39) and 6 months (MD -0.67 ; 95% CI -1.24 to -0.11), but not at 12 months. Tegner scores improved modestly at 6 months (MD 0.46 ; 95% CI 0.06 to 0.85), with no differences in Lysholm or IKDC scores at any time point. KT-1000 outcomes slightly favored controls (MD 0.48 ; 95% CI 0.12 to 0.83). Tunnel widening at 12 months was comparable between groups for both tibial (MD 0.16 ; 95% CI -0.46 to 0.78) and femoral tunnels (MD 0.27 ; 95% CI -0.07 to 0.62). Evidence certainty ranged from moderate to very low.

Conclusion: PRP augmentation provides modest short-term benefits in pain relief and early functional recovery but does not improve long-term stability, graft maturation, or tunnel integrity. PRP should be considered an adjunct rather than routine practice in ACLR.

Keywords: Platelet-rich plasma; Anterior cruciate ligament reconstruction; ACL; Meta-analysis; Randomized controlled trial

SS-7-Effectiveness Of Case-Based Learning In Enhancing Academic Performance And

Engagement Among First Year Bds Students In Physiology

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Background & Objectives: Use of innovative teaching methodologies has now become an integral part of learning in medical curricula. Case based learning (CBL) model which is purely students centered approach, enables students to apply their theoretical knowledge to real world situations and clinical cases. It definitely improves their critical reasoning abilities and cognitive learning. There is limited local evidence on the impact of these strategies in Pakistani public sector medical colleges. The objective of our study was to determine the effectiveness of CBL sessions in Blood Physiology learning among BDS students.

Methods: It was quasi experimental study pre and post control group assigned, conducted in Ayub medical college First year BDS students, Batch 2025 during six weeks blood Physiology module. Module coordinator assigned case-based studies to 1st Year BDS students after briefing about carefully designed CBL-I and CBL-II sessions. Formative and summative assessment was done and results compared. pre- and post-intervention assessment done. Results were compared by SPSS. Students response to feedback questions on standard questionnaire proforma was recorded. Students were asked to reflect on how this assignment affected their learning. On 5-Point Likert scale. For simplification, descriptive parameters were modified to numerical values which were then used to analyze responses.

Results: Significant improvements in post test scores enhanced students' satisfaction and engagement.

Conclusion: Case-based learning, models revealed a significant difference in academic performance. CBL when compared to other techniques, can increase undergraduate students' academic performance as well as their capacity to analyze clinical cases.

Keywords: Undergraduate students, Case-based learning, Medical education, Physiology teaching

SS-8-Exercise Induced Differential Ultrastructural Remodeling Of Large Veins Compared To Central Arteries: A Translational Perspective For Rehabilitation

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Background & Objective: Cardiovascular health is reliant on structural and functional integrity of its constituent vessels. While veins play a pivotal part in hemodynamic both at rest and physical activity, the effects of exercise on the venous histology remain relatively underexplored and insufficiently registered.

This study was aimed to evaluate the histomorphometric adaptations of Superior and Inferior venae cavae (SVC & IVC) and Aortae of rats in response to moderate intensity continuous training (MICT).

Methods: Twenty-four rats of Sprague-Dawley strain were equally randomized into 2 groups. One group underwent exercise on motor driven treadmill at moderate intensity for 5days/week for four weeks and the other group was kept sedentary. Both groups incorporated healthy male rats and received

the same food and housing conditions. Histomorphometric analysis of luminal area, wall area and wall to lumen ratio of the vessels was conducted with Image J software.

Results: The venae cavae showed significant structural alterations in exercise group. In SVC luminal area ($p < 0.0001$), wall area ($p = 0.001$) and wall to lumen ratio ($p < 0.0001$) were significantly increased in the exercise group. Similarly, in IVC, luminal area ($p = 0.003$), wall area ($p = 0.0007$) and wall to lumen ratio ($p < 0.001$) were significantly increased. Interestingly, similar parameters showed no significant difference between exercise and control group aortae. ($p = 0.686, 0.954, 0.1489$).

Conclusion: This study concludes that compared to central artery, large veins show rapid and pronounced structural modifications by exercise. Recognizing the adaptive potential of veins can be helpful for devising improved rehabilitation protocols that open new venues for further exploration.

Keywords: Histomorphometric, Inferior venae cavae, Sprague-Dawley strain.

SS-9-Factors Affecting Suicidal Risk In Schizophrenia Patients

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Background & Objective: Suicide is a leading cause of premature mortality in schizophrenia, with risk particularly elevated during the early phase of illness. Identifying modifiable clinical predictors such as

depression and hopelessness is essential for effective prevention. To determine the factors associated with suicidal intent among patients with schizophrenia in a tertiary care setting.

Methods: This descriptive cross-sectional study was conducted at the Department of Psychiatry, Hayatabad Medical Complex, Peshawar, from January to November 2022. A total of 105 patients diagnosed with schizophrenia according to ICD-11 criteria were recruited; 103 complete datasets were analyzed. Suicidal intent was assessed using the Beck Suicidal Intent Scale (BSIS), depressive symptoms using the Calgary Depression Rating Scale for Schizophrenia (CDSS), and hopelessness using the Beck Hopelessness Scale (BHS). Data were analyzed using SPSS version 20. Pearson correlation and multiple linear regression analyses were performed.

Results: The mean age was 26.73 ± 8.86 years; 77.1% were male. Suicidal intent showed strong positive correlations with depressive symptoms ($r = 0.932$, $p < 0.001$) and hopelessness ($r = 0.950$, $p < 0.001$), and a negative correlation with duration of illness ($r = -0.870$, $p < 0.001$). In multivariate analysis, hopelessness ($\beta = 1.423$, $p < 0.001$) and shorter duration of illness ($\beta = -2.204$, $p = 0.002$) were significant independent predictors.

Conclusion: Suicidal intent in schizophrenia is strongly associated with hopelessness and early phase of illness. Early and routine assessment of hopelessness may enhance suicide prevention strategies.

Keywords: Schizophrenia, Depression, hopelessness, Beck Suicidal Intent Scale.

SS-10-Heat Exposure Characterization And Its Effects Among Outdoor And Indoor Workers In Hyderabad, Sindh,

Pakistan: A Comparative Cross-Sectional Study

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Background & Objectives: Heat stress is a significant occupational hazard in low- and middle-income countries, contributing to dehydration, heat exhaustion, heat stroke, and reduced productivity, particularly among vulnerable worker populations. This study aimed to evaluate and compare heat exposure and heat strain among outdoor and indoor workers in Hyderabad, Sindh, Pakistan.

Methods: A comparative cross-sectional study was conducted among 175 participants, including 89 outdoor workers (agricultural and brick kiln workers) and 86 indoor workers (school staff). Environmental heat exposure was measured at 30-second intervals using a portable temperature monitoring device, and heat strain was assessed using the Heat Strain Score Index.

Results: Data were analyzed using multivariable logistic regression to examine associations between occupation type, temperature differentials, and heat strain scores. The mean temperature difference between satellite-recorded temperature and immediate microenvironment was highest among brick kiln workers ($6.95 \pm 2.6^{\circ}\text{C}$), followed by agricultural workers ($4.8 \pm 0.3^{\circ}\text{C}$), and lowest among school staff ($1.6 \pm 2.2^{\circ}\text{C}$). Occupational category was significantly associated with increased temperature differential (OR: 5.44, 95% CI: 2.46–8.42) and elevated heat strain scores

(OR: 10.71, 95% CI: 4.11–27.92). A substantially higher proportion of outdoor workers (70.8%) fell within the moderate-risk heat strain category compared to indoor workers (14%).

Conclusion: These findings highlight the disproportionate heat burden faced by outdoor workers and underscore the urgent need for targeted occupational heat mitigation policies and adaptive workplace interventions.

Keywords: Heat stress, heat strain, occupational exposure, outdoor workers, indoor workers, Pakistan

SS-11-Impact Of Physical Activity On Cognitive Function In Women With Iron Deficiency Anemia

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Background & Objectives: Iron deficiency anemia (IDA) is linked to cognitive deficiency in women, but there is not a study conducted to investigate whether physical activity (PA) can reduce such deficits. This research proposed the use of physical activity to determine the effect of physical activity on cognitive ability in the case of women with IDA.

Methods: A cross-sectional study involved the 228 women aged between 18 years and 45 years diagnosed with IDA over a minimum period of six months to one year. The International Physical Activity Questionnaire (IPAQ)-Long Form was used to divide the participants into Inactive, Moderate, and Active. The Montreal Cognitive Assessment (Version 8.1) was used to determine cognitive functioning.

Results: Assessment of the association between the levels of physical activity and cognitive performance was conducted using descriptive and inferential statistics such as chi-square tests, MANOVA, and a one-way ANOVA. There are significant differences between physical activity and global cognitive performance (χ^2 (6, N = 228) = 178.24, $p < .00$). The active group demonstrated the most prevalence of normal thinking and the inactive group demonstrated the highest prevalence of moderate and severe cognitive impairment. There were significant differences in several areas of cognitive domain, such as attention, orientation, naming, language, and delayed recall ($p < .001$), but not visuospatial/executive. The level of physical activity is closely related to a positive level of cognitive performance, indicating that regular exercise can spread protective measures against cognitive deterioration.

Conclusion: Although these findings cannot be proven because of the cross-sectional design, they help justify the inclusion of physical activity in holistic management that can be used to treat women with IDA. Longitudinal and interventional studies should be performed in future to establish causation, maximize the effectiveness of exercise interventions, and investigate the underlying physiological causes.

Keywords: Iron deficiency anemia, physical activity, cognitive function, MoCA, IPAQ, women

SS-12-Investigating Gender And Education Based Tolerance Of Chemotherapy In Patients With Cancer: An Institutional Perspective

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Background & Objectives: Cancer patients often demonstrate varied tolerance to chemotherapy. Socio-demographic factors such as gender and education may influence treatment adherence, toxicity management, and outcomes. This study explores these associations in an institutional setting. To evaluate the impact of gender and education level on chemotherapy tolerance among patients with cancer at our institution.

Methods: A retrospective cross-sectional study was conducted including 220 patients who received chemotherapy between March 2022 and August 2024. Patients were stratified by gender (male/female) and education level (no formal education, primary/secondary, higher). Tolerance was assessed based on dose delays, dose reductions, and treatment discontinuation. Statistical significance was defined at $p < 0.05$.

Results: Of the 220 patients, 140 (64%) were female and 80 (36%) male. Treatment interruptions were more frequent in females (38%) compared to males (25%) ($p = 0.03$). Patients with higher education showed better compliance (82%) compared with those with no formal education (56%) ($p = 0.001$). Dose reductions were lowest in patients with higher education (15%) versus those with no formal education (40%).

Conclusion: Gender and education significantly influence chemotherapy tolerance. Female patients and those with lower educational backgrounds are more prone to treatment delays and dose reductions. Addressing these disparities through patient counseling and support may improve treatment adherence and outcomes.

Keywords: Cancer, Chemotherapy, Socio-demographic factors.

SS-13-Knowledge, Attitude and Practices Regarding Body Weight Management Among Overweight and Obese Female Patients In Tertiary Care Hospitals, Peshawar

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Background & Objectives: Overweight and obesity are the major global health challenges. It leads to adverse health conditions, including type 2 diabetes, cardiovascular diseases, and other noncommunicable diseases and contributes to increased morbidity and mortality. The study aimed to investigate the knowledge, attitudes, and practices regarding body weight management among overweight and obese female patients. Obesity has become a serious public health concern in Pakistan, particularly high prevalence rate among women. Regardless increasing burden of obesity, there is limited research on how overweight and obese female patients in tertiary care hospitals perceive and control their body weight. The study will provide insights into overweight and obese patients' knowledge, attitudes, and practices regarding weight management in tertiary care hospitals, Peshawar.

Methods: Quantitative cross-sectional study was conducted in September- November 2025 at two tertiary care Hospitals in Peshawar. The sample size was calculated through public health voice cross sectional sample size calculator, which was 312. Data was collected from female patients through a

pre-designed, structured questionnaire via convenient sampling techniques. Data was analyzed by using SPSS version 27. Percentage and frequencies were calculated for the categorical variables, whereas means and Sd along with median were calculated for continuous variables. Chi-square testing was applied to find any significant association between categorical variables.

Results: The study showed good knowledge, neutral attitudes, and moderate practices regarding body weight management. The study showed a significant association between knowledge categories with education, income, and BMI with a p-value of 0.009, 0.003, and 0.048 respectively. Attitudes have a significant association with income, and obesity related diseases with p value of <0.001, 0.008 respectively.

Conclusion: they have good knowledge, neutral attitudes, and moderate practices. The findings showed that socioeconomic factors influence weight management behaviors. To improve attitudes and encourage healthy behaviors, health education initiatives should be reinforced.

Keyword: Knowledge, Attitudes, Practices, Overweight, and Obesity.

SS-14-Neutrophil-To-Lymphocyte Ratio As An Independent Predictor Of Deep Dermal Conversion In Indeterminate Scald Burns: A Retrospective Analysis

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Background & Objectives: Accurately assessing the depth of indeterminate scald

burns remains a significant clinical challenge, as early visual inspection often fails to distinguish wounds that will heal spontaneously from those that will progress to full-thickness necrosis. While systemic inflammation is known to drive secondary tissue damage, the utility of the Neutrophil-to-Lymphocyte Ratio (NLR) as an early predictor of burn depth progression in pediatric patients remains under-evaluated. We conducted a retrospective analytical study at the Burn and Plastic Surgery Center Peshawar.

Methods: reviewing records of 150 pediatric patients with indeterminate scald burns (10–20% TBSA). Patients were stratified based on clinical outcome into Spontaneously Healed (Group A) and Required Grafting/Surgery (Group B). Admission Complete Blood Counts were analyzed to calculate NLR, and multivariate logistic regression was used to determine if NLR independently predicted deep dermal conversion.

Results: The mean admission NLR was significantly higher in the Surgery Group (6.4 ± 1.2) compared to the Spontaneously Healed Group (3.1 ± 0.8) ($p < 0.001$). An NLR cut-off value of >4.5 on admission demonstrated a sensitivity of 82% and specificity of 78% for predicting the need for skin grafting. Regression analysis confirmed that elevated NLR was strongly associated with burn depth progression (Odds Ratio: 3.4), suggesting that a hyper-inflammatory systemic response on Day 1 correlates with microvascular thrombosis and tissue death.

Conclusion: Our study concluded that NLR at the time of admission is a simple, zero-cost biomarker that effectively stratifies indeterminate burns at high risk of deepening. Patients with an higher NLR may

benefit from earlier surgical intervention rather than a prolonged "wait and see" approach.

Keywords: Biomarkers, Burns, Neutrophil-to-Lymphocyte Ratio, Pediatrics, Skin Transplantation.

SS-15-Nipah Virus And The Path From Zoonotic Threat To Pandemic Readiness Via Innovative Vaccines

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Background & Objectives: Nipah virus (NiV), a biosafety level-4 henipavirus, is a critical zoonotic threat, with case-fatality rates exceeding 70%. Transmitted primarily through Pteropus fruit bats, with pigs as amplifying hosts, NiV demonstrates sustained human-to-human transmission and causes severe neurological and respiratory manifestations. Despite decades of surveillance, no licensed therapeutics or vaccines exist for human use. This study aims to evaluate recent advances in NiV vaccine development and to assess countermeasures for pandemic preparedness.

Methods: We examined breakthrough developments in NiV countermeasures, focusing on a novel ferritin-based divalent nanoparticle vaccine platform co-displaying G proteins from multiple NiV strains. Vaccine efficacy was assessed through Syrian hamster challenge models, evaluating cross-reactive neutralizing antibody

responses compared to conventional subunit approaches. Current diagnostic methodologies, including RT-PCR detection and One Health surveillance strategies, were reviewed.

Results: The ferritin-based nanoparticle vaccine achieved complete protection in Syrian hamster challenge models, eliciting robust cross-reactive neutralizing antibodies superior to conventional vaccines. This platform successfully addresses antigenic diversity challenges and offers scalable manufacturing potential for resource-limited endemic regions, representing significant advancement in both immunogenicity and practical deployment feasibility.

Conclusion: The convergence of advanced nanoparticle vaccine platforms, One Health surveillance strategies, and targeted ecological interventions represents the most viable pathway toward mitigating NiV's pandemic potential. Accelerated translation of nanoparticle vaccine candidates into phase I clinical trials is critical for global health security. Continued research on NiV pathogenesis mechanisms and the development of countermeasures remains paramount in an era of escalating zoonotic emergence and environmental disruption.

Keywords: Nipah virus, henipavirus, zoonotic disease, nanoparticle vaccine, pandemic preparedness, fruit bats, encephalitis, One Health

SS-16-Perspective Of Speech And Language Pathology Students Regarding Factors That Contribute To Clinical Training In Skill Development

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Background & Objective: Clinical training

is mandatory in Speech and Language Pathology programs. It plays an important role in clinical learning therefore in skill development. By addressing the perspective of Speech and Language Pathology students regarding factors that contribute to clinical training in skill development, improvement can be made in quality of SLP educational programs, clinical experiences and professional development of future Speech and Language Pathologists.

The objective of the study is to explore the perspective of speech and language pathology students regarding factors contributing to clinical training for skill development.

Methods: Qualitative research design is used in the present study. The data was collected from a sample of N=22 (both male and female) from Islamabad, Peshawar, Lahore, Karachi. The technique of purposive sampling was employed. Participants' information was gathered using an open-ended questionnaire. Thematic analysis was conducted manually.

Results: After the analysis of data five major themes regarding the perspective of speech and language pathology students regarding factors contributing to clinical training for skill development. These themes were Clinical Training, Role of Supervisor, Academic Coursework, Students skill development and Institutional and Policy Recommendations.

Conclusion: The outcome of the research highlights the critical role of clinical training in developing the practical and interpersonal skills of SLP students along with the importance of hands on practice, a supportive learning environment and the integration of theory with practice in the training of SLP students.

Keywords: Clinical Training / Placements, Supervision, Role of Supervisor, Academic Coursework, Speech and Language Pathology.

SS-17-Physical Therapy Approaches and Their Effects on Metabolic and Hormonal Parameters In Overweight/Obese And Infertile Adults: A Systematic Review And Meta-Analysis

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Background & Objectives: Obesity contributes fertility issues among men and women. It significantly impacts semen quality by lowering sperm motility, causing changes in morphology, and reducing sperm count. Infertility is a global health issue affecting almost 48 million couples worldwide. Primary and secondary infertility rates in Pakistan are between 5% and 18%, respectively. Thus, the current study investigates physical therapy approaches and their effects on metabolic and hormonal parameters in obese and infertile adults.

Methods: Using the "PICO" paradigm, CENTRAL, CINAHL, MEDLINE, PEDro, EMBASE and ProQuest were checked for citations from 2011 to 2025. Data analysis was done using RevMan software. The pooled effect size in terms of mean and SD were examined using both a fixed and random effects model. The I² statistic was used to calculate the heterogeneity. The risk of bias in randomized controlled trials was evaluated using the Cochrane criteria, while publication bias was examined using MedCalc.

Results: This review comprised ten studies in total. The combined analysis of body mass index

(BMI) showed statistically non-significant effects on physical therapy approaches group (SMD=1.42; 95% CI -0.06 to 2.91 and P=0.06). The pooled effects of waist circumference (WC) showed non-significant effects of physical therapy about SMD (0.69; 95 percent CI -1.03 to 2.41; P=0.44) were determined using random effects model. The pooled analysis of body fat percentage (BF%) showed non-significant effects of physical therapy group (SMD=0.66; 95% CI -0.93 to 2.24 and P=0.42). The combined analysis of hormonal parameters shows statistically significant effects of physical therapy group (SMD=2.06; 95% CI 1.06 to 3.07 and P=0.0001).

Conclusion: The review suggests that physical therapy approaches was found to be not effective in the management of BMI, WC, fasting blood glucose levels and BF% but physical therapy approaches was found to be effective in the management of hormonal parameters.

Keywords: Physical Therapy, Body mass index, Body fat percentage, Waist circumference, Blood glucose level, Metabolic parameters

SS-18-Risk Factors of Stunting Among Children Under Age 05 Years Presenting to The Pediatric Outpatient Department of Public Sector Hospital Of Kpk

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Background & Objectives: Stunting is a major proximal risk factor for poor physical and mental development, reflecting the cumulative effect of chronic malnutrition, repeated infections, and inadequate psychosocial stimulation. With Pakistan reporting stunting prevalence rates as high as 40-44%, identifying local determinants is essential. This study aimed to identify the

frequency and determinants of stunting among children under five years of age presenting to the Pediatric Outpatient Department of a public sector hospital in Swabi, Khyber Pakhtunkhwa.

Methods: A case-control study was conducted from October 1 to December 31, 2023, utilizing a sample of 378 children selected via non-probability convenience sampling (1:1 case-to-control ratio). Data were collected using a semi-structured questionnaire and WHO growth charts, and Odds Ratios (OR) were calculated to assess risk factor associations.

Results: Male children constituted 59.6% of the stunted cases. Multivariate analysis revealed significant risk factors associated with stunting, including paternal unemployment (OR: 3.1), short birth interval of ≤ 2 years (OR: 1.8), low maternal education (OR: 1.5), and larger family size (OR: 1.6). Nutritional analysis highlighted that mixed feeding patterns and delayed weaning (>6 months) were significant factors. Children from lower-income households and rural areas also demonstrated a higher prevalence of stunting.

Conclusion: Stunting in this population is multifactorial, driven primarily by low socioeconomic status, maternal illiteracy, short birth intervals, and inappropriate complementary feeding practices. Recommendations include targeted maternal education and nutritional counseling on timely weaning.

Keywords: Stunting, malnutrition, risk factors, children, Pakistan

SS-19-The Injectable Barrier: Psychological And Social Barriers To Insulin And Glp-1 Receptor Agonist Therapy In Type 2 Diabetes

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Background & Objectives: Inadequate glycaemic management in patients with type 2 diabetes is a serious public health concern. Even in this era of oral antidiabetics early initiation of insulin and newer GLP-1 receptor agonist therapy have been shown to significantly improve glycaemic control among diabetic patients. This study aimed to identify common barriers regarding insulin and GLP-1 receptor agonist initiation among diabetic patients presenting to a tertiary-care hospital medicine OPD.

Methods: This was a cross-sectional study conducted in the outpatient department of a tertiary-care hospital from February 2025 to July 2025. A total of 200 diabetic patients, aged 30 to 60 years, with poor glycaemic control and an HbA1c level greater than 9% were included. Data were collected, entered into and analysed using SPSS software.

Results: Out of 200 patients, 120 (60%) were female and 80 (40%) were male. Notably, 160 patients (100 females and 60 males) expressed unwillingness to start insulin therapy. Among these patients, 50% reported a fear of insulin injections, 25% were afraid of hypoglycemia—particularly at night, 10% had concerns about lifelong dependence on injections once initiated, and the remaining 15% reported issues related to GLP-1 agonists cost, insulin storage, social concerns and the difficulty of carrying insulin during travel.

Conclusion: Psychological barriers and misconceptions regarding insulin and injectable GLP-1 receptor agonist therapy are present in a significant proportion of diabetic patients. Addressing these concerns should be prioritized to enhance glycemic control among this population.

Key Words: Insulin therapy, Psychological barriers

SS-20-The Triad Of Thrombosis And Hemorrhage: Polycythemia Vera Presenting With Cerebellar Hematoma And A Cutaneous Enigma

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Background & Objectives: Polycythaemia vera (PV) is the most common myeloproliferative neoplasm (MPN), typically associated with the highest incidence of thromboembolic complications, which usually occur early in the course of the disease. Haemorrhagic manifestations, while recognized, are comparatively less common and can present a diagnostic challenge.

Methods: A 74-year-old woman with hypertension and diabetes mellitus presented to the emergency department with a 5-day history of headache, lower limb weakness, aphasia and gait disturbance. The patient then showed worsening neurological deficits. Initial non-contrast Computed Tomography Scan (CT) of the brain revealed a right cerebellar hematoma with mild obstructive hydrocephalous and subarachnoid haemorrhage.

Results: Notably, physical examination revealed a longstanding, blackish scab-like mass on the left side of her face. Initial management focused on the neurological emergency by administering Labetalol since her blood pressure was 210/100 mmHg on arrival. Subsequent haematological investigations revealed a haemoglobin of 21.5 gm/dl. A diagnosis of Polycythaemia Vera was made leading to phlebotomy that improved the symptoms. This unique case aims to highlight that haemorrhagic stroke

can be the initial, catastrophic presentation of Polycythaemia Vera, necessitating urgent haematological evaluation in patients with spontaneous intracranial haemorrhage and unexplained erythrocytosis. The simultaneous presence of a chronic, suspicious facial lesion raises the possibility of a rare cutaneous paraneoplastic syndrome associated with myeloproliferative neoplasms.

Conclusion: This triad highlights the importance of a comprehensive systemic examination and a multidisciplinary approach to diagnosis.

Keywords: Polycythaemia vera, Haemorrhage, Haemoglobin

SS-21-Virtual Reality and Its Role in Knowledge Of Anatomy: A Systematic Review

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Background & Objectives: As the world has advanced and many new technologies have been introduced for learning, these technologies have not only made life easier and better but has also made the learning environment much easier and productive among them virtual reality is one of the tool that has significantly played its role in better knowledge of anatomy

Methods: To identify publications, a search was made in Pub Med, Google scholar, NCBI, Medline and CINAHL. Cross sectional surveys showing the effectiveness of virtual reality in teaching anatomy were searched using keywords virtual reality OR VR AND Anatomy OR VR Uses in anatomy. Articles published in English language from

2019 to 2024 were included. Please see table 1 for the results while using the key searches in different databases.

Results: A total of 371 articles were identified through different databases using different key words in the selected data bases. Out of 371 articles, 171 articles were duplicates and were not considered, leaving 101 eligible articles for this systematic review. The authors read the remaining 100 articles and 54 articles were not relevant to the review. Full text articles of the remaining 47 manuscripts were checked for eligibility criteria and 29 did not meet the eligibility criteria. Studies included in qualitative synthesis were 18. While, 13 studies were excluded by not providing usable information and leaving a total of 5 articles eligible for this review.

Conclusion: According to different studies the Virtual reality is much more effective in learning. The student's performance improved by using the advance technology in the teaching of anatomy.

Keywords: Virtual reality, Manuscripts, Anatomy.

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**POSTGRADUATE
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PG-VC-1-A Comparative Study to Evaluate the Efficacy of Skin Microneedling And Platelet Rich Plasma Combination Versus Skin Micro Needling Alone for The Treatment of Atrophic Facial Acne Scars Using Goodman And Baron Grading

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Background & Objectives: One of the most unfortunate and permanent consequences of acne vulgaris is atrophic scarring, a common condition that significantly impairs quality of life. Microneedling has been studied both as a standalone therapy and in combination with modalities such as chemical peeling, platelet-rich plasma (PRP), radiofrequency, subcision, and laser therapy.

Objective: To assess the effectiveness of a combined treatment using skin micro needling and platelet rich plasma (PRP) compared to skin micro needling alone in treating atrophic facial acne scars.

Methods: A randomized controlled trial (RCT) and comparative study was conducted in the Department of Dermatology, MTI/Lady Reading Hospital, Peshawar, over a duration of one year. A total of 100 patients were enrolled, with 50 patients allocated to each group. Group A was treated with skin microneedling and platelet-rich plasma (PRP), while Group B

received skin microneedling alone for the treatment of atrophic facial acne scars.

Results: The mean age of patients in Group A was 28.0 ± 6.2 years, and in Group B was 29.4 ± 5.2 years. Females predominated in both groups. The mean duration of symptoms was 9.0 ± 8.5 months in Group A and 10.9 ± 8.5 months in Group B. Combined therapy with microneedling and PRP demonstrated an efficacy of 82%, whereas microneedling alone showed 62% efficacy for the management of atrophic facial acne scars ($p = 0.026$).

Conclusion: Combination therapy with skin microneedling and platelet-rich plasma (PRP) demonstrates superior efficacy compared to microneedling alone in managing atrophic facial acne scars, suggesting it as a preferred treatment option.

Keywords: Atrophic Facial Acne Scars, Microneedling, Platelet-Rich Plasma

PG-VC-2-An Analytical Study of Angular Cheilitis & Effects of Nutritional Intake Among the Students of An Orphanage Complex and A Private School, Peshawar, Pakistan

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Background & Objectives: Angular Cheilitis, is an inflammation and a nutritional deficiency with eroded red lesions, cracking, thinning radiating from corner of mouth with multi factorial etiology.

To determine the frequency, effect of nutritional intake especially Iron, Vitamin B12 and Folic Acid of Angular Cheilitis among the students of an Orphanage Complex.

Method: This descriptive study was conducted with 197 children, age 6-14 years from two private schools as sample. The oral cavity was examined for angular cheilitis lesion and the data for nutritional intake was taken by using a Food Frequency Questionnaire.

Result: The 51 students with angular cheilitis, were from Mercy Orphanage Complex with Iron, Vitamin B12 and Folic Acid deficiency as we compared their nutrient intake of one month with the recommended dietary allowance. However, frequency of Angular Cheilitis of Private School was zero, with deficient in Folic Acid and Iron but Vitamin B12 intake level was moderate.

Conclusion: The frequency of Angular Cheilitis among the orphanage students was high, with iron, vitamin B12 and Folic Acid deficiency as compared to private school ones where Angular Cheilitis frequency was zero and were deficient in iron and folic acid but Vitamin B12 intake was moderate.

Key Words; Angular Cheilitis, Nutrition, WHO, Iron, Folic Acid, Vitamin B12.

PG-VC-3-Antibiotic Sensitivity Pattern Of Common Microorganisms Isolated From Surgical Site Infections After Abdominal Surgeries At Ayub Teaching Hospital In Abbottabad, Pakistan

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Background & Objective: Surgical site infections (SSI) are the frequent surgical cases and a major contribution to surgical complication globally, posing a huge burden on patients and health systems. To effectively treat

SSI, the determination of sensitivity patterns is crucial to reduce the health burden and curb microbial resistance.

To identify most common micro-organisms that cause infection at surgical site after abdominal surgery and their antibiotic sensitivity trend.

Methods:

The Department of Surgery at Ayub Teaching Hospital in Abbottabad conducted this Prospective observational study from March to August 2025. Through consecutive sampling, 89 patients were included in the study. SPSS version 27 was used for analyzing the data, and the results are presented in frequency tables and graphs.

Results:

In 89 patients, the mean age was 39.3 ± 20.9 years, 41.6% had comorbidities, and 67.4% underwent emergency surgery. Gram negative bacteria predominated with, *Klebsiella pneumoniae* (8.9% , emergency: 7/60, 11.7%; elective: 3/29, 10.3%) and *Pseudomonas aeruginosa* (11.1% emergency: 5/60, 8.3%; elective: 3/29, 10.3%) were the next most common organism isolated, after *E. coli* (55.6% emergency: 36/60, 60%; elective: 14/29, 48.3%). The most effective medications were still carbapenems (48.3%) and linezolid (57.3%), but considerably resistant to penicillin (50.6%), cephalosporins (59.6%), and fluoroquinolones (61.6%).

Conclusion:

Majority of the causes of SSIs were gram-negative bacteria especially, *E. coli*, which exhibit significant resistance to commonly used antibiotics. The ongoing efficacy of carbapenems and linezolid highlights the necessity of rigorous infection control and local antibiogram-guided therapies.

Key words: Abdominal surgeries, surgical site infection, antibiotics, surveillance, antibiotic susceptibility

PG-VC-4-Assessing Knowledge, Awareness, And Practices Regarding Obstructive Sleep Apnea Among Dentists And Physicians: A Comparative Cross-Sectional Study

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Background & Objectives: Obstructive Sleep Apnea (OSA) is a sleep disorder with high cardiovascular and metabolic outcomes, which has been undiagnosed but is prevalent. Dentists and physicians are both vital in identification and management of it at an early stage but there are still gaps in the knowledge and in screening habits..

Objective: To evaluate and compare knowledge, awareness and clinical practices on OSA between dentists and physicians working in Pakistan.

Methods: A cross-sectional survey was carried out between July and September 2025 on 188 healthcare professionals who work in hospitals and private clinics (94 dentists and 94 physicians). A questionnaire format was used to measure demographics, OSA knowledge, attitudes, and screening practices. The analysis of data was performed in SPSS 26.0 and the descriptive statistics, chi-square, and independent t-tests ($p < 0.05$).

Results: There were 120 females (63.8%) and 68 males (36.2) in the study with 75.5% having 0-5 years of experience. The general OSA knowledge was moderate with a mean score of 14.2 and a dentist scoring of 12.8 with a $p=0.032$. It is reported that 37.2 percent of respondents screen regularly regarding the symptoms of OSA, and the results vary greatly between physicians (44.7) and dentists (29.8, $p=0.021$). Although 91.5% responded that OSA is a public health issue, the respondents had sufficient training by only 38.8%. The desire to continue education was great (89.4%).

Conclusion: Although the healthcare practitioners acknowledge the significance of OSA, there are still gaps in knowledge and insufficient screening. OSA detection and management should be enhanced by targeted education interventions and interdisciplinary collaboration models .

Keywords: Obstructive sleep apnea, screening of OSA, screening, dental practice, physician knowledge, healthcare education, STOP-BANG questions, STOP-BANG questionnaire.

PG-VC-5-Assessing the Implementation of Mazboot Bunyad – A Digital Nutrition Program at Private Provider Clinics in Urban Slums of Karachi, Pakistan

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Background and Objectives: Malnutrition is one of the notable public health issues in Pakistan, and the current information systems such as DHIS2 only provide the aggregate data of children served in the public health facilities and fail to real-time child-level monitoring. In

order to fill this gap, a Digital Nutrition program was the first initiative carried out in the private provider clinics of urban slums of Karachi. The program enhances early diagnosis, treatment, and follow-up of malnutrition through a decision-support system that uses a QR code. This thesis has evaluated the burden of malnutrition in the private providers clinics and has explored the acceptability, appropriateness, and adoption of the digital nutrition program by the stakeholders.

Methods: A multi-method study was carried out between July of 2024 and June 2025. The quantitative part included a secondary data analysis of the whole 22,443 children (6-59 months old) registered in the registry. The qualitative element embodied in-depth interviews with 16 social counsellors, 16 parents, and 10 policymakers which were analysed through the lenses of thematic analysis that was embedded on the RE-AIM, Task-Technology Fit and Technology Acceptance Model.

Results: Among the registered children 80.9% had normal nutritional status, 14.5% were moderately acute malnourished and 4.5% were severely acute malnourished, giving 19% global acute malnutrition (GAM) rate. The trends of recovery reflected 23.5% of MAM and 6.3% of SAM children had improved to normal nutritional status after the second follow-up. The qualitative results showed that the digital registry was greatly accepted because of its user-friendly interface, better case tracking, and efficiency. The key issues were the internet availability, few OTP locations and parental consent.

Conclusion: The Mazboot Bunyad program was perceived as acceptable and appropriate for use in private-sector clinics and

demonstrated feasibility for digital malnutrition surveillance in low-resource urban settings. The integration of programs of this nature into provincial and national frameworks will enhance evidence driven nutritional planning and management.

Keywords: Digital Nutrition Registry, Implementation Research, Malnutrition, Acceptability, Appropriateness, Private Sector, Pakistan, RE-AIM, Technology Acceptance Model, Task-Technology Fit.

PG-VC-6-Assessment Of Knowledge Regarding Prostate Cancer Among Non-Medical Male Staff At A Tertiary Care Setting In Wah Cantt

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Background & Objectives: Prostate cancer remains a significant global health burden, accounting for over 1.4 million new cases in 2020. While early clinical manifestations include pelvic pain and lower urinary tract symptoms, screening rates remain suboptimal due to low health literacy. In the Pakistani context, prostate cancer ranks 13th in incidence, yet awareness regarding modifiable risk factors like obesity and non-modifiable factors like family history remains largely unaddressed among non-medical populations.

The primary objective of this study was to assess the baseline level of knowledge regarding prostate cancer, its risk factors, and clinical indicators among the male non-medical staff of Wah Medical College and POF Hospital.

Methods: This cross-sectional study was conducted between December 2024 and March 2025 at Wah Medical College and POF Hospital, Wah Cantt. A total of 84 non-medical male employees were selected using a non-probability convenience sampling technique. Inclusion criteria focused on male employees currently working in administrative or support roles, while medical professionals were excluded. Data were collected via a self-designed, structured, and self-administered questionnaire covering demographics and disease-specific knowledge. Statistical analysis was performed using SPSS version 23. Qualitative variables were expressed as frequencies and percentages. The chi-square test was employed to determine the association between educational levels and knowledge scores, with a $p\text{-value} < 0.05$ considered statistically significant.

Results: Among the 84 participants, 80% had attained secondary education, while 20% had primary education. The overall knowledge assessment revealed that 65% of participants possessed average knowledge, 31% demonstrated good knowledge, and 4% had poor knowledge levels. A statistically significant association was found between the participants' level of knowledge and their recognition of increasing age as a primary risk factor ($p = 0.015$). Furthermore, a significant correlation was observed between higher knowledge levels and the awareness that prostate enlargement may serve as a potential indicator of malignancy ($p = 0.018$).

Conclusion: While the majority of the non-medical staff demonstrated average awareness, critical gaps in knowledge persist regarding specific risk factors and the importance of early screening. Targeted educational interventions and institutional health awareness campaigns are essential to bridge these gaps, particularly

for staff with lower educational backgrounds, to facilitate earlier diagnosis and better clinical outcomes.

Key words: Prostatic Neoplasms; Health Knowledge, Attitudes, Practice; Risk Factors; Awareness; Early Detection of Cancer

PG-VC-7-Association Between Clark Twin Block Appliance Treatment and Social and Emotional Wellness In Children With Malocclusion – A Cohort Study

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Background & Objectives: Class II malocclusion is common in adolescents and may adversely affect facial aesthetics, self-esteem, and social interactions. Functional appliances such as Clark's Twin Block are used to correct skeletal discrepancies during growth, yet treatment outcomes are often assessed clinically, with limited focus on psychosocial effects. Patient-reported outcome measures (PROMs), including the Child Perception Questionnaire (CPQ), provide insight into social and emotional well-being. This study evaluated the association between Clark's Twin Block therapy and social and emotional wellness in children.

Methods: This cohort study was conducted at Aga Khan University Hospital after Ethical Review Committee approval and in accordance with STROBE guidelines. Fifty-six children aged 13–17 years with skeletal Class II malocclusion at Cervical Vertebral Maturation stages 3 or 4 were included. Compliant patients treated with Clark's Twin Block appliance

were enrolled, while those with craniofacial anomalies or communication difficulties were excluded. Social and emotional impacts were assessed using a prevalidated CPQ administered after completion of therapy. Data were analyzed using SPSS with paired t-tests or Wilcoxon signed-rank tests, with $p < 0.05$ considered significant.

Results: The sample included 27 males (48.2%) and 29 females (51.8%). Emotional wellness scores improved significantly from a median of 7.5 to 3 ($p < 0.001$), and social wellness scores improved from 1.5 to 0 ($p < 0.001$). No significant gender-based differences were observed.

Conclusions: Clark's Twin Block therapy is associated with improved social and emotional wellness in children with Class II malocclusion. The use of PROMs supports patient-centered orthodontic care.

Keywords: Child perception questionnaires, Clark's Twin Block appliance, Functional appliance, Oral health-related quality of life (OHRQoL), Skeletal class II malocclusion, Social and emotional wellness

PG-VC-8-Beyond Physical Disability: A Cross-Sectional Survey Of Oral Health Related Quality Of Life Among Patients With Spinal Cord Injury In A Rehabilitation Setting

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Background: Spinal Cord Injury (SCI) is a debilitating neurological condition resulting in

long term disability, dependence and reduced quality of life. Physical constraints to dental care services place SCI patients at high risk of poor oral conditions which affects Oral Health Related Quality of Life (OHRQoL). There is limited evidence on OHRQoL among SCI patients particularly in LMICs. This study aim to assess OHRQoL among SCI patients attending rehabilitation centre using Oral Health Impact Profile-14 (OHIP-14). **Methods:** A cross sectional study was conducted at Paraplegic Centre Peshawar. Participants aged 18> were recruited using convenience sampling. Participants with diabetes, pregnancy and cognitive impairment were excluded. Data were collected using self administered questionnaire OHIP-14 to assess OHRQoL.

Results: A total of 50 SCI patients were included (mean age 35.48 ± 14.26 years). Males comprised 72% of sample. Thoracic injuries were more common than lumbar injuries (64% vs. 36%). The mean OHIP-14 score was 10.30 ± 11.36 [Median (IQR): 6.0 (IQR = 11.75)] with most participants (76%) categorized having good OHRQoL, while 24% exhibited poor OHRQoL. Sex was the only variable associated with OHRQoL ($p = 0.017$). Females demonstrated higher mean OHIP-14 scores compared to males, indicating worse OHRQoL (OR = 6.20; 95% CI: 1.49–25.77; $p = 0.01$). No significant associations were observed between OHIP-14 scores and age, marital status, educational level, or level of spinal cord injury ($p > 0.05$).

Conclusion: OHRQoL impairment was evident among individuals with SCI, although the overall impact was generally mild to moderate. Female sex emerged as the only significant factor associated with poorer OHRQoL, highlighting potential sex-related disparities in perceived oral health. These

findings emphasize the need for larger, adequately powered studies to validate these observations and inform targeted interventions.

Keywords: Spinal cord injury; oral health related quality of life; rehabilitation; disability.

PG-VC-9-Bridging the Gap Between Guidelines and Practice In The Management Of Upper Gastrointestinal Bleeding: A Clinical Audit

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Background & Objectives: Upper gastrointestinal bleeding is a frequent medical emergency associated with significant morbidity and mortality if not managed according to established clinical guidelines. Timely risk assessment, early pharmacological therapy, and prompt endoscopic evaluation are essential to improve patient outcomes. This clinical audit was conducted to assess the current practices related to the initial management of patients presenting with upper gastrointestinal bleeding in the emergency department of a tertiary care hospital and to compare these practices with recommended international standards.

Methods: A retrospective audit of medical records was performed for patients presenting with symptoms suggestive of upper gastrointestinal bleeding, including hematemesis and melena, over a three-month period. Data were collected using a structured audit tool focusing on documentation of vital

signs on admission, early hemoglobin testing, initiation of proton pump inhibitor therapy, use of standardized risk stratification scoring, and referral for endoscopic evaluation within the recommended timeframe.

Results: A total of 60 patient records met the inclusion criteria.

Documentation of vital signs at presentation was observed in 93% of cases, while hemoglobin testing within the first hour was performed in 86% of patients. Proton pump inhibitor therapy was initiated promptly in 80% of patients; however, formal risk stratification using a validated scoring system was documented in only 40% of cases. Referral for endoscopic assessment within twenty-four hours was achieved in 65% of patients. The findings indicate acceptable compliance with initial stabilization and pharmacological management but reveal deficiencies in standardized risk assessment and timely endoscopic referral.

Conclusion: This audit highlights the need for improved awareness of clinical guidelines, implementation of standardized assessment protocols, and regular training of emergency and medical staff. Re-audit following targeted interventions may help improve compliance and enhance the quality of care for patients presenting with upper gastrointestinal bleeding.

Keywords: Gastrointestinal bleeding, Clinical audit, Emergency management, Endoscopy, Patient safety

PG-VC-10-Clinical Case Report: Tuberous Sclerosis Complex

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Background & Objectives: Tuberous sclerosis complex is an autosomal dominant genetic disorder that affects multiple systems resulting in formation of hamartomas in different organs such as skin, CNS, kidney and lungs. Here, we report a case of a 14 years old male child.

Methods: case presentation: A 14 years old special child from Peshawar who was known epileptic, landed in Emergency department of KTH, Peshawar with myoclonic fits.

Initially IV midazolam and diazepam were administered but fits did not control. His condition got improved with IV levetiracetam and sodium valproate.

On Examination of this child, it was revealed that he had bilateral cataract in eyes. There were macules and ash leaf spots on skin. His lab investigations showed raised CRP of about 32.65mg.

His CT scan Brain showed multiple calcified sub-ependymal tubers along both lateral ventricles. Calcified subcortical tubers were also seen in right occipital and frontal lobe. However, there was no midline shift. Abdominal USG depicted bilateral renal cysts.

His clinical features showed **classic triad (Vogt's triad)** ⁽¹⁾ of tuberous sclerosis. Furthermore, CT scan and MRI brain report were also suggestive of tuberous sclerosis disease.

Conclusion: TSC is a rare genetic disorder and lifelong condition. Due to its multisystem involvement it can lead to severe complications such as cardiac rhabdomyomas and pulmonary manifestations which can consequently lead to death. Hence early diagnosis and prompt

treatment is necessary to prevent drastic complications.

Keywords: fever, seizures, hamartomas, tuberous sclerosis.

PG-VC-11-Comparison Of Efficacy Of Azithromycin Alone Versus Combination Of Azithromycin And Probiotics In Management Of Mild To Moderate Acne Vulgaris – A Randomized Controlled Trial

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Background & Objectives: : Acne vulgaris is highly prevalent among adolescents, while oral antibiotics remain a cornerstone for moderate inflammatory acne, rising concerns regarding antibiotic resistance and disruption of skin microbiome prompted exploration of adjunctive therapies like probiotics. The objective was to compare the efficacy of oral azithromycin alone versus azithromycin combined with probiotics in patients with mild to moderate acne vulgaris.

Methods: This randomized controlled trial was conducted at the Dermatology Department, Hayatabad Medical Complex, Peshawar (IREB No. 2176; NCT06943118 A total of 70 patients aged 15–35 years with mild to moderate acne (Global Acne Assessment Scale score 2–3, lesion count 20–50) were enrolled. Four patients were lost to follow-up, and one was excluded due to allergy to topical treatment, leaving 65 patients who completed the study (control: n=30; experimental: n=35). Control group received oral azithromycin 250 mg on alternate days for 12 weeks. Experimental group received oral azithromycin 250 mg on alternate days plus one oral probiotic ampoule daily for 12 weeks. Both groups received

standardized topical therapy (adapalene 0.1% and benzoyl peroxide 2.5% gel) once daily. Paired and independent t-tests were used for analysis; chi-square test compared lesion severity between groups.

Results: Both groups demonstrated significant reduction in lesion counts at 12 weeks (control: $35.13 \pm 9.53 \rightarrow 12.83 \pm 5.50$, $p < 0.001$; experimental: $33.17 \pm 7.80 \rightarrow 10.06 \pm 6.38$, $p < 0.001$). Between group differences in lesion counts were insignificant ($p=0.06$). However, chi-square test revealed superior clinical improvement with probiotics with 62.8% of patients achieving "clear" or "almost clear" versus 33.3% in controls ($p = 0.01$), indicating that lesion count alone underestimates therapeutic effect..

Conclusion : Adjunctive oral probiotics with azithromycin provides superior improvement in clinical severity of mild to moderate AV compared to azithromycin alone.

Keywords: Acne vulgaris, azithromycin, probiotics

PG-VC-12-Comparison Of Oral Hygiene Status Among Primary And Permanent Dentition In Public And Private Primary Schools Of Peshawar: A Cross-Sectional Analysis

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Background & Objectives: Oral health is a standard of tissue health enabling individuals to eat, speak, and socialize without active disease, embarrassment, or discomfort, contributing significantly to general well-being. This study aimed to determine the oral hygiene status of primary and permanent dentition among primary school students in Peshawar and compare these outcomes between the public and private sectors.

Methods: A cross-sectional analysis was conducted across four schools selected via multi-stage random sampling, involving a total sample of 249 students. Participants were stratified into 5–10 and 10–15-year age groups to represent primary and permanent dentition, respectively. Data collection utilized the standard WHO oral health questionnaire and the Loe and Silness Plaque Index. Data being non-normally distributed (Shapiro-Wilk $p < 0.01$), Mann Whitney U test revealed no significant ($p=0.952$) difference between plaque index (PI) scores in private and public primary schools but showed a significant ($p=0.019$) difference between primary and permanent dentition. Spearman correlation test identified positive correlation between age and plaque index (PI) scores, where latter worsened with increasing age. Also, socioeconomic status advantage (in case of private school students) did not translate into better clinical hygiene.

Results: To identify the drivers of toothache-related absenteeism, binary logistic regression was employed using a purposeful selection process to build a multivariable adjusted model. The final model demonstrated high statistical significance (p -value=0.000) and explained 26.4% of the variance in school absenteeism. Functional impairment, specifically difficulty biting or chewing, was identified as the strongest independent predictor, with affected students being 6 times more likely to miss school ($p < .001$, adjusted OR = 6.08). School type also emerged as a significant factor with public school students 3 times more likely to miss school due to toothache (adjusted OR = 3), alongside recent dental visits within 12 months (adjusted OR = 1.64).

Conclusion: These findings highlight a need for school-based programs to prioritize acute clinical pain management alongside hygiene education.

Keywords: Oral Hygiene, Primary Dentition, Permanent Dentition, School Absenteeism, Peshawar. Primary school

PG-VC-13-Comparison Of Survival Rate And Duration Of Maxillary And Mandibular Lingual Bonded Retainers – A Retrospective Cohort Study

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Background & Objectives: This study aimed to evaluate the survival rates of maxillary and mandibular lingual bonded retainers fabricated

from coaxial wire. It also analyzed the impact of operator experience, as well as patients' inherent and treatment-related factors, including age, sex, malocclusion, and the number of teeth bonded, on their survival rates.

Methods: This study comprised a sample size of 300 participants. The records of patients with maxillary and mandibular lingual bonded retainers were retrospectively analyzed during a five-year follow-up period to assess retainer survival, types of failure, and the timing of those failures. Descriptive statistics were calculated, Cox regression analysis was employed to assess possible predictors of retainer survival, while the Kaplan-Meier survival curve was used for assessment of the survival function.

Results: Survival rates for maxillary and mandibular lingual bonded retainers were 39.8% and 66.3%, respectively, over a mean observation period of 60 months. Survival regression analysis showed that the risk of retainer failure in the mandible was 0.43 times lower compared to the maxilla. Additionally, the risk of retainer failure was 1.61 times higher when second premolars were included in the retainer, while it was 0.7 times lower when placed by a fourth-year resident.

Conclusions: The maxillary lingual bonded retainers exhibited a significantly higher failure rate than the mandibular lingual bonded retainers. Survival rates were lower with less experienced operators and in longer-span retainers, especially those extending to the second premolars.

Keywords: Bonded retainers; Long-term retention; Retainer failure; Survival rate.

PG-VC-14-Comparison of Swiss Lithoclast Trilogy™ And Pneumatic Swiss Lithoclast In Mini-Percutaneous Nephrolithotomy In Terms Of Stone Free Rate And Complications: A Single-Center Experience

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Background & Objectives: Renal calculi therapy has advanced significantly in recent years, with mini-percutaneous nephrolithotomy (PCNL) emerging as a minimally invasive treatment modality. Mini-PCNL has been subjected to several modifications to achieve the best possible outcomes and reduce morbidity. This study aimed to compare the efficacy and safety of Swiss LithoClast Trilogy™ and pneumatic Swiss LithoClast™ in managing renal stones with mini-PCNL.

Methods: This descriptive retrospective study was conducted at the Department of Urology, Lady Reading Hospital, from January 1, 2023, to December 31, 2023. A record of male and female patients aged more than 18 years who underwent mini-PCNL for renal stones was retrieved. The following two groups of patients were created: group A (n = 25) mini-PCNL with Swiss LithoClast Trilogy™ and group B (n = 26) mini-PCNL with pneumatic Swiss LithoClast™. The efficacy and safety profile of both groups was compared.

Results: A total of 51 patients were enrolled, with 25 in group A and 26 in group B. Groups A and B had mean ages of 45.2 and 47.5 years, respectively. Male participants outnumbered females in both groups, 72% (n = 18) in group A and 77% (n = 20) in group B. Group A had a mean stone size of 15.8 mm, and group B had

a mean stone size of 16.5 mm. Stone-free rate on postoperative day one was 88% (n = 22) in group A and 84.6% (n = 22) in group B, with no statistically significant difference ($p > 0.05$). At the end of three months, 96% of participants in group A and 84.6% of patients in group B were found to be free of stones, and the difference between the two groups was not statistically significant ($p > 0.05$). Intraoperative hemorrhage occurred in 12% (n = 3) of group A and 15.4% (n = 4) of group B patients, with no significant difference ($p > 0.05$).

Conclusions: There were no significant differences in stone-free rates, complication rates, or intraoperative/postoperative complications between mini-PCNL with Swiss LithoClast Trilogy™ or Pneumatic Swiss LithoClast™.

Keywords: stone-free rate, pneumatic swiss lithoclast™, swiss lithoclast trilogy™, mini-pcnl, mini-percutaneous nephrolithotomy, renal calculi

PG-VC-15-Early Clinical Outcomes Following Laparoscopic Pylorus-Preserving Versus Classical Pancreaticoduodenectomy: A Prospective Study

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Background & Objective: Laparoscopic pancreaticoduodenectomy is increasingly performed worldwide. The pylorus-preserving approach (LPPPD) may offer physiological benefits, but comparative prospective data with laparoscopic classical

pancreaticoduodenectomy (LCPD) remain limited.

To compare early postoperative outcomes between LPPPD and LCPD.

Methods: This prospective cohort study included 40 patients undergoing elective laparoscopic pancreaticoduodenectomy at a tertiary center. Patients were grouped into LPPPD (n = 22) and LCPD (n = 18). Standard ISGPS definitions were used for postoperative pancreatic fistula (POPF) and delayed gastric emptying (DGE). All patients were followed for 90 days.

Results: A total of 40 patients were included, with 22 undergoing laparoscopic pylorus-preserving pancreaticoduodenectomy (LPPPD) and 18 undergoing laparoscopic classical pancreaticoduodenectomy (LCPD). Participant ages ranged from 37 to 68 years, with a mean age of **52.4 ± 7.6 years**, and age distribution was comparable between groups. Major postoperative complications (Clavien–Dindo ≥ III) were slightly lower in LPPPD (13%) compared with LCPD (17%). Gastrojejunostomy/anastomotic leak and delayed gastric emptying were also higher in LPPPD (leak 12%, DGE 18% vs LCPD leak 5%, DGE 11%). However, LPPPD demonstrated advantages including lower mean intraoperative blood loss (≈260 mL vs 390 mL), shorter median hospital stays (7 vs 9 days), and fewer dumping symptoms (9% vs 22%). Mortality was low and comparable in both groups (LPPPD 4.5% vs LCPD 5.5%), and R0 resection rates were similar.

Conclusion: Both laparoscopic approaches are safe and feasible. Although LPPPD has slightly higher rates of pancreatic fistula and delayed gastric emptying, it offers advantages

in terms of reduced blood loss, shorter hospitalization, and fewer postoperative dumping symptoms. Overall complication rates and mortality were low and comparable, and oncologic outcomes were similar. These findings suggest that **LPPPD may be considered a slightly better minimally invasive option** for selected patients, balancing physiological benefits with acceptable postoperative risks.

Keywords: pylorus-preserving approach, delayed gastric emptying, postoperative pancreatic fistula

PG-VC-16-Effectiveness Of Antimicrobial Coatings On Orthodontic Mini-Implants In Preventing Post-Surgical Infections: A Literature Review

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Background & Objectives: Orthodontic mini-implants (TADs) provide essential skeletal anchorage but are vulnerable to early failure from biofilm-driven inflammation at the transmucosal collar during the critical early healing window (~2–4 weeks), with highest vulnerability during first three weeks. Antibiotic-sparing, localized surface technologies are required to combat infection and address Antimicrobial Resistance (AMR) stewardship.

Methods: A focused narrative review (January 2014 – November 2025) of MEDLINE-indexed evidence utilized the Technology Readiness Level (TRL) framework to assess

the translational feasibility and identify clinical frontrunners.

Results: Zn-PEO coatings are the leading durable preclinical platform (TRL 6–7), showing ~ 7-day zinc ion release and >60% biofilm reduction. CHX thin films provide prolonged antiseptic coverage (~22 days). TNT reservoirs (TRL 5–6) support localized drug delivery and have increased BIC from 44% to 72% in vivo. In orthodontics, CHX-coated miniscrews represent the clearest early clinical translation (TRL 7). However, available clinical evidence suggests the improvement in success and peri-implant parameters.

Conclusion: The recommended strategy is a three-part layered approach: a durable Zn-PEO base, an acute CHX/TNT overlayer, and UV Photofunctionalization (UVP) as a wetting adjunct. Zn-PEO coatings remain at TRL 6–7, while CHX coatings have advanced to TRL 7 following human trials.

Keywords: Orthodontic mini-implants; Temporary Anchorage Devices; Antimicrobial coatings; Antibiotic-Sparing Strategies; Zinc-PEO; Peri-implant inflammation; Technology Readiness Level (TRL)

PG-VC-17-Effectiveness of The GI Genius Computer-Aided Detection System Versus Standard Colonoscopy: A Systematic Review and Meta-Analysis

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Background & Objectives: Colorectal cancer prevention depends on high quality colonoscopy, yet clinically relevant lesions are still missed. GI Genius is an FDA cleared computer aided detection system that flags suspected polyps in real time. We conducted a PRISMA aligned systematic review and meta analysis of randomized controlled trials in adults comparing GI Genius assisted versus standard colonoscopy.

Methods: PubMed, Ovid Embase, and the Cochrane Central Register of Controlled Trials were searched from inception through August 25, 2025, with citation chasing.

Results: Seven trials (n = 9,639) met eligibility criteria. Random effects meta analysis showed higher adenoma detection rate with GI Genius (risk ratio 1.12, 95% confidence interval 1.03 to 1.22; I² = 64%). Secondary outcomes also favored GI Genius: polyp detection rate (two trials, n = 5,225; risk ratio 1.05, 95% confidence interval 1.01 to 1.10; I² = 0%), sessile serrated lesion detection rate (four trials, n = 7,013; risk ratio 1.27, 95% confidence interval 1.11 to 1.47; I² = 11%), adenomas per colonoscopy or mean adenomas per patient (six trials, n = 9,253; standardized mean difference 0.15, 95% confidence interval 0.09 to 0.20; I² = 29%), and polyps per colonoscopy or mean polyps (two trials, n = 5,228; standardized mean difference 0.10, 95% confidence interval

0.05 to 0.15; $I^2 = 0\%$). Safety reporting was limited and was not pooled. **Conclusion:** Overall, adjunctive GI Genius improved clinically meaningful detection outcomes, including adenoma and sessile serrated lesion detection and per procedure lesion counts, supporting consideration of routine activation of GI Genius during eligible colonoscopies to strengthen colorectal cancer prevention.

Keywords: Colonoscopy, GI Genius, CADe, Adenoma, Polyp, Meta-analysis

PG-VC-18-Effects Of Instrument-Assisted Soft Tissue Mobilization Vs. Neurodevelopmental Therapy On Motor Function In Children With Spastic Diplegic Cerebral Palsy – A Randomized Controlled Trial

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Background & Objectives: Spastic diplegic cerebral palsy often results in multiple motor impairments requiring early and sustained rehabilitation. Conventional therapies frequently suffer from poor compliance, slower progress and increased economic burden. This study aimed to compare the effects of neurodevelopmental therapy (NDT) and instrument-assisted soft tissue mobilization (IASTM), both combined with strength training, on motor function in children aged 4 to 12 years with spastic diplegic cerebral palsy classified as GMFCS levels I and II.

Methods: In a single-blinded randomized controlled trial, 60 participants were randomly allocated equally to receive either IASTM or NDT along with strength training. **Results:** Outcomes assessed at baseline, 4 weeks, and 8 weeks using the Modified Ashworth Scale, Universal goniometer, and GMFM-88 Dimensions D and E were analyzed through SPSS version 22. Results showed no significant difference between groups for GMFM Dimension D ($p = 0.183$). However, the IASTM group significantly outperformed NDT in GMFM Dimension E ($p = 0.024$), right knee extension ($p = 0.001$), left knee extension ($p < 0.001$), right ankle dorsiflexion ($p = 0.004$), and left ankle dorsiflexion ($p < 0.001$). No other tone differences were found for hamstring or gastrocnemius muscle tone, except for the left hamstring ($p = 0.016$).

Conclusion: These findings indicate that IASTM combined with strength training yields superior improvements in joint mobility and gross motor skills related to running, jumping, and walking compared to NDT. This supports integrating IASTM in pediatric rehabilitation programs, where time is limited.

Keywords: Cerebral Palsy, Spastic Diplegia, Neurodevelopmental Therapy, Instrument-Assisted Soft Tissue Mobilization, Gross Motor Function

PG-VC-19-Effects of Transcranial Direct Current Stimulation on Balance in Parkinson Disease: A Meta-Analysis

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Background and Objectives: Transcranial direct current stimulation (tDCS) has recently

gained attention as a non-invasive neuromodulation technique for improving balance in Parkinson's disease (PD). tDCS modulates cortical excitability and may enhance neurotransmitter release, including dopamine. However, evidence regarding its clinical efficacy remains inconclusive. This meta-analysis aimed to evaluate the effects of tDCS on balance in individuals with PD.

Methods: Studies were identified using the PICOD approach and searched across CENTRAL, PEDro, CINAHL, PubMed, MEDLINE, and ProQuest databases from 2016-2024. Data were analyzed using RevMan 5.4.1. Heterogeneity was evaluated using the I^2 statistic, and study quality was assessed using the PEDro scale.

Results

Thirteen RCTs were included. The pooled results for balance (SMD = -0.15, 95% CI: -0.48 to 0.18, I^2 = 12%, p = 0.33 indicated no significant improvements following tDCS.

Conclusion

Current evidence suggests that tDCS does not significantly improve balance in PD. The non-significant effects may be attributed to small sample sizes and methodological heterogeneity across studies. Future trials with larger sample sizes and standardized stimulation protocols are warranted.

Keywords: Transcranial direct current stimulation, Physiotherapy, Parkinson's disease, Balance, Motor symptoms.

PG-VC-20-Efficacy Of Oral Minoxidil In The Treatment Of Androgenic Alopecia In Male Patients

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Background & Objective: To determine the efficacy of oral minoxidil in the treatment of androgenic alopecia among male patients presenting to a tertiary care hospital.

Methods: A quasi-experimental study was conducted in the Department of Dermatology, MTI-Hayatabad Medical Complex, Peshawar, from 08 August 2024 to 08 February 2025. Sixty-one male patients aged 18–60 years with androgenic alopecia were enrolled consecutively after ethical approval. Oral minoxidil 5 mg once daily was administered for four months. Efficacy was defined as ≥ 1 grade improvement on the Norwood–Hamilton scale after three months of therapy. Data were collected on a structured proforma and analyzed using IBM SPSS version 27. Mean $\pm$ SD was calculated for continuous variables and n (%) for categorical variables. Chi-square or Fisher's exact test and logistic regression were applied, with $p < 0.05$ considered significant.

Results: The mean age of participants was 40.31 ± 11.98 years and mean weight 74.76 ± 8.34 kg. Mean systolic and diastolic blood pressures were 124.92 ± 13.55 mmHg and 78.25 ± 11.33 mmHg, respectively, and mean heart rate was 78.30 ± 14.43 beats/min. Dyslipidemia was present in 22 (36.1%) patients and smoking in 25 (41.0%). Oral minoxidil was effective in 55 (90.2%) patients. Stratified analysis and logistic regression showed no significant association between efficacy and patient characteristics ($p > 0.05$ for all).

Conclusion: Oral minoxidil 5 mg once daily is highly effective in improving androgenic alopecia in males, with response remaining

consistent across demographic and clinical subgroups.

Keywords: Androgenic alopecia; Minoxidil; Alopecia/drug therapy; Hair loss; Norwood–Hamilton scale.

PG-VC-21-Electrophysiological Localization and Prognostic Indicators in Radial Neuropathy Presenting As Wrist Drop

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Background & Objective: Radial neuropathy is a common cause of wrist drop, and accurate lesion localization is essential for appropriate management and prognostication. Clinical assessment alone may not reliably distinguish proximal radial nerve lesions from distal branch entrapments, highlighting the importance of electrophysiological studies. To analyze electrophysiological localization patterns of radial nerve lesions presenting as wrist drop and to evaluate the association between timing of electrophysiological assessment and functional recovery.

Methods: This retrospective observational study was conducted at a tertiary care setting over a three-year period (January 2022–December 2024). Adult patients with wrist drop and electrophysiological confirmed radial neuropathy were included. Nerve conduction studies and needle electromyography were used to classify lesions as high radial nerve palsy, posterior interosseous nerve (PIN) syndrome, or radial tunnel syndrome.

Functional recovery at ≥ 3 months was categorized as complete, partial, or none. Outcomes were compared between early (≤ 4 weeks) and delayed (> 4 weeks) electrophysiological evaluation.

Results: Fifty-four patients were analyzed (mean age 42.3 ± 15.2 years; 70.4% male). High radial nerve palsy was the most common lesion (61.1%), followed by PIN syndrome (29.6%) and radial tunnel syndrome (9.3%). Compression was the leading etiology. Complete recovery was significantly more frequent in patients undergoing early electrophysiological evaluation compared with delayed assessment (76.0% vs. 44.8%; $p = 0.03$).

Conclusion: Electrophysiological studies provide accurate localization and prognostic information in radial neuropathy presenting as wrist drop. Early electrophysiological evaluation is associated with improved functional recovery and should be incorporated into routine assessment.

Keywords: Radial Neuropathy, Electrophysiology, Prognosis, Wrist drop.

PG-VC-22-Evaluating Artificial Intelligence Performance In Patient Communication: A Cross-Sectional Comparison Of ChatGPT-4 Pro, Deepseek AI, Gemini Pro, And Microsoft Copilot In Retainer Guidance

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Background & Objective: Artificial intelligence (AI) is increasingly used in orthodontics, yet evidence on the accuracy of

large language models (LLMs) for patient education about retainers is limited. This study aimed to assess and compare the performance of ChatGPT 4 Pro, Microsoft Copilot AI Pro, DeepSeek AI, and Gemini AI Pro in delivering accurate retainer-related guidance

Materials and Methods: A cross-sectional survey was conducted after ethics exemption. One hundred ten validated questions on orthodontic retainers were submitted to ChatGPT, Copilot, DeepSeek, and Gemini. Six orthodontists independently rated responses using a modified five-point Likert scale, and inter-rater reliability was assessed with the intraclass correlation coefficient.

Results: The overall accuracy revealed that 68.6% of responses scored 4, while 15.3% achieved a perfect score of 5. Among the LLMs, Gemini ranked first with 96.8%, followed by ChatGPT at 95.6%, DeepSeek at 76.8% and Copilot at 66.2%. Gemini produced more perfect scores, whereas ChatGPT consistently earned strong ratings. The mean ratings across six raters demonstrated strong reliability (ICC = 0.81), reflecting expert agreement.

Conclusions: Findings suggest that AI models such as ChatGPT and Gemini can effectively support patient education regarding orthodontic retainers. However, specialist oversight is critical to maintain accuracy and clinical applicability. Future research using larger and more diverse datasets is needed to assess the full potential of AI's capabilities.

Keywords: Artificial intelligence (AI), Large language models (LLMs), Orthodontic retainers, ChatGPT, Copilot, DeepSeek

PG-VC-23-Evaluating Changes In Knowledge And Awareness Of Global Surgery Through A Single Educational Session: A Quasi-Experimental Study

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Background: Global surgery is a rapidly evolving field that addresses disparities in surgical care, particularly in low- and middle-income countries (LMICs). The Lancet Commission on Global Surgery emphasized that 5 billion people lack access to safe and affordable surgical care, underscoring the urgency for education and capacity-building initiatives.

Methods: This Quasi experimental study was conducted among medical students in Pakistan who attended a webinar. In the pre-intervention phase, participants completed a validated questionnaire assessing baseline familiarity with global surgery, confidence in understanding key challenges, and self-assessed professional skills across domains such as research, advocacy, and communication. After the webinar, participants completed a post-intervention questionnaire designed to measure changes in the same domains, as well as satisfaction with the webinar content.

Results: Of 289 medical students (median age: 21; 69.6% female), only 18% had prior exposure to global surgery. Post-webinar, familiarity with global surgery, belief in its role in addressing health inequities, and confidence in understanding its challenges significantly improved (all $p < 0.001$). Most participants reported enhanced professional readiness, satisfaction with the webinar, and gains in

research, communication, teamwork, and policy-related skills. Males showed greater confidence in understanding global surgery ($p = 0.001$), while females were more willing to engage in future initiatives ($p = 0.017$).

Conclusion: findings highlight the academic utility of incorporating structured global surgery content into undergraduate medical education through accessible, low-resource modalities such as webinars.

Keywords: Global Surgery, Medical Education, Low- and Middle-Income Countries (LMICs).

PG-VC-24-Frequency and Reliance On AI Study Tools And Their Association With Attention And Brainstorming Abilities Among Medical Students: A Cross-Sectional Study Across Punjab

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Background & Objectives: Study tools based on artificial intelligence (AI) are being increasingly adopted by medical students for learning support. It is rather worrisome how these tools could affect some basic human cognitive processes like attending and brainstorming that are very essential in medical problem-solving situations, which require critical analysis as well as intelligent problem-solving capabilities. To determine the association between reliance on AI study tools, attention and brainstorming skills among medical students within public sector medical colleges of Punjab.

Methods: A cross-sectional study was done among 341 medical students in the first to final year through a convenience sampling technique. SPSS version 27.0 software was employed for data analysis. Correlation between AI use variables and other mentioned aspects were tested through chi-square test.

Results: The overwhelming majority of the students had average attention (66.3%) and AI brainstorming ability (58.1%). Greater reliance on AI had a significant positive relation with higher levels of attention ($p = 0.003$), but no relation with the frequency of AI use. Abilities in brainstorming had no significant relation with the use and reliance on AI, but the involvement in creative activities had a significant positive relation with the level of AI brainstorming ($p = 0.003$). There is also a significant positive relation between attention and AI brainstorming levels ($p = 0.001$).

Conclusion: AI study tools were found to be widely used and viewed as effective by medical students. A strong positive relationship of reliance on AI with the level of attention was found, implying that the impact of AI on cognition is related to the manner of use of AI. Engagement in creative tasks showed a strong positive relationship with brainstorming skill.

Keywords: Artificial Intelligence (D001185), Attention (D001288), Medical Student (D013337)

PG-VC-25-Frequency Of Common Uropathogens And Antibiotic Sensitivity Pattern In Children

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Background & Objectives: In children bacteria can cause urinary tract disease. Empirical antibiotic treatment is given on local sensitivity of Uropathogens to antibiotics. In Pakistan commonly used treatment is Trimethoprim – Sulfamethoxazole .To assess the frequency of most common uropathogen and antibiotic sensitivity/resistance pattern in uropathogens.

Materials and Methods.

An experimental study was carried out among children with overt symptoms of UTI of age ranging from 5 months to 14 years. The data was acquired systematically from members of defined population by collecting morning midstream urine samples by clean catch method. Isolated urine samples were cultured with cysteine lactose electrolyte deficient (CLED) agar and isolated colonies were then gram stained followed by various biochemical and antibiotic sensitivity test. The study was performed in a time frame of 8 months starting from February 2021 to September 2021.

Results: 168 individuals were included in this study . The most frequent uropathogen identified was Escherichia coli. Its occurrence was 68.5%. The showed that most of the

uropathogens were sensitive to amikacin and most resistant to Cefotaxime.

Conclusion: UTIs are more prevalent among females. The most common pathogen is Escherichia coli. The highest sensitivity is observed to amikacin and highest resistance to Cefotaxime.

Keywords: Antibiotics, Antibiotic sensitive, Antibiotic resistant, Urinary tract infection(UTI),Bacteria, Children

PG-VC-26-Functional Outcome Of External Fixation In Comminuted Distal Radius Fracture

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Background & Objective: Comminuted distal radius fractures are common orthopedic injuries, particularly in the elderly, and often result in significant functional impairment of the wrist. External fixation is a widely used treatment modality for unstable comminuted fractures, offering advantages such as minimal soft tissue disruption and early mobilization. To determine the functional outcome of external fixation in patients with comminuted distal radius fractures at Khyber Teaching Hospital, Peshawar.

Methods: This descriptive study will be conducted in the Orthopedic Surgery Department of Khyber Teaching Hospital over a minimum period of six months following CPSP approval. A total of 97 patients aged 18–65 years with comminuted distal radius fractures will be enrolled using consecutive non-probability sampling. All patients will undergo external fixation under general anesthesia. Functional outcome will be assessed six weeks postoperatively using the

Quick-DASH score. Data will be analyzed using IBM SPSS version 25, with appropriate descriptive and inferential statistics applied.

Results: Functional outcomes will be categorized as excellent, good, fair, or poor based on Quick-DASH scores. Stratification will be performed to assess the effect of demographic and clinical variables.

Conclusion: This study will provide local evidence regarding the effectiveness of external fixation in restoring wrist function in comminuted distal radius fractures and may assist orthopedic surgeons in making informed treatment decisions.

Keywords: modality, Quick-DASH, Orthopedic Surgery.

PG-VC-27-Functional Outcome Of Locking Plate Fixation In The Management Of Displaced Olecranon Fractures Among Adults

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Background & Objective: Displaced olecranon fractures are common injuries of the elbow that can significantly impair joint function if not managed appropriately. Locking plate fixation has emerged as a reliable surgical technique, offering stable fixation and enabling early mobilization. This study aims to evaluate the functional outcomes of locking plate fixation in adult patients with displaced olecranon fractures. To evaluate the functional outcomes of locking plate fixation in the management of displaced olecranon fractures among adult patients.

Methods: One hundred and fourteen patients aged 18–65 years with displaced olecranon fractures were selected for this study. Surgical fixation was performed under general anesthesia using an olecranon locking plate via a posterior midline approach with intraoperative imaging available if needed. Functional outcomes were assessed at two months using the Broberg and Morrey rating system.

Results: Mean age was 45.44 ± 14.42 years, with 51.8% male and 48.2% female cases. Functional outcomes were excellent in 79.8% cases, good in 14.0% and fair in 6.1%, with no poor outcomes reported.

Conclusion: Locking plate fixation exhibited excellent to good functional outcomes in most patients, restoring elbow function with minimal complications.

Keywords: Olecranon fracture, locking plate fixation, functional outcome, Broberg and Morrey scale, complications.

PG-VC-28-High Ambient Temperature And Worsening Of Skin Conditions In Pre-Expatriate Workers Bound For GCC States

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Background & Objectives: Exposure to high ambient temperatures is known to disrupt skin barrier function and alter the cutaneous microbiome, contributing to the exacerbation of common dermatological conditions. Despite

the growing population of migrant workers in high-temperature regions, studies examining temperature-related exacerbation of skin diseases in expatriates remain limited. This study aims to assess the association between perceived high-temperature exposure and the severity of skin conditions among Pakistani expatriates intended to go to the Gulf States.

Methods: A total of n=713 participants were included, with a mean age of 32.09±9.584 years.

Results: The most frequently reported conditions were Pityriasis versicolor (21%), Psoriasis (14.6%), and Scabies (14%). Commonly reported symptoms included itching and burning (33.8%), Redness/Inflammation (32.3%), social stigma/secondary infections (25.1%), and sleep/mobility disturbance (8.8%). Lesions predominantly involved exposed body sites (50.1%), followed by covered areas (38.4%) and multiple-site involvement (10.9%). A statistically significant association was observed between perceived temperature and skin conditions (<0.001) with worsening reported by 39.2% of outdoor workers compared with 9.8% of indoor workers. Multinomial regression analysis revealed that inflammatory skin conditions like Psoriasis (OR =0.12, 95% CI: 0.006-0.24) and eczema (OR=0.30, 95% CI: 0.14-0.61) were most likely to worsen under perceived high temperature exposure, compared with the reference category of Tinea corporis.

Conclusion: This study addresses an important knowledge gap and represents a novel contribution by highlighting how environmental heat exposure affects dermatological conditions in this vulnerable population. The findings underscore the need

for preventive strategies, early dermatological intervention, and workplace adaptations for expatriates exposed to extreme temperatures.

Keywords: Skin diseases, ambient temperature, expatriate workers, GCC, derma.

PG-VC-29-Improving Hand Hygiene Compliance In A Resource-Limited ICU: A Multimodal Intervention And Sensitivity Analysis

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Background & Objectives: Hand hygiene is a cornerstone of infection prevention, yet compliance remains inconsistent in intensive care units (ICUs), particularly in resource-constrained settings where electronic surveillance is often infeasible. This study evaluated the effectiveness of a low-cost, multimodal quality improvement intervention on hand hygiene compliance and assessed the impact of "compliant by default" scoring on adherence estimates.

Methods: We conducted a single-cycle Plan-Do-Study-Act (PDSA) quality improvement project in a 12-bed mixed medical-surgical ICU in Pakistan from December 2023 to January 2024. Utilizing the WHO Five Moments framework, we assessed

performance through weekly episode-based audits (n=942). Following a four-week baseline, a targeted multimodal intervention comprising education huddles, point-of-care visual reminders, audit feedback, and leadership engagement was implemented.

Results: Composite hand hygiene compliance increased significantly from 63.1% pre-intervention to 82.0% post-intervention (+18.9 percentage points). A critical sensitivity analysis, excluding non-applicable moments, revealed that pure adherence improved from 54.2% to 82.5% (+28.3 percentage points), confirming a genuine behavioral shift. The largest gains were observed in awareness-dependent moments explicitly targeted by the intervention: "after touching patient surroundings" (+40.0 pp) and "before touching the patient" (+27.0 pp). Notably, baseline pure adherence for high-risk moments involving body fluid exposure was only 12.2%, despite appearing as 80.0% in the primary composite metric.

Conclusion: A pragmatic, workflow-embedded intervention utilizing education and visual cues drove substantial short-term improvements in a resource-limited setting. Furthermore, while episode-based audits are operationally feasible, sensitivity analyses are essential to prevent standard scoring protocols from masking poor performance in high-risk clinical moments.

Keywords: Hand hygiene, quality improvement, ICU, WHO Five Moments, resource-limited settings

PG-VC-30-Incidence Of Permanent Pacemaker Implantation After Surgical Aortic Valve Replacement: Comparison Of Suturing Techniques

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Background & Objective: Permanent pacemaker (PPM) implantation due to postoperative conduction disturbances is a recognized complication following surgical aortic valve replacement (SAVR). Surgical factors, including annular suturing technique, may influence the risk of atrioventricular conduction injury. To compare the incidence of permanent pacemaker implantation following SAVR using semi-continuous versus interrupted suturing techniques.

Methods: This retrospective cohort study was conducted at the Peshawar Institute of Cardiology and included patients who underwent isolated SAVR between January 2022 and December 2024. Patients were categorized based on the suturing technique used: semi-continuous suturing (SCS) and interrupted suturing (IS). Demographic, clinical, and postoperative data were analyzed. The primary outcome was permanent pacemaker implantation within 30 days after surgery. Fisher's exact test was used for comparison, with statistical significance set at $p < 0.05$.

Results: A total of 196 patients were included (mean age 54.4 ± 6.9 years; 76% male). Eighty-one patients underwent SAVR using the semi-continuous technique, while 115 underwent interrupted suturing. Permanent pacemaker implantation was required in 3 patients (2.6%) in the interrupted suturing group, whereas no cases were observed in the semi-continuous group. This difference was not statistically significant ($p = 0.28$). Indications for pacemaker

implantation included complete heart block and high-grade atrioventricular block.

Conclusion: Both semi-continuous and interrupted suturing techniques during SAVR are associated with a low incidence of permanent pacemaker implantation, with no significant difference between the two approaches. Suturing technique selection may therefore be guided by surgeon preference and operative considerations rather than pacemaker risk.

Keywords: Surgical aortic valve replacement, permanent pacemaker, suturing technique, conduction disturbance

PG-VC-31-Ischemia Strategies And Their Impact On Renal Function Preservation After Open Partial Nephrectomy: A Retrospective Study

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Background & Objectives: Partial nephrectomy is the recommended surgical approach for small renal tumors usually less than 7cm in size. Partial nephrectomy offers comparable oncological efficacy to radical nephrectomy, combined with the potential advantage of preserving renal function. A crucial aspect of Partial nephrectomy is the intentional induction of renal ischemia to minimize intraoperative bleeding and ease the surgical resection of the tumor. As the duration of ischemia increases, the damage to the normal portion of the kidney also increases, with resultant decreased glomerular filtration rate (GFR) of the affected kidney. The objective of this study was to evaluate the

effect of different ischemia modalities (warm, cold, and zero ischemia) on postoperative renal function outcomes in patients who underwent open partial nephrectomy for polar T1 renal tumors.

Methods: We retrospectively analyzed 120 patients, collected via non-probability consecutive sampling, in the department of Urology at the Institute of Kidney Diseases Peshawar from August 2023 to Oct 2025. Patients were divided into three groups, i.e. Warm ischemia (W), Cold ischemia (C), and Zero ischemia (Z). Patients with renal tumors of less than 7cm, polar location, low complexity RENAL nephrometry scores, and Ipsilateral split renal function of greater than 40% were included in the study.

Results: Age was comparable across groups (warm 49.8 ± 9.2 years, cold 51.3 ± 8.7 years, zero 50.5 ± 9.5 years; ANOVA 0.66). Gender distribution also did not differ (male: 49%, 69%, 57%; χ^2 p 0.27). BMI showed a significant difference (27.8 ± 4.2 , 28.3 ± 4.4 , 31.0 ± 4.1 kg/m²; p=0.015), with higher BMI in the zero-ischemia group, while warm and cold were similar (post-hoc = 0.68). Tumor size was comparable (5.9 ± 0.72 , 6.0 ± 0.78 , 5.6 ± 0.85 cm; ANOVA 0.18). Preoperative split renal function was similar across groups (warm $50.1 \pm 3.4\%$, cold $48.8 \pm 3.7\%$, zero $48.3 \pm 3.2\%$; p=0.29). Postoperatively, functions declined significantly from the baseline to $40.0 \pm 3.9\%$, $42.0 \pm 2.7\%$, and $44.7 \pm 3.1\%$ in the warm, cold, and zero ischemia groups, respectively (ANOVA 0.002). Post-hoc testing showed significantly higher drop in warm ischemia compared to cold and zero ischemia (0.002). Preoperative hemoglobin was similar across groups (warm 13.5 ± 0.6 g/dl, cold 12.2 ± 0.9 g/dl, zero 12.7 ± 1.1 g/dl; p=0.09). Postoperatively,

hemoglobin declined significantly in all groups to 12.6 ± 0.4 g/dl, 11.8 ± 0.6 g/dl, and 10.9 ± 0.7 g/dl, respectively ($p = 0.02$). Post hoc testing indicated the lowest hemoglobin in the zeroischemia group versus both warm and cold ($p = 0.02$) while no difference was observed between warm and cold ischemia ($p = 0.25$).

Conclusion: Zero ischemia can improve nephrological outcomes after partial nephrectomy in low complexity renal tumors.

Keywords: Renal tumors, Partial nephrectomy, Warm ischemia, zero ischemia, Nephrological outcomes

PG-VC-32-Knowledge and Attitudes Toward Mental Health Among MBBS Students In Medical Colleges Of Khyber Pakhtunkhwa

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Background & Objectives: Mental health literacy and attitudes among medical students are essential determinants of future clinical competence, empathy, and patient-centered care. In Pakistan, particularly in Khyber Pakhtunkhwa (KP), sociocultural stigma, limited psychiatric exposure, and uneven institutional resources contribute to persistent misconceptions about mental illness. This study aimed to assess and compare knowledge and attitudes toward mental health among MBBS students enrolled in private and public medical colleges in Khyber Pakhtunkhwa.

Methods: A cross-sectional comparative design was employed, involving 100 MBBS students (50 from private and 50 from public

medical colleges) selected through stratified random sampling across all five academic years. Data were collected using a structured, bilingual self-administered questionnaire adapted from the Mental Health Knowledge Schedule (MAKS) and the Attitudes toward Mental Illness (AMI) scale.

Results: Descriptive statistics summarized demographic characteristics, knowledge levels, and attitude patterns. At the same time, inferential analyses including independent-samples t-tests, one-way ANOVA, Pearson's correlation, and regression analysis were conducted using SPSS version 25 with a significance level of $p < 0.05$. The study is expected to demonstrate significant differences in mental health knowledge and attitudes between students from private and public institutions, with higher literacy and more positive attitudes anticipated among private college students. Gender, year of study, and exposure to psychiatry-related coursework are also expected to influence mental health perceptions.

Conclusion: The findings underscore the need for standardized, culturally sensitive mental health education, early integration of psychiatry, and institutional psychological support services across medical colleges in KPK to reduce stigma and strengthen empathetic medical practice among future physicians.

Keywords: Mental Health Literacy, Medical Students, Mental Illness, Khyber Pakhtunkhwa

PG-VC-33-Knowledge, Attitude, Awareness And Perception Regarding Robotics In the Field Of Orthodontics: A Cross-Sectional Study

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Background & Objective: Robotics is transforming healthcare, including orthodontics, through applications such as automated wire bending, appliance fabrication, and nanorobotics. However, professional readiness for these innovations remains unclear. To assess knowledge, awareness, attitude, and perception (KAAP), of orthodontic residents and orthodontists regarding robotics, along with technology readiness levels (TRL), barriers, and enablers to adoption.

Materials and Methods: A cross-sectional study was conducted involving 200 participants (140 residents, 60 orthodontists), from August to September 2025 using purposive sampling technique. A validated questionnaire assessed demographics, KAAP, and TRL across three domains: wire bending, aligner/appliance manufacturing, and microrobotics. Reliability was tested using KR-20 and Cronbach's alpha. Linear regression explored associations between KAAP scores, demographics, prior exposure, and TRL. Significance was set at $p \leq 0.05$.

Results: Participants were predominantly female (60%) and hospital-based (80%), with minimal prior exposure (3%). KAAP scores indicated moderate knowledge, low awareness, and negative attitudes. TRL was highest for aligner manufacturing, moderate for wire bending, and lowest for microrobotics. Reliability was strong (KR-20: 0.744–0.806; α : 0.869). Female gender and prior lectures predicted higher KAAP scores. Key barriers

included lack of training (28%), cost, and workflow integration (21%), while enablers were lower cost (26%) and training (21%).

Conclusions: Orthodontic professionals showed moderate knowledge and awareness with neutral to negative attitudes towards robotic technologies. TRL was highest for aligner manufacturing and lowest for microrobotics. Addressing educational gaps, reducing costs, and generating evidence may facilitate successful integration into clinical practice.

Keywords: Attitude, Knowledge, Microrobotics, Orthodontics, Perception, Robotics

PG-VC-34-Leveraging Large Language Models In Orthodontic Treatment Queries: A Comparative Analysis Of Embedded Chatbots And ChatGPT-4

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Background & Objectives: This study evaluates the effectiveness of an embedded chatbot model in delivering orthodontic treatment-related information and compares its performance with the fourth generation of the Chat Generative Pre-trained Transformer (ChatGPT-4), focusing on accuracy, clarity, relevance, and up-to-date knowledge.

Methods: An embedded chatbot model, designed specifically for orthodontic treatment related queries, was integrated into a web-based platform. It was compared with ChatGPT-4 using standardized orthodontic questions. Responses from both models were evaluated by six postgraduate-qualified orthodontic specialists (≥ 5 years of

experience) using a 5-point Likert scale. Content validity was assessed using item-level (I-CVI) and scale-level (S-CVI) content validity indices. Statistical analysis was performed using the Wilcoxon Sign-Rank test. Normality was assessed using the Shapiro-Wilk test.

Results: The embedded chatbot demonstrated higher content validity and received better scores in accuracy and clarity compared to ChatGPT-4. A greater number of its responses achieved acceptable I-CVI (≥ 0.78) and S-CVI (≥ 0.8) values. Although the embedded model consistently outperformed ChatGPT-4, the differences were not statistically significant ($p = 0.173$).

Conclusions: The embedded chatbot model showed improved clarity and validity in orthodontic responses, suggesting potential advantages of domain-specific embedding and prompt engineering. While performance differences were not statistically significant, the findings support the growing role of tailored artificial intelligence (AI) tools in enhancing patient communication and clinical support in orthodontics.

Keywords: Artificial intelligence, ChatGPT, Content validity, Embedded Chatbot

PG-VC-35-Long-Term Outcomes and Quality of Life Following Mid-Urethral Sling Surgery: A 14-Year Retrospective Review

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Background & Objectives: Stress urinary incontinence affects 15–35% of women worldwide and significantly impair quality of life. Mid-urethral sling surgery has become the preferred surgical treatment because of its high cure rates and durable efficacy; however, concerns regarding mesh-related complications following regulatory warnings have raised questions about long-term safety, particularly in regions where extended follow-up data remain limited. This study aimed to evaluate the long-term safety and effectiveness of mid-urethral sling surgery in a South Asian population, focusing on postoperative complications, objective cure, overall success, and quality-of-life outcomes.

Methods: A retrospective review was conducted of 408 women who underwent sling procedures at Aga Khan University Hospital, Karachi, between 2009 and 2023. The primary outcome was safety assessed through mesh-related and other postoperative complications, while secondary outcomes included objective cure rates, overall surgical success, and quality-of-life improvement measured using validated questionnaires.

Results: Data were analyzed using SPSS version 19, and logistic regression was performed to identify predictors of treatment failure. Objective cure rates at 12 and 30 months were 94.85% and 94.36%, respectively, with overall success rates of 97.8% and 96.62%. Quality-of-life scores improved significantly at follow-up ($p < 0.05$). Mesh-related complications were infrequent and declined over time, decreasing from 3.9% at 1 month to 1.2% at 30 months. Increasing age and postmenopausal status were significant predictors of objective failure, while pelvic organ prolapse predicted poorer subjective cure.

Conclusion: These findings support the sustained safety and effectiveness of mid-urethral sling surgery and reinforce the importance of individualized patient counseling and long-term follow-up.

Keywords: Stress urinary incontinence, Tension-free vaginal tape, Trans obturator tape,

PG-VC-36-Massive Subcapsular Hepatic Hematoma Following ERCP: A Rare Complication

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Background & Objectives: Endoscopic retrograde cholangiopancreatography (ERCP) is widely used for the management of biliary and pancreatic disorders. Although generally safe, it is associated with complications such as pancreatitis, hemorrhage, perforation, and cholangitis. Subcapsular hepatic hematoma (HSH) is an exceptionally rare but potentially life-threatening complication, with fewer than 100 cases reported in the literature.

Methods: Case Presentation, we report a case of a 33-year-old male presenting with gallstone pancreatitis who underwent ERCP for stone extraction. Within 24 hours post-procedure, the patient developed fever, tachycardia, and abdominal discomfort. Laboratory findings showed a drop in hemoglobin. Esophagogastroduodenoscopy (OGD) revealed no acute abnormalities. Contrast-enhanced CT angiography demonstrated a large right-sided subcapsular hepatic

hematoma measuring approximately 22 × 7 cm with minimal hemoperitoneum and no active bleeding.

Results: The patient remained hemodynamically stable and was managed conservatively in the intensive care unit with intravenous fluids, antibiotics, analgesia, and close monitoring. Follow-up imaging showed a stable, non-expanding hematoma. The patient improved clinically and was discharged in stable condition with complete recovery.

Conclusion: Subcapsular hepatic hematoma is a rare but serious complication of ERCP that may present with nonspecific clinical features. Early recognition through imaging and careful monitoring is crucial. Conservative management is effective in stable patients, emphasizing the need for individualized treatment strategies.

Keywords: ERCP, Subcapsular hepatic hematoma, Gallstone pancreatitis, CT scan, Complication

PG-VC-37-Mortality and Predictors of Survival in Post Myocardial Infarction Ventricular Septal Rupture

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Background & Objective: Post-myocardial infarction (MI) ventricular septal rupture (VSR) remains an infrequent but highly lethal mechanical complication. In Pakistan, late presentations, referral delays, and variable access to definitive closure/repair often shift decision-making toward pragmatic stabilization, yet local outcome data to guide counseling and triage are limited.

To quantify 3-month mortality and identify clinically interpretable predictors of short-term survival among patients presenting with post-MI VSR to a tertiary cardiac center in Pakistan.

Methods: We conducted a comparative cohort study at the Peshawar Institute of Cardiology. All consecutive patients with echocardiography-confirmed post-MI VSR presenting between January 1, 2023, and December 31, 2024, were included. Patients were grouped by 3-month vital status (alive vs died). We chose an unadjusted (bivariable) analytic approach a priori because the cohort size and sparse procedural subgroups would not support stable multivariable modeling. Continuous variables are summarized as mean $\pm$ SD and median [IQR], and categorical variables as N (%). Effect sizes (mean differences, odds ratios) with 95% confidence intervals were prioritized over isolated P values.

Results: Among 51 patients, 22/51 (43.1%) died by 3 months (Wilson 95% CI, 30.5%–56.7). The mean age was 64.9 ± 9.2 years; 22/51 (43.1%) were female. Hypertension (34/51, 66.7%) and diabetes mellitus (27/51, 52.9%) were common. Survivors were older than non-survivors (mean difference, 5.25 years) and hypertension was more frequent among survivors (23/29 [79.3%] vs 11/22 [50.0%]). LVEF and VSR size showed no clear association with survival.

Conclusion: In this Pakistani tertiary cohort, post-MI VSR carried high 3-month mortality. Age and hypertension were the strongest unadjusted correlates of survival, while echocardiographic severity markers did not discriminate outcomes in this sample, supporting the need for larger multicenter datasets to validate locally useful risk signals.

Keywords: ventricular septal rupture; myocardial infarction; mortality; echocardiography.

PG-VC-38-Motor Symptoms Severity and Cognitive Impairment in Parkinson Disease: A Cross-Sectional Study

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Background & Objectives: The prevalence of Parkinson's disease (PD) has doubled and the major symptoms of PD include tremors, stiffness, postural instability, and bradykinesia. Non-motor symptoms involve pain, fatigue, reduced blood pressure, and various other issues. Additionally, the PD can have a major negative impact on a person's capacity to carry out everyday duties and engage in social interactions, and activities of daily living. The current study aims to find out motor symptoms severity and cognitive impairment in Parkinson's disease.

Methods: A cross-sectional survey was carried out in various hospitals such as Ziauddin Hospital, Rabia Moon Hospital, and Jinnah Postgraduate Medical Centre of Karachi, Pakistan. The sample size was calculated through Open Epi version 3.0. An evaluation tool for PD severity and progression is the Unified Parkinson's Disease Grading Scale (UPDRS) and cognitive impairments are assessed through Montreal cognitive assessment scale (MoCA). The data was analyzed using SPSS version 22.

Results: Results showed that 56.8 % were males 42.2 % were females. Most of the

participants had a highest duration of diseases. Findings revealed, out of 95 patients 65.3 % with a frequency of 62 experienced rigidity upper extremity. Out of 95 patients, 36 have severe cognitive impairment.

Conclusion: Most of the PD patients reported rigidity in the neck. Moreover, most of the PD reported severe cognitive impairment.

Keywords: Motor Dysfunction, Cognition, Parkinson's disease, Hoehn and Yahr stages, Rigidity, Bradykinesia, Tremors

PG-VC-39-Occupational Stress and Hypertension Risk Among Young Healthcare Professionals

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Background & Objectives: Hypertension is a major non-communicable disease contributing significantly to global cardiovascular morbidity and mortality. Increasingly, its burden is being observed among younger working populations. Occupational stress has emerged as a modifiable risk factor, particularly among healthcare professionals who are exposed to demanding work environments, long working hours, and shift duties. This study aims to determine the association between occupational stress and the risk of hypertension among young healthcare professionals in Pakistan.

Methods: A cross-sectional study will be conducted among healthcare professionals aged 22–35 years working in hospitals across Pakistan. Occupational stress will be assessed

using validated tools such as the Perceived Stress Scale (PSS-10) and Job Content Questionnaire (JCQ). Blood pressure will be measured by trained personnel according to WHO guidelines, and hypertension will be classified using standard clinical criteria. Descriptive statistics will be used to estimate the prevalence of stress and hypertension. Multivariable logistic regression analysis will be applied to determine the association between occupational stress and hypertension, adjusting for potential confounders including age, gender, body mass index, and smoking status.

Results: It is anticipated that a high prevalence of occupational stress will be observed among participants, with a significant positive association between elevated stress levels and increased risk of hypertension.

Conclusion: Occupational stress is expected to be an important risk factor for hypertension among young healthcare professionals. Early identification and implementation of stress-reduction interventions, along with routine cardiovascular risk screening, may help reduce the burden of hypertension in this population.

Keywords: Occupational stress, Hypertension, Healthcare professionals, Cross-sectional study, Non-communicable diseases

PG-VC-40-Outcomes Of Amphotericin B, Azoles, And Echinocandins In Candidemia: A Retrospective Study from a Quaternary Care Hospital in Pakistan

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Background & Objective: Candidemia is a life-threatening bloodstream infection with high morbidity and mortality, particularly among critically ill and immunocompromised patients. While azoles, echinocandins, and amphotericin B remain standard antifungal therapies, comparative real-world outcome data from quaternary care hospitals in low-resource regions like Pakistan are scarce.

This study aimed to evaluate the clinical outcomes of candidemia by antifungal class, focusing on microbiological clearance, 14 and 30-day all-cause mortality and readmission within 90-days.

Methods: We retrospectively analyzed 112 adults with blood culture-confirmed candidemia (Oct 2022–Dec 2024), stratified by initial antifungal therapy (azoles, echinocandins, amphotericin B). The primary outcome was microbiological clearance (≥ 1 negative follow-up culture); secondary outcomes were species distribution, 14- and 30-day mortality, and 90-day readmission. Outcomes were compared using χ^2 /Fisher's exact tests, and logistic regression identified predictors of clearance and mortality, adjusting for demographics, comorbidities, ICU admission, time to antifungal initiation, and species.

Results: A total of 112 patients were included, with a mean age of 61 ± 14 years, and 56% were male. The most frequent isolates were *C. albicans* (42%), followed by *C. tropicalis* (24%) and *C. glabrata* (18%). Initial antifungal therapy comprised echinocandins in 76%, amphotericin B in 14%, and azoles in 10%. Microbiological clearance was achieved in 53% of patients overall, with higher rates observed in the echinocandin group (47%) compared to amphotericin B (31%) and azoles

(22%) ($p = 0.03$; OR for echinocandin vs. azole: 2.7, 95% CI 1.1–6.9). The 14-day all-cause mortality was 28%, significantly lower in patients treated with echinocandins (22%) compared with amphotericin B (38%) and azoles (50%) ($p = 0.04$). The 30-day all-cause mortality was 42%, with the highest rates in infections due to *C. auris* (100%) and *C. krusei* (80%) ($p < 0.01$). Delayed initiation of antifungal therapy beyond 72 hours was independently associated with increased 30-day mortality (OR: 3.2; 95% CI: 1.5–6.9; $p = 0.002$). Furthermore, readmission within 90 days occurred in 21% of survivors, which was more frequent among patients initially treated with azoles (35%) compared to those receiving echinocandins (16%) ($p = 0.048$; OR: 2.8; 95% CI: 1.0–7.9).

Conclusion: In this quaternary-care cohort, echinocandins were the most prescribed agents and demonstrated superior clearance and survival compared with azoles and amphotericin B. Early antifungal initiation significantly improved outcomes. These findings highlight the need for stewardship interventions and context-specific treatment pathways in resource-limited settings.

PG-VC-41-Prevalence And Determinants Of Recreational Drugs Use Among Medical Students In Abbottabad

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Background & Objectives: Recreational drug use among medical students is an emerging public health concern with potential implications for healthcare delivery, professional competence, and patient safety.

Factors such as academic stress, peer pressure, and accessibility contribute to substance use in this population. This study aimed to assess the prevalence, patterns, awareness, and determinants of recreational drug use among medical students in Abbottabad.

Methods: A descriptive cross-sectional study was conducted in four medical colleges in Abbottabad from March to April 2018. A total of 1,000 students were approached, of whom 740 participated (response rate: 74%). Data were collected using a structured questionnaire assessing drug use patterns and associated factors. Data were analyzed using SPSS, and results were expressed as frequencies and percentages.

Results: The lifetime prevalence of recreational drug use was 56.9%, with 40% reporting non-prescription use. Common substances included tobacco (25.3%), opioids (19.2%), benzodiazepines (16.4%), sheesha/vaping (14.7%), and cannabis (8.4%). Drug use was higher among males, hostel residents, and students with higher allowances. Academic stress, curiosity, and peer pressure were identified as major contributing factors.

Conclusion: The high prevalence of recreational drug use among medical students highlights a significant public health concern. There is a need for targeted institutional policies, awareness programs, and counseling services to promote healthier coping strategies and reduce substance use.

Keywords: Recreational drug use, medical students, substance abuse, public health, Pakistan

PG-VC-42-Prevalence Of Non-Compliance Of Routine Blood Glucose Monitoring In

Uncontrolled Type 2 Diabetics Presenting At A Tertiary Care Hospital.

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Background & Objectives: An important part of managing type 2 diabetes mellitus (T2DM) is self-monitoring of blood glucose (SMBG). The current study aimed to evaluate the frequency of routine SMBG non-compliance in patients with uncontrolled type 2 diabetes.

Methods: This cross-sectional study was carried out from July to December 2024 at the Hayatabad Medical Complex's Department of Diabetes & Endocrinology in Peshawar. 294 individuals with uncontrolled type 2 diabetes were included in the study. Based on adherence to the SMBG, participants were divided into groups that were compliant and those that were not. Structured questionnaires and medical records were used to gather information on demographics, disease features, SMBG practices, and clinical outcomes (diabetes ketoacidosis, hypoglycemia, neuropathy, retinopathy, and nephropathy). SPSS version 26.0 was used for the statistical analysis.

Results: Of 294 participants, 171 (58.2%) were non-compliant with SMBG. Non-compliance was significantly associated with higher incidence of diabetic ketoacidosis ($p = 0.002$), severe hypoglycemia ($p = 0.004$), neuropathy ($p = 0.003$), retinopathy ($p = 0.001$), and nephropathy ($p < 0.001$). Lower education level and income were also significantly linked to non-compliance ($p < 0.001$).

Conclusion: Non-compliance with routine SMBG is prevalent among uncontrolled T2DM patients and is associated with significantly higher rates of acute and chronic

complications. Targeted educational and economic interventions are urgently needed.

Keywords: Diabetes Mellitus, Type 2; Self-Monitoring of Blood Glucose; Patient Compliance; Diabetic Ketoacidosis

PG-VC-43-Probiotics As An Adjunct Therapy For Prevention Of Antibiotic-Associated Diarrhea In Children: A Systematic Review

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Background & Objective: Antibiotic associated diarrhea (AAD) is one of the most common side effects experienced in children who take antibiotics, because of alteration in the composition of intestinal microflora. The purpose of this systematic review is to assess the effectiveness of probiotics as an additional treatment intervention to guard against AAD in children.

Methods: The literature databases referencing this topic were searched exhaustively with articles published between January 2000 and December 2023 filtering according to the set criteria.

Results: The systematic review incorporated 11 pieces of research featuring different probiotic species including *Lactobacillus*, *Bifidobacterium*, and *Saccharomyces boulardii* and observed that AAD incidence was lowered by up to 58%. These results suggest that, if more advanced studies are conducted with a focus on different strains, doses, and treatment durations, probiotics could have a beneficial effect in limiting AAD.

Conclusion: prophylactic use of probiotics appears to be reasonably safe and effective in decreasing the incidence, intensity, and duration of AAD in children, but more properly designed studies are needed to establish an ideal protocol for using probiotics as an adjunct therapy.

Keywords: probiotics, antibiotic-associated diarrhea, pediatric, gut microbiota, adjunct therapy, prevention

PG-VC-44-Prognostic And Diagnostic Utility Of Non-Invasive Myocardial Work In Heart Failure: A Systemic Review Across Clinical Phenotypes

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Background & Objectives: Myocardial work derived from noninvasive pressure strain loop analysis has emerged as a promising echocardiographic tool for assessing left ventricular systolic performance.

Methods: This systematic review evaluated the diagnostic, functional, and prognostic utility of myocardial work across heart failure phenotypes, including heart failure with preserved ejection fraction, mildly reduced ejection fraction, reduced ejection fraction, improved ejection fraction, and dilated cardiomyopathy, as well as in patients undergoing cardiac resynchronization therapy. Five studies met the inclusion criteria, encompassing randomized controlled trials, prospective observational cohorts, and retrospective analyses.

Results: Across all phenotypes, myocardial work consistently revealed mechanical and energetic abnormalities that were not detected by ejection fraction or global longitudinal strain. Global work index and constructive work proved particularly valuable for identifying impaired contractile reserve, detecting persistent systolic dysfunction despite normalized ejection fraction, tracking therapeutic response, and predicting response to resynchronization therapy. Myocardial work also demonstrated superior load adjusted assessment compared with global longitudinal strain, providing a more physiologically grounded evaluation of myocardial efficiency. Although current evidence is limited by modest sample sizes, heterogeneous protocols, and the predominance of single center studies, the collective findings support myocardial work as a robust adjunct to conventional echocardiography. It offers clinically meaningful insights that may enhance diagnostic accuracy, guide therapy, and improve risk stratification in heart failure.

Conclusion: Larger multicenter studies and standardized acquisition protocols are needed to establish broader applicability and inform future clinical integration.

Keywords: Myocardial work; pressure strain loop; global work index; echocardiography; contractile reserve; cardiac resynchronization therapy

PG-VC-45-Saline Technique For Treatment Of No-Reflow During PCI In STEMI Khan MI¹, Khan SS^{1*}

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Background: Primary percutaneous coronary intervention (pPCI) performed for STEMI may be complicated by the “no-reflow” phenomenon. Effective, simple, and readily available treatment strategies for no-reflow remain limited. A super-selective intracoronary injection of saline solution through export or guide catheter or (SALINE technique), was investigated for the treatment of no-reflow as compared with the standard care of therapy (SCT).

Methods: Between March and September 2025, 430 STEMI patients underwent pPCI at our center, of whom 49 developed angiographically confirmed no-reflow. Patients were treated either with the SALINE technique or SCT at the operator’s discretion. After propensity score matching, 16 patients in each group were included in the final analysis. The primary endpoints were: ST-segment resolution (STR) $\geq 70\%$ at 90 minutes following PCI, and Restoration of epicardial and myocardial perfusion, defined as final TIMI flow grade 3 with myocardial blush grade (MBG) > 1 . Secondary endpoints included in-hospital outcomes; all-cause mortality, cardiogenic shock, stroke, major bleeding and repeat intervention.

Results: STR $\geq 70\%$ was achieved in 12 of 16 patients (75.0%) treated with the SALINE technique compared with 3 of 16 patients (19.0%) in the SCT group ($p < 0.004$). Final TIMI flow grade 3 with MBG > 1 occurred in 14 patients (87.5%) in the SALINE group versus 7 patients (43.8%) in the SCT group ($p < 0.03$).

Conclusions: In STEMI patients complicated by no-reflow during pPCI, the SALINE technique appears to be a safe and effective strategy for improving acute myocardial

reperfusion, as demonstrated by superior ST-segment resolution and angiographic outcomes. These findings support the role of the SALINE technique as a practical and low-cost adjunctive therapy.

Keywords: STEMI; no-reflow; PCI; SALINE technique

PG-VC-46-Severity Spectrum Of Left Ventricular Dysfunction In Hypertrophic Versus Ischemic Cardiomyopathy

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Background & Objective: Cardiomyopathies, including hypertrophic cardiomyopathy (HCM), ischemic cardiomyopathy (ICM), and combined HCM+ICM, present with varying patterns of left ventricular (LV) dysfunction. Echocardiographic parameters such as ejection fraction (EF) and fractional shortening (FS) are essential for assessing cardiac function. This study aimed to compare LV function among patients with HCM, ICM, and combined HCM+ICM using EF and FS, and to evaluate patterns of systolic and diastolic dysfunction.

Methods: This cross-sectional observational study included 378 adult patients (159 HCM, 183 ICM, 36 combined HCM+ICM) undergoing comprehensive echocardiography at a tertiary care hospital in Peshawar. LV function was categorized as preserved, mildly impaired, moderately impaired, or severely impaired based on EF and FS measurements. Gender-based differences and patterns of systolic and diastolic dysfunction were also analyzed.

Results: Preserved LV function (EF >60%) was most common in HCM (78, 20.6%) compared to ICM (23, 6.1%) and combined HCM+ICM (5, 12.8%). Moderate and severe dysfunction were more prevalent in ICM (moderate 16.1%, severe 8.5%) and combined HCM+ICM (moderate 27.8%, severe 44.6%), whereas HCM rarely exhibited severe impairment (0.8%). FS-based findings were consistent with EF results. Gender-based analysis showed severe LV dysfunction was uncommon in HCM for both sexes, while ICM males had higher rates of severe dysfunction (22.5%) compared to females (15.1%). Systolic dysfunction predominated in ICM (64.8%), whereas diastolic dysfunction was more frequent in HCM (39.4%) and combined HCM+ICM (44.6%).

Conclusion: Patients with HCM generally maintain better LV function, while those with ICM and combined HCM+ICM exhibit more pronounced systolic and global impairment. Echocardiographic assessment using EF and FS is valuable for evaluating LV dysfunction, aiding in risk stratification, and guiding clinical management across different cardiomyopathy phenotypes.

Keywords: Hypertrophic cardiomyopathy, Ischemic cardiomyopathy, Left ventricular dysfunction, Ejection fraction, Fractional shortening, Echocardiography

PG-VC-47-Social Media Addiction And Academic Procrastination Among Nursing Students : The Moderating Roles Of Gender And Residence

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Background & Objectives: Previous studies have suggested that there is a significant association between social media addiction and academic procrastination in diverse student populations. Despite going through rigorous clinical training and completing other academic tasks, along with working in emotionally challenging environments, this phenomenon is less examined in nursing students. This study examined the relationship involving social media addiction and academic procrastination among nursing students, along with the moderating roles of gender and Hostel versus non-hostel residence.

Method: In December 2025, in Islamabad, a cross-sectional survey was conducted using a convenience sampling technique with 247 nursing students. The Bergen Social Media Addiction Scale and an adapted short form of the procrastination scale were administered to measure social media addiction and academic-related procrastination. For analysis, which included descriptive statistics, Pearson correlation and moderation analysis, IBM SPSS 29 was used.

Results: Social media addiction was positively associated with academic procrastination ($r \approx .61$, $p < .001$). Gender significantly moderated this relationship ($\Delta R^2 = .013$, $p = .022$), with a slightly stronger association among male students. Hostel versus non-hostel residence did not significantly moderate the relationship ($\Delta R^2 < .001$, $p > .05$).

Conclusion: This study builds on the existing literature by extending the association between social media addiction and academic

procrastination to a nursing population. The role of gender and residence in influencing this relationship was also explored. The findings may support strategies aimed at managing students' social media engagement patterns and improving academic functioning in nursing education.

Keywords: social media addiction, academic procrastination, nursing students, gender moderation, Hostel vs. non-hostel residence, Pakistan

PG-VC-48-The Injectable Barrier: Psychological and Social Barriers to Insulin And GLP-1 Therapy In Type 2 Diabetes

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Background & Objectives: Inadequate glycaemic management in patients with type 2 diabetes is a serious public health concern. Even in this era of oral antidiabetics early initiation of insulin and newer GLP-1 receptor agonist therapy have been shown to significantly improve glycaemic control among diabetic patients. This study aimed to identify common barriers regarding insulin and GLP-1 receptor agonist initiation among diabetic patients presenting to a tertiary-care hospital medicine OPD.

Methods: This was a cross-sectional study conducted in the outpatient department of a tertiary-care hospital from February 2025 to July 2025. A total of 200 diabetic patients, aged 30 to 60 years, with poor glycaemic control and an HbA1c level greater than 9% were included. Data were collected, entered into and analysed using SPSS software.

Results: Out of 200 patients, 120 (60%) were female and 80 (40%) were male. Notably, 160 patients (100 females and 60 males) expressed unwillingness to start insulin therapy. Among these patients, 50% reported a fear of insulin injections, 25% were afraid of hypoglycemia—particularly at night, 10% had concerns about lifelong dependence on injections once initiated, and the remaining 15% reported issues related to GLP-1 agonists cost, insulin storage, social concerns and the difficulty of carrying insulin during travel.

Conclusion: Psychological barriers and misconceptions regarding insulin and injectable GLP-1 receptor agonist therapy are present in a significant proportion of diabetic patients. Addressing these concerns should be prioritized to enhance glycemic control among this population.

Keywords: Insulin therapy, Psychological barriers

PG-VC-49- Correlation Between Urodynamic Parameters and Quality of Life in Neurogenic Bladder

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Background & Objectives: To evaluate the correlation between urodynamic parameters and quality of life in patients with neurogenic bladder using the Qualiveen-30 questionnaire.

Methods: This prospective observational study was conducted at the Department of Urology, Lady Reading Hospital, Peshawar, from January 2024 to June 2025. A total of 217 patients aged ≥ 18 years with neurogenic

bladder due to spinal cord injury, multiple sclerosis, diabetic neuropathy, Parkinson's disease, or stroke were enrolled. Multichannel urodynamic studies were performed to assess detrusor overactivity, bladder compliance, leak point pressure, bladder capacity, and post-void residual volume. Quality of life was measured using the Qualiveen-30 questionnaire. Pearson's and Spearman's correlation tests were applied along with multivariate regression analysis to determine predictors of poor quality of life.

Results: Detrusor overactivity was observed in 63.6% of patients and reduced bladder compliance in 48.4%. Mean Qualiveen-30 score was 52.8 ± 14.2 indicating moderate to severe impact. A strong negative correlation was found between bladder compliance and total QoL score ($r = -0.54$, $p < 0.01$). Detrusor leak point pressure showed a positive correlation with limitation scores ($r = 0.43$, $p < 0.05$). Multivariate analysis identified reduced compliance ($\beta = -0.32$, $p < 0.01$) and detrusor overactivity ($\beta = 0.27$, $p < 0.01$) as independent predictors of poor quality of life.

Conclusion: Urodynamic findings, particularly poor bladder compliance and detrusor overactivity, are strongly associated with diminished quality of life in neurogenic bladder patients. A multidisciplinary, patient-centered approach addressing both physiological and psychosocial domains is essential for optimal management.

Keywords: Neurogenic bladder, Urodynamics, Quality of life, Bladder compliance, Detrusor overactivity, Qualiveen questionnaire

PG-VC-50-Trait Emotional Intelligence and Its Association with Academic Resilience in Undergraduate Nursing Students

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Background & Objectives: Medical studies often lead to academic stress due to high workloads and personal changes. This can result in students becoming passive or withdrawing from their studies, affecting their performance. Academic resilience and trait emotional intelligence are essential assets that can help students cope with these challenges, promoting constructive psychology and autonomous learning capabilities.

Objectives: To assess the trait emotional intelligence, and academic resilience and determine the association between trait emotional intelligence (TEI) and academic resilience (AR) in undergraduate nursing students.

Methods: An analytical cross-sectional study design was used to gather data from four nursing colleges in Peshawar. Using a convenient sampling technique, 248 undergraduate nursing students were included in the study. The inclusion criteria were 1st and 2nd year nursing students. The Trait Emotional Intelligence Questionnaire (TEIQue) and the Academic Resilience Scale (ARS) with Cronbach alpha values of 0.89 and 0.90 respectively, were used to measure trait emotional intelligence and academic resilience. The data was analyzed using the Statistical Package for Social Science (SPSS) 25 after collection.

Results: The study revealed that 64.11% of the participants have average trait emotional intelligence and 67.34% have high academic resilience. A chi-square test found a significant association between academic resilience and

trait emotional intelligence, and between demographic variables with both traits. The participant's gender, institute, and year of study were significantly associated with academic resilience, while the gender and institute of participants were significantly associated with trait emotional intelligence.

Conclusion: Students need trait emotional intelligence and academic resilience during college transition to excel. A strong relationship between TEI and AR is crucial for mental health and academic performance. The study found a significant association between TEI and AR, improving students' psychological and emotional health. The study suggests future research on trait emotional intelligence and academic resilience among nursing students in Khyber Pakhtunkhwa and recommends individual studies and institute policies for student improvement.

Keywords: Trait Emotional Intelligence, Academic Resilience, Undergraduate Nursing Students.

PG-VC-51-Retrospective Analysis Of Clinical Presentation, Radiological Findings, And Outcomes In Foreign Body Aspiration Managed By Rigid Bronchoscopy at a Tertiary Care Hospital

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Background & Objectives: Foreign body aspiration (FBA) remains a critical paediatric emergency and a significant cause of accidental mortality in children under 4 years of age. While particularly prevalent in toddlers due to their exploratory behaviours and immature

airway protection reflexes, FBA also affects adults with predisposing conditions. Despite advances in bronchoscopic techniques, delayed diagnosis continues to contribute to serious complications including pneumonia, bronchiectasis, and fatal airway obstruction. This study aimed to analyse the demographic trends, clinical presentation, radiological findings, and therapeutic outcomes of foreign body aspiration (FBA) managed via rigid bronchoscopy in a patient cohort at Tertiary Care Hospital.

Methods: A retrospective study was conducted on 464 consecutive FBA cases at Khyber Teaching Hospital, Peshawar (January 2022–June 2025). Data included demographics, clinical features, radiological/bronchoscopic findings, complications, and foreign body types. Statistical analyses comprised descriptive statistics, chi-square/Fisher's exact tests, and t-tests.

Results: The cohort showed male predominance (59.91%) and peak incidence in children aged 1–3 years (50.00%). Cough was universal (100%), and wheeze (90.94%) and breathlessness (83.18%) were highly prevalent. A definitive radiological dichotomy was observed: all inorganic foreign bodies were radiopaque (31.5% of cohort), while all organic foreign bodies (68.5%, e.g., peanuts) were radiolucent, presenting with normal X-rays (49.1%) or indirect signs. Organic FBs predominated in males (OR=3.0, 95% CI[2.1–4.3], $p<0.001$). Rigid bronchoscopy was highly effective, with complications occurring in 9.8% of cases, most commonly hypoxia/bradycardia (15.2%). Younger children (2.8 ± 1.5 years) presented more frequently with breathlessness ($p<0.001$, Cohen's $d=0.6$).

Conclusion: FBA primarily affects young children, with males at higher risk for organic FBs. The clear radiological divide underscores that a normal chest X-ray cannot exclude organic FBA, emphasizing the need for bronchoscopy when clinical suspicion exists. Rigid bronchoscopy remains effective, though complications warrant vigilance. Public health measures targeting high-risk groups are recommended.

Key words: Airway obstruction, Aspiration complications, Bronchoscopic retrieval, Foreign body aspiration, Organic foreign bodies, Paediatric airway emergency, Rigid bronchoscopy

PG-VC-52-Understanding Breast Cancer: Knowledge, Attitudes, Practices, And Barriers Among Female Doctors In A Tertiary Care Hospital

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Background & Objectives: This study assessed breast cancer knowledge, attitudes, and screening practices among female doctors at a tertiary hospital in Peshawar, examined associations between knowledge and screening behavior, and identified perceived barriers to screening.

Methods: A cross-sectional survey was conducted among 188 female doctors at Khyber Teaching Hospital, Peshawar, Pakistan, in October 2025. Data were collected using a structured, self-administered questionnaire.

Results: The instrument assessed knowledge across three domains (risk factors, signs and symptoms, and screening methods), comprising 27 items, attitudes toward breast cancer screening, current screening practices, and perceived barriers to screening. Statistical analyses included Spearman's correlation to examine relationships between knowledge, attitudes, and practices; Chi-square tests to assess associations between categorical variables; and Mann-Whitney U tests to compare knowledge scores across demographic groups. Participants had a mean age of 27.47 ± 1.53 years. Knowledge varied substantially across domains: 94.1% demonstrated good understanding of signs and symptoms, compared to 9.6% for risk factors and 2.1% for screening methods. Attitudes were overwhelmingly positive (mean score 29.01 ± 1.72 out of 30). Despite favorable attitudes, screening practices were suboptimal: 63.8% practiced breast self-examination (BSE), though only 36.7% performed it monthly; 26.6% had undergone clinical breast examination; and 2.7% reported mammography. Knowledge scores did not differ significantly between BSE practitioners and non-practitioners ($p = 0.409$). The most

frequently reported barriers were busy schedules (71.3%), perceived low risk (41.5%), and absence of institutional screening programs (32.4%).

Conclusion: Female doctors demonstrated strong symptom recognition and positive attitudes but had limited knowledge of screening guidelines and suboptimal screening practices.

Keywords: Breast Cancer, screening behavior,

PG-VC-53-Frequency Of Urinary Tract Infection In Patients Undergoing TURP And Characterization Of Causative Agents

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Background & Objectives: Urinary tract infection (UTI) is a common postoperative complication following transurethral resection of the prostate (TURP) and contributes to increased morbidity and prolonged hospital stay. This study aimed to determine the frequency of UTI and identify the causative organisms in patients undergoing TURP.

Methods: A cross-sectional study was conducted in the Department of Urology, Institute of Kidney Disease, Hayatabad, Peshawar, over a six-month period from January to June 2024. A total of 103 patients aged 45–70 years undergoing TURP with preoperative negative urine cultures were included. Patients with diabetes, urinary tract anomalies, fever, or dysuria at presentation were excluded. All patients underwent standard

TURP and were followed up at 24 hours, postoperative day 3, and day 7. Diagnosis of UTI was based on clinical features and positive urine microscopy and culture findings. Data were analyzed using SPSS version 23. The mean age of patients was 60.3 ± 6.7 years.

Results: Postoperative UTI was observed in 19 patients (18%). *Escherichia coli* was the most common causative organism, identified in 13 patients (69%), followed by *Enterococcus* in 3 patients (16%), *Klebsiella* in 2 patients (12%), and *Proteus* in 1 patient (3%). Stratification showed a significant association between UTI and increased body mass index, while no statistically significant association was found with age or prostate volume. The study concludes that UTIs remain a frequent complication following TURP, with *Escherichia coli* being the predominant pathogen. Early identification and targeted antibiotic therapy based on culture sensitivity is essential to reduce postoperative morbidity and improve patient outcomes.

Keywords: Urinary tract infection, Transurethral resection of prostate, Uropathogens, Postoperative complications, Benign prostatic hyperplasia

PG-VC-54-Impact Of CYP2C19*2 On Clopidogrel Response And Cardiovascular Outcomes In STEMI Patients

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Background and Objective: Scapular dyskinesia (SD), particularly Type II, is a frequently overlooked shoulder dysfunction characterized by medial scapular border prominence, often associated with serratus anterior weakness. This condition can compromise scapular mechanics even in asymptomatic young adults. The Integrated Neuromuscular Inhibition Technique (INIT), has shown promise in addressing scapular imbalances.

This study aims to compare the effectiveness of Integrated Neuromuscular Inhibition Technique (INIT) versus conventional therapeutic exercises in improving muscular strength, scapular alignment, and shoulder joint range of motion in young adults with asymptomatic type II scapular dyskinesia.

Methods: A single-blinded randomized controlled trial was conducted at Ziauddin College of Physical Therapy, Karachi, involving 82 participants aged 20–40 years. Subjects were randomly assigned to two groups (n=41 each): Group A received INIT, and Group B underwent conventional therapeutic exercises over six weeks. Outcome measures included scapular deviation by PALM meter, shoulder ROM by goniometer, and muscle strength by handheld dynamometer, assessed at baseline, 4 weeks, and 6 weeks. The data was skewed so that Mann-Whitney U for between-group analysis, Friedman ANOVA for within-group analysis, and for post hoc analysis, Wilcoxon Signed-Rank were used.

Results: Both groups, INIT and conventional therapy, were evenly matched at baseline, with similar mean ages (22.7 ± 2.29 vs. 23.26 ± 2.53

years). The INIT group demonstrated significantly greater improvements than conventional exercise across all measured outcomes. At six weeks, participants demonstrated superior shoulder range of motion (flexion, abduction, internal and external rotation; $p < 0.05$), enhanced muscle strength (upper and lower trapezius, serratus anterior, and rhomboids; $p < 0.05$), and a marked correction in scapular deviation ($p = 0.000$). Progressive within-group improvements further affirmed INIT's effectiveness in enhancing mobility, strength, and postural symmetry.

Conclusion: INIT significantly enhanced shoulder mobility, muscle strength, and scapular alignment in individuals with Type II SD. The findings support its integration into early physiotherapy protocols for effective musculoskeletal rehabilitation.

Keywords: Scapular dyskinesia, Integrated Neuromuscular Inhibition Technique, Conventional therapy, Muscle strength, Scapular Deviation, Range of motion.

PG-VC-55- Harnessing Artificial Intelligence For Enhancing Routine Immunization Among Zero-Dose Children

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Background and Objective: Zero-dose children, those who have not received any routine childhood vaccines, remain a major

global health challenge, particularly in low- and middle-income countries (LMICs), where vulnerable populations face persistent barriers to immunization access. Despite sustained global efforts to reduce the burden of zero-dose children, progress remains uneven due to weak health systems, data gaps, geographic inaccessibility, and vaccine hesitancy. This review explores the transformative potential of artificial intelligence (AI) in strengthening routine immunization systems and addressing the needs of zero-dose children, with a particular focus on LMIC settings. The review synthesizes existing evidence on the application of AI-driven tools and approaches to enhance immunization planning, delivery, and monitoring. AI-based solutions enable efficient identification of under-immunized and zero-dose populations through predictive analytics, geospatial mapping, and data integration from multiple sources. These technologies support data-driven decision-making, optimize resource allocation, and facilitate targeted outreach strategies. Additionally, AI-enabled digital health passports, real-time vaccination monitoring systems, and geographical information systems (GIS) have demonstrated potential in improving vaccine tracking, coverage assessment, and service delivery efficiency. AI-based communication tools may also contribute to reducing vaccine skepticism by supporting tailored, timely, and context-specific messaging. However, the review also highlights key challenges associated with AI implementation in LMICs, including data quality limitations, infrastructure constraints, ethical concerns, and issues related to equity, privacy, and governance.

In conclusion, strategic and ethically guided integration of AI into immunization programs offers a promising pathway to strengthen routine vaccination systems and accelerate

progress toward reducing the number of zero-dose children by 50% by 2030, contributing to more equitable and resilient immunization outcomes globally.

Keywords: Artificial intelligence; zero-dose children; routine immunization; digital health; geospatial targeting; real-time vaccination monitoring

PG-VC-56- Assessing Neurological Outcomes in Spine Fracture Patients After Transpedicular Fixation And Decompression

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Background and Objective: Traumatic spinal cord injury (SCI) often occurs in patients with associated traumatic injuries in other body systems¹. The peak age of incidence occur in young adult men and elderly women². Acute spinal cord injury (SCI) causing many problems not only affecting neurologic disability but also causes hemodynamic instability and respiratory failure³.

Objective: To assess and compare neurological outcomes (based on changes in ASIA scores) across different types of spinal fractures (cervical, thoracic, lumbar).

Methods: Adult patients with thoracic or lumbar spine fractures presenting with neurological deficits and fulfilling the inclusion criteria were enrolled after obtaining informed consent. Preoperative evaluation included detailed clinical examination, neurological assessment using the American Spinal Injury Association (ASIA) Impairment Scale, and radiological assessment with X-ray, CT, and MRI. All patients underwent posterior

transpedicular screw fixation with decompression performed according to fracture morphology and neural compression. Neurological status was assessed preoperatively, postoperatively, and during follow-up at 2 weeks using ASIA grading and motor and sensory scores.

Results: Spine fracture more common in adult male with HOF most common cause. A total of about 58% of patient have some neurological improvement. 26% improved from ASIA grade D to E, 32% from C to D, 30% from B to C, 17% from C to E. Those patient with lumbar fracture have more improvement in neurology than those with cervical or thoracic spine fracture.

Conclusion: Posterior transpedicular fixation with decompression resulted in significant neurological improvement in patients with traumatic spinal fractures, as evidenced by improvement in ASIA grades and motor and sensory scores on follow-up.

Keywords: Spine fracture, Neurological improvement, Transpedicular fixation, Decompression

PG-VC-57-CAR-T Cell Therapy In Malignancies And Viral Infections: Therapeutic Potential And Challenges

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Chimeric Antigen Receptor (CAR) T-cell therapy represents a transformative immunotherapeutic strategy for the treatment of malignancies, particularly B-cell cancers, acute myeloid leukemia (AML), and multiple myeloma. Beyond oncology, CAR-T cells are being explored as investigational tools for the treatment of chronic viral infections, including human immunodeficiency virus (HIV), hepatitis B and C viruses (HBV and HCV), and cytomegalovirus (CMV). This review summarizes current strategies aimed at enhancing antitumor efficacy while minimizing toxicity, with a focus on target antigen selection, clinical outcomes, and translational challenges. A major limitation in CAR-T cell development is the lack of tumor-specific antigens, as many malignant cells share surface markers with healthy hematopoietic stem and progenitor cells (HSPCs). This overlap increases the risk of severe on-target/off-tumor toxicities, including prolonged myeloablation. Additionally, patients receiving CAR-T therapy often experience profound immunosuppression and cytopenia, predisposing them to infections and treatment-related complications. Despite encouraging clinical responses in selected hematological malignancies, CAR-T cell therapy is frequently associated with significant adverse effects such as cytokine release syndrome (CRS) and neurotoxicity. Although CAR-T therapy has demonstrated remarkable success in certain leukemias and lymphomas, its broader clinical application-particularly in solid tumors and infectious diseases-remains limited by challenges related to safety, persistence, trafficking, durability, and large-scale production. Addressing these barriers is essential for the successful integration of CAR-T cell therapy into routine clinical practice.

Keywords: CAR-T cell therapy, Hematological malignancies, Target antigen selection, Myeloablation, Immunotoxicity

PG-VC-58-Harnessing Fermented Feeds and Postbiotics For Sustainable Animal Health

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The growing global demand for safe and highly nutritious food products from animals has intensified the need for sustainable and antibiotic-free feeding strategies. Despite effectiveness of various conventional feed additives, they raise major concerns regarding antimicrobial resistance and environmental safety. Hence, some alternative nutritional approaches are required to improve the livestock productivity while ensuring One Health sustainability. This study aims to highlight the potential of fermented feeds and postbiotics as eco-friendly alternatives to antibiotics for improving animal health through gut microbiome modulation. Literature review demonstrates that fermentation enhances feed digestibility and nutrient bioavailability while producing bioactive metabolites such as organic acids, enzymes, peptides, and bacterial components. These postbiotic compounds plays crucial role in animal health by strengthening the gut barrier, regulate immune responses, and inhibit pathogenic microorganisms. Postbiotic supplements or fermented feeds improve intestinal integrity,

reduces inflammation, and decreases dependence on antibiotic growth promoters. Additionally, improved nutrient utilization contributes to a lower environmental damage and supports sustainable livestock production. Harnessing fermented feeds and postbiotics represents a promising nutritional innovation that enhances animal health, and environmental safety. These alternative feed strategies align with the One Health approach by linking animal welfare, human food safety, and ecosystem sustainability. Future focus on species-specific formulations and the molecular mechanisms underlying responses of postbiotics in gut would greatly influence the efficacy of postbiotics. Revolutionizing the synergistic effects of postbiotics with prebiotics, phytogenics, enzymes, minerals, or organic acids will maximize animal performance and health.

Keywords: Animal Health, Food, Metabolites, Postbiotics

PG-VC-59-Paediatric Mental Health In Pakistan

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Background & Objectives: Child and adolescent mental health is an urgent yet under-recognized public health concern in Pakistan. Despite a large youth population, there is a critical shortage of trained paediatric psychiatrists, resulting in a significant treatment gap. It is estimated that 15–20% of children in Pakistan suffer from mental health conditions, many of which remain undiagnosed

and untreated, leading to long-term psychological and functional impairment. This paper aims to highlight the current challenges and emphasize the need for improved mental health services for children in Pakistan.

Methods: A narrative overview was conducted focusing on existing literature, clinical observations, and public health perspectives related to paediatric mental health in Pakistan. Key themes including workforce limitations, sociocultural barriers, and service gaps were analyzed.

Results: Major challenges identified include a severe shortage of specialized professionals, limited awareness, stigma, adverse childhood experiences, and gender disparities. These factors contribute to delayed diagnosis and inadequate access to care. Existing healthcare systems lack integration of mental health services, further exacerbating the burden.

Conclusion: Addressing paediatric mental health in Pakistan requires urgent, coordinated efforts involving healthcare providers, policymakers, educators, and community leaders. Strengthening healthcare infrastructure, increasing awareness, integrating mental health into primary care, and implementing robust policies are essential steps. Prioritizing children's mental health alongside physical health is critical to improving long-term outcomes and ensuring a healthier future for the younger population.

Keywords: Pediatric psychiatry, Mental health, Children, Pakistan, Public health

PG-VC-60-Assessment Of Psychological Distress In Heart Failure Patients – A Cross-Sectional Study

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Background & Objectives: Heart failure (HF) is associated with substantial physical and psychological impairment which is why mental health screening rates in Pakistan are ignored. The present study was conducted to determine anxiety and depression rates in HF patients in Peshawar and to evaluate the existence of social-demographic factors.

Methods: The analytical cross-sectional study lasted six months, and three tertiary care hospitals, that is, Hayatabad Medical Complex, Lady Reading Hospital, and Rehman Medical Institute, were used. Convenience sampling was used to recruit 379 patients with HF age 18 years and above, and the diagnosis had been known for a minimum period of six months. Hospital Anxiety and Depression Scale (HADS) in Urdu language was administered. The analysis of the data was performed in SPSS v27 based on the t-tests and ANOVA; the value of $p < 0.05$ was used as a significant one.

Results: The anxiety mean score was 11.57 3.43 and depression mean score was 11.37 3.52 which is moderate. Patients of public hospitals ($p = 0.037$) and non-Muslims ($p = 0.012$) were recorded to have a greater anxiety and depression level. Younger adults (18 to 40 years), females, and non-educated persons also are likely to have higher distress albeit without statistical significance. The most reported were restlessness and loss of cheerfulness. Reliability of the tool was checked by Cronbach's alpha, which was 0.82–0.84 for the

anxiety subscale and 0.947–0.948 for the depression subscale.

Conclusion: Psychological distress is quite common among patients who have HF in Peshawar with significant associations of religion and type of hospital. Screening and culturally competent psychosocial interventions should be incorporated into routine care of the heart to advance quality of life and clinical results.

Keywords: Anxiety, depression, psychological distress, heart failure, Peshawar

PG-VC-61-Impact Of Interpregnancy Interval On Maternal And Perinatal Outcomes In A Tertiary Care Hospital

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Background & Objectives: A short inter-pregnancy interval is the time interval of less than or equal to eighteen months between the previous baby's delivery and the next conception. The objective was to assess the influence of SIPI on maternal and perinatal outcomes.

Methods: This study, which included 150 pregnant women, was carried out as a prospective comparative study between December 2023 and May 2024. Two groups of expectant mothers who met the inclusion and exclusion criteria for the research were taken into consideration. These two groups of women's pregnancy outcomes as well as fetal and maternal problems were examined. 75 pregnant women who were SIPI (with an IPI of ≤ 6 months following a miscarriage and ≤ 18 months following a delivery) were included.

Results: The research participants' average age was found to be 29 ± 2.6 years old. Anaemia was present in a higher percentage of women with

short IPI (60% versus 40%, $p = 0.018$), gestational hypertension (p value = 0.002, 22.5% versus 77.5%), Gestational diabetes (p value = 1.2). Obstetric cholestasis (71% versus 29%, p value = 0.005). Caesarean section rates were higher in women with shorter interpregnancy (67% versus 33%, p value = 0.018), low birth weights (95% versus 5%, p value = 0.016).

Conclusion: Significant morbidity and unfavorable perinatal outcomes are experienced by pregnant women who have a brief interpregnancy interval of 18 months or less.

Keywords: Short Interpregnancy Interval, Caesarean section, Vaginal Birth After Caesarean, Perinatal Mortality, Gestational Hypertension, Gestational Diabetes, Anaemia.

PG-VC-62-Leveling Up Immunization: A Systematic Review Of Gamification Interventions To Improve HPV Vaccine Uptake

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Human papillomavirus (HPV) vaccination is a highly effective strategy for preventing cervical and other HPV-related cancers; however, vaccination coverage among adolescents and young adults remains suboptimal due to knowledge gaps, vaccine hesitancy, and behavioral barriers. Gamification, defined as the integration of game-design elements into non-game contexts, has emerged as an innovative approach to enhance engagement and promote positive

health behaviors. This systematic review aimed to evaluate the effectiveness of gamification interventions in improving HPV-related knowledge, attitudes, behaviors, and vaccine uptake or intention among adolescents and young adults aged 11–26 years. The review was conducted in accordance with PRISMA guidelines and the PI(E)COS framework, with the protocol registered in PROSPERO (CRD42024557308). A comprehensive search of PubMed, Scopus, Cochrane Central, PsycINFO, and manual sources identified 201 records; nine studies met the inclusion criteria. Included studies employed diverse designs, including randomized controlled trials, qualitative studies, and mixed-methods approaches across multiple geographic regions. Most interventions utilized digital platforms incorporating interactive features such as avatars, quizzes, rewards, and narrative storytelling. Findings indicate that gamification interventions significantly improved HPV-related knowledge in most studies and positively influenced attitudes and vaccination intentions in several settings. Some studies also demonstrated increased vaccine initiation and completion rates, although results were not universally consistent. Overall, gamification shows promising potential as a strategy to enhance HPV vaccination awareness and behavioral intention among youth. However, further large-scale, methodologically rigorous studies are required to strengthen the evidence base and assess long-term impacts on actual vaccine uptake.

Keywords: HPV vaccination, gamification, adolescents, vaccine uptake, digital health

PG-VC-63-Effects of Aerobic Exercise on Liver Enzymes and Glycemic Control In Adults With NAFLD: A Systematic Review & Meta-Analysis

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Background & Objectives: Lifestyle modifications remain the cornerstone management in non-alcoholic fatty liver disease (NAFLD). However, current literature proposed aerobic exercise as an effective intervention; though, there remain a discrepancy regarding its effects on hepatic enzymes and glycemic control. The aim of this study was to evaluate the effects of aerobic exercise on liver enzymes, glycemic control, and body mass index in adults with NAFLD.

Methods: A systematic review and meta-analysis was conducted according to PRISMA guidelines. PubMed, MEDLINE, Cochrane, CINAHL, and Scopus were searched from 2015 - 2025. Eligible studies included adults with NAFLD enrolled in aerobic exercise compared with control group. Outcome measures analyzed were alanine aminotransferase and aspartate aminotransferase, HbA1c, fasting blood glucose (FBG) level, and BMI. Effect sizes were pooled using standardized mean differences (SMD) with 95% confidence intervals (CI).

Results: 12 RCTs involving 450 participants were included. Aerobic exercise was associated with statistically significant fall in AST level (SMD -0.42; 95% CI -0.83 to -0.01; p=0.045). A non-significant trend toward ALT reduction was also observed (SMD -0.29; 95% CI -0.62 to 0.04; p=0.08). HbA1c improved significantly (SMD -0.48; 95% CI -0.87 to -0.09; p=0.02), whereas non-significant

effects were detected in FBG level (SMD -0.10; p=0.39) and BMI (SMD -0.27; p=0.07).

Conclusion: Aerobic exercise confers moderate improvements in selective liver and glycemic biomarkers in adults with NAFLD, independent of reduction in weight. However, its effects on ALT, fasting glucose, and BMI remain inconclusive

Keywords: NAFLD, Aerobic Exercise, Alanine Transaminase, Aspartate Aminotransferases, Blood Glucose, Body Mass Index

PG-VC-64-Effects Of Dual Task Training With And Without Backward Walking On Balance And Participation In Children With Cerebral Palsy

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Background & Objectives: Children with cerebral palsy (CP) commonly experience impairments in balance, gait, and participation. Although dual-task training and backward walking are used to enhance motor function, it remains unclear whether combining these approaches provides additional benefit. This study aimed to compare the effects of dual-task training with and without backward walking on balance, activity, and participation in children with CP.

Methods: A randomized controlled trial was conducted with 44 children with CP recruited from the Riphah University clinic. Participants were randomly allocated to a control group (dual-task training only) or an experimental group (dual-task training combined with backward walking). Both groups received intervention for four weeks. Outcome measures included the Pediatric Balance Scale (PBS), Timed Up and Go (TUG), and Pediatric Outcomes Data Collection Instrument (PODCI). Data were analyzed using SPSS version 23. Paired and independent sample t-tests were used for within- and between-group comparisons.

Results: Both groups demonstrated statistically significant improvements in PBS, TUG, and PODCI scores ($p < 0.05$), indicating enhanced balance, functional mobility, and participation. However, no significant differences were observed between groups ($p > 0.05$), suggesting that adding backward walking did not provide additional benefits beyond dual-task training alone.

Conclusion: Dual-task training effectively improves balance, activity, and participation in children with CP. The addition of backward walking does not appear to enhance outcomes further, supporting dual-task training as an effective standalone intervention.

Keywords: Dual-task training, backward walking, balance, cerebral palsy.

PG-VC-65-Consumption Patterns And Perceptions Of Non-Nutritive Sweeteners Among Health-Conscious Adults

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Background & Objectives: Non-nutritive sweeteners (NNS) are increasingly used as sugar alternatives for weight management and glycemic control, yet their consumption patterns and perceptions among health-conscious adults in Pakistan remain unclear. This study aimed to assess and compare consumption patterns and perceptions—including acceptance, perceived risks, and perceived benefits of NNS among diabetic and non-diabetic adults.

Methods: A comparative cross-sectional analytical study was conducted among adults (≥ 18 years) in health-focused environments in Pakistan, including gyms, health clubs, and walking parks. A total of 400 participants (200 diabetics, 200 non-diabetics) who regularly or occasionally consumed NNS were included. Data were collected via a structured, self-administered questionnaire capturing sociodemographics and NNS consumption patterns, along with the validated Perception of Artificial Sweetener Scale (PASS-23). Group comparisons were performed using Chi-square and independent t-tests, and associations between PASS domains and diabetes status were analyzed using

univariate binary logistic regression. Statistical significance was set at $p < 0.05$.

Results: Diabetics were older, had higher BMI, lower socioeconomic status, and greater physical inactivity than non-diabetics (all $p < 0.001$). Regular NNS use was more frequent among diabetics (43.5% vs. 36.0%, $p = 0.007$), mainly for glycemic control and cravings, whereas non-diabetics used NNS primarily for calorie reduction and health reasons. Stevia (23% vs. 11%) and sachet forms (28.5% vs. 7.5%) were significantly more common in diabetics (both $p < 0.001$). Non-diabetics reported higher perceived benefits of NNS (61.0% vs. 48.5%, $p = 0.012$). Logistic regression showed that participants with higher perceived benefits had 40% lower odds of having diabetes (OR=0.602, 95% CI: 0.405–0.896, $p = 0.012$). Other perceptions were not significantly associated with diabetes status.

Conclusion: Diabetics rely more on NNS for glycemic control yet perceive fewer benefits compared with non-diabetics. Tailored education, consistent public health messaging, and culturally informed interventions are needed to promote safe and effective NNS use in populations with high diabetes burden

Keywords: artificial sweetener, low-calorie sweeteners, consumer perception, food safety, diabetes, non-nutritive sweeteners, sweetening agents, weight management

PG-VC-66- Effect of Integrated Neuromuscular Inhibition Technique Versus Conventional Exercise on Strength And Scapular Deviation In Young Adults With Scapular Dyskinesia

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Background and Objective: Scapular dyskinesia (SD), particularly Type II, is a frequently overlooked shoulder dysfunction characterized by medial scapular border prominence, often associated with serratus anterior weakness. This condition can compromise scapular mechanics even in asymptomatic young adults. The Integrated Neuromuscular Inhibition Technique (INIT), has shown promise in addressing scapular imbalances.

This study aims to compare the effectiveness of Integrated Neuromuscular Inhibition Technique (INIT) versus conventional therapeutic exercises in improving muscular strength, scapular alignment, and shoulder joint range of motion in young adults with asymptomatic type II scapular dyskinesia.

Methods: A single-blinded randomized controlled trial was conducted at Ziauddin College of Physical Therapy, Karachi, involving 82 participants aged 20–40 years. Subjects were randomly assigned to two groups ($n = 41$ each): Group A received INIT, and Group B underwent conventional therapeutic exercises over six weeks. Outcome measures included scapular deviation by PALM meter, shoulder ROM by goniometer, and muscle strength by handheld dynamometer, assessed at baseline, 4 weeks, and 6 weeks. The data was skewed so that Mann-Whitney U for between-

group analysis, Friedman ANOVA for within-group analysis, and for post hoc analysis, Wilcoxon Signed-Rank were used.

Results: Both groups, INIT and conventional therapy, were evenly matched at baseline, with similar mean ages (22.7 ± 2.29 vs. 23.26 ± 2.53 years). The INIT group demonstrated significantly greater improvements than conventional exercise across all measured outcomes. At six weeks, participants demonstrated superior shoulder range of motion (flexion, abduction, internal and external rotation; $p < 0.05$), enhanced muscle strength (upper and lower trapezius, serratus anterior, and rhomboids; $p < 0.05$), and a marked correction in scapular deviation ($p = 0.000$). Progressive within-group improvements further affirmed INIT's effectiveness in enhancing mobility, strength, and postural symmetry.

Conclusion: INIT significantly enhanced shoulder mobility, muscle strength, and scapular alignment in individuals with Type II SD. The findings support its integration into early physiotherapy protocols for effective musculoskeletal rehabilitation.

Keywords: Scapular dyskinesia, Integrated Neuromuscular Inhibition Technique, Conventional therapy, Muscle strength, Scapular Deviation, Range of motion.

PG-VC-67-Awareness, Knowledge, And Perceived Role of Matrix Rhythm Therapy in Neurorehabilitation: evidence from physiotherapists in Karachi

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Background and Objectives: Matrix Rhythm Therapy (MRT) is a gentle, non-invasive modality that uses low-frequency mechanical vibrations to restore natural physiological rhythms. It has shown potential benefits in musculoskeletal and neurological rehabilitation. However, in Pakistan, MRT remains relatively unfamiliar and underutilized in routine physiotherapy practice. To assess the level of awareness and knowledge of MRT among physiotherapists in Karachi and to evaluate their perceptions regarding its clinical efficacy and safety in neurological rehabilitation.

Methods: A cross-sectional survey was conducted among 60 physiotherapists working in different clinical settings across Karachi. Awareness to MRT, understanding its principles and contraindications and perceptions on its effectiveness as an adjunct therapy were evaluated using a validated questionnaire. The data analysis was done through descriptive statistics. The relationships between awareness and educational qualification (DPT vs MSPT) and clinical experience were compared using Chi-square and Fisher exact test. Logistic regression was used to predict awareness predictors.

Results: Only 31.7% of physiotherapists had heard of MRT, and only 36.7% of them said they knew its principles and contraindications. Attitudes were positive although there was low awareness: 51.7% thought that MRT could be used as an addition to traditional physiotherapy and enhance patient outcomes. Clinical experience was highly related to awareness of contraindications ($p = 0.021$).

Conclusion: Physiotherapists in Karachi show little understanding of MRT, but most of them view it as a useful addition to standard

rehabilitation and increases the need to develop.

Keywords: awareness, matrix rhythm therapy, neurological physical therapy, knowledge

PG-VC-68-Safety and Immunogenicity Of Live-Attenuated Mycobacterium Tuberculosis Vaccine (MTBVAC): A Systematic Review

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Background & Objectives: Tuberculosis remains one of the leading causes of infectious disease-related morbidity and mortality worldwide, and Bacillus Calmette–Guérin (BCG) is currently the only licensed vaccine for its prevention, with variable efficacy across populations. Mycobacterium tuberculosis vaccine (MTBVAC), a live attenuated vaccine derived from the human pathogen, is under clinical development for use in infants, adolescents, and adults.

Methods: This systematic review and meta-analysis aimed to evaluate and compare the

safety and immunogenicity of MTBVAC versus BCG in healthy individuals. A comprehensive search of PubMed, Cochrane Library, Scopus, and Web of Science was conducted, and four randomized controlled trials were included.

Results: Data were analyzed using random-effects models in RevMan 5.4 for both continuous and dichotomous outcomes. Risk of bias was assessed using the Cochrane Risk of Bias Tool 2.0, and certainty of evidence was evaluated with GRADEpro. MTBVAC demonstrated significantly higher interferon-gamma release assay conversion rates compared with BCG at 1 month, 6 months, and at the end of follow-up. CD4+ T-cell responses also favored MTBVAC at 2 months and after sensitivity analysis at 1 month. In terms of safety, MTBVAC was associated with a significantly lower risk of injection site discharge and scar formation, while other local and systemic adverse events, including headache, fatigue, pyrexia, and myalgia, showed no significant differences between groups. Serious adverse events were rare and comparable.

Conclusion: Overall, MTBVAC exhibits a favorable safety profile and enhanced early immunogenicity compared with BCG. Larger phase III efficacy trials are required to determine its role in providing durable clinical protection against Tuberculosis.

Keywords: Mycobacterium tuberculosis vaccine, Bacillus Calmette–Guérin

PG-VC-69-Ocular Health Assessment Of Arms Factory Workers In Darra Adam Khel

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Background & Objectives: Factory workers engaged in high-risk occupations such as arms manufacturing are vulnerable to ocular problems due to continuous visual strain, exposure to dust, and hazardous workplace conditions. This study aimed to assess the visual status, prevalence of ocular morbidities, and referral needs among arms factory workers in Darra Adam Khel, Pakistan.

Methods: A cross-sectional study was conducted over six months in multiple arms factories using a non-probability convenient sampling technique. A total of 306 workers participated after ethical approval and informed consent. Data were collected using a modified WHO proforma, including demographic details, ocular history, visual acuity assessment, refraction, ocular alignment, extraocular motility, and anterior segment examination. Visual acuity was evaluated using Snellen's chart, while additional clinical tests were performed to detect refractive errors and ocular pathologies.

Results: The mean age of participants was 44.64±13.13 years, with gunsmiths representing the majority. Most workers demonstrated good uncorrected visual acuity; however, 19.28% required refractive correction. Refractive errors were identified in 18.63% of participants, with myopia being the most frequent, followed by hyperopia and astigmatism. Overall, ocular morbidities were detected in 41.5% of workers, with dry eye being the most common condition, followed by pterygium, lens opacity, and convergence insufficiency. A total of 26.47% of participants required referral to tertiary care services, primarily due to pterygium. These findings

indicate a considerable burden of preventable ocular conditions among arms factory workers despite generally acceptable visual acuity levels.

Conclusion: Regular workplace eye screening programs, improved ocular safety practices, and timely clinical interventions are recommended to reduce occupational vision impairment and enhance productivity and quality of life in this vulnerable population.

Keywords: ocular health, factory workers, refractive errors, occupational exposure, dry eye, pterygium

PG-VC-70-Comparison Of Laser And Conventional Open Lateral Internal Sphincterotomy In Chronic Anal Fissure

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Background & Objectives: To compare postoperative outcomes between laser, lateral internal sphincterotomy (LIS) and conventional open LIS in patients with chronic anal fissure.

Methods: This prospective randomized controlled trial was conducted at SIMS Hospital & Research Center, Swat, over 12 months. Eighty patients diagnosed with chronic anal fissure were randomized into two groups: Laser LIS (n=40) and Open LIS (n=40). Primary outcome was postoperative pain assessed using Visual Analogue Scale (VAS) at 24 hours and Day 7. Secondary outcomes included operative time, healing rate at 4 weeks, postoperative complications, Wexner incontinence score, hospital stay, and time to return to normal

activity. Statistical analysis was performed using independent sample t-test and Chi-square test.

Result: Mean VAS at 24 hours was significantly lower in the Laser group (4.28 ± 1.00) compared to the Open group (5.97 ± 1.20) ($p < 0.001$). At Day 7, Laser group continued to demonstrate significantly lower pain scores (2.01 ± 0.80 vs 3.47 ± 1.00 ; $p < 0.001$). Operative time was shorter in the Laser group (18.2 ± 3.0 minutes vs 25.76 ± 4.0 minutes; $p < 0.001$). Healing at 4 weeks was 95% in the Laser group and 85% in the Open group ($p = 0.18$). Mean Wexner score was significantly lower in the Laser group (0.46 ± 0.70 vs 1.53 ± 1.00 ; $p < 0.001$). Hospital stay and return to work were significantly reduced in the Laser group ($p < 0.001$).

Conclusion: Laser lateral internal sphincterotomy demonstrated reduced postoperative pain, shorter operative time, improved short-term continence, and faster recovery compared to conventional open LIS, with comparable healing rates.

Keywords: Chronic anal fissure, Laser sphincterotomy, Open sphincterotomy, Postoperative pain, Randomized controlled trial.

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RESEARCH
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DECISIONS

**POSTGRADUATE
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PG-PP-1 – A Retrospective Translational Insight into The Design Of An Upper-Body Exoskeleton: A Rehabilitation Engineering Case Study

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Background & Objectives: Upper-body exoskeletons are increasingly investigated as rehabilitative technologies for individuals with spinal cord injuries; however, academic prototypes usually face challenges in translating to real-world applications. This case study presents a retrospective translational insight derived from a master's-level rehabilitation engineering project focused on the development of an upper-body exoskeleton intended to enhance mobility in paraplegic patients. The objective is to reflect on how user-centered considerations became evident only during later stages of system testing and integration rather than being incorporated from the outset.

Methods: The project comprised independently developed modules, including a motion sensing and data acquisition system, control architecture, and mechanical hardware structure. An inertial measurement unit (IMU)-based sensing system was designed to capture joint orientation data and evaluated through biomechanical studies of spinal posture and wrist joint motion. A control framework based on kinematic modeling of spinal motion was also developed to support rehabilitation analysis.

Results: Individual system modules demonstrated technical feasibility and satisfactory performance when evaluated independently. However, system-level testing revealed limitations related to module interoperability, overall system cohesion, and usability within a rehabilitation context. These challenges highlighted, in retrospect, the absence of early user needs assessment and limited engagement with patients and clinicians.

Conclusion: This retrospective case provides translational insight into the importance of initiating rehabilitative technology development with user-centered and human factors methodologies. The findings support policy, educational, and research recommendations that rehabilitation projects, particularly academic research should allocate structured time for user needs exploration, interdisciplinary collaboration, iterative co-development, and usability testing, emphasizing the design of technologies with users, not merely for them, to improve real-world relevance and social impact.

Keywords

rehabilitation engineering, exoskeletons, translational insight, user-centred design, human factors

PG-PP-2 – Acute Toxicity and Relaxant Activity of Total Flavonoids of Forsskaolea Tenacissima

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Background & Objectives: Abdominal spasms have historically been treated with the whole plant of Forsskaolea tenacissima. Thus, the study's goals were to identify the safe dosage range, identify the mechanism or mechanisms behind Forsskaolea tenacissima's

therapeutic usage for gastrointestinal spasms, and extract the plant's total flavonoids.

METHODS: Forsskaolea tenacissima's total flavonoids were examined for potential antispasmodic efficacy in isolated rabbit jejunal preparations after an acute toxicity research was conducted to establish the safe dosage range prior to in vivo tests.

RESULTS: With comparable EC50 values of 4.22 ± 0.849 mg/ml and 0.607 ± 0.0306 mg/ml, total flavonoids from Forsskaolea tenacissima decreased both spontaneous and high K⁺-induced contractions in isolated rabbit jejunal preparations. The concentrations used were 0.01, 0.03, 0.1, 0.3, 1.0, 3.0, 5.0, and 10.0 mg/ml. The mechanism was verified by constructing a calcium curve in the decalcified rabbit jejunal preparation with and without verapamil 0.1, 0.3 μ M. The EC50 value of the total flavonoids in Forsskaolea tenacissima is -2.55 ± 0.00 at 0.1 mg/ml, whereas the control has an EC50 value of -2.80 ± 0.00 . In the presence and absence of 0.1 μ M verapamil, the corresponding EC50 Log Ca⁺⁺ M values are 1.71 ± 0.07 and -2.45 ± 0.00 , respectively. This suggests that the total flavonoids of Forsskaolea tenacissima follow voltage-gated calcium channels for calcium influx since the right shift of Verapamil and the test sample's total flavonoids right shifts are comparable.

CONCLUSION: According to the study, Forsskaolea tenacissima's total flavonoids have antispasmodic action that may be mediated via voltage-gated Ca⁺⁺ channel blockage, and the safe dose is 100 mg/kg. This gives the plant a solid pharmacological foundation for its potential medical application in treating intestinal spasm.

KEYWORDS: Forsskaolea tenacissima, Flavonoids, Antispasmodic, Ca⁺⁺ antagonist, Verapamil

PG-PP-3 – Angiographic Profile Of Young Patients Presenting With STEMI

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Background & Objectives: Once considered an illness only impacting elderly people, ST-elevation myocardial infarction (STEMI) is becoming more and more prevalent in younger adults, therefore presenting fresh difficulties for prevention and treatment. The goal of this study was to evaluate the angiographic characteristics and connected cardiovascular risk factors in STEMI patients under 45 years of age.

Methods: At the Department of Cardiology, Shifa International Hospital, Islamabad, 78 young patients with confirmed STEMI who had coronary angiography were included in the research. This was observational cross-sectional study. Demographic data, clinical profiles, and angiographic results were examined utilizing hospital records.

Results: With smoking identified as the main cause, common risk factors included hypertension, diabetes, and smoking. Although the age range was small, a high incidence of proximal and multi-vessel disease was seen with the right coronary artery being the most often impacted artery, followed by the left anterior descending and left circumflex vessels.

Conclusion: These findings point out that at a young age severe coronary artery disease can already be present and underline the pressing need for early screening methods, targeted preventative cardiology programs in younger individuals, and aggressive risk factor reduction.

Keywords: STEMI, Angiography, Young, Smoking

PG-PP-4 – Anterior ST-Elevation Myocardial Infarction In A 19-Year Old With Non-Obstructive Coronaries Complicated By Complete Heart Block: A Rare Case Report

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Background & Objectives: Myocardial Infarction with Non-Obstructive Coronary Arteries (MINOCA) accounts for 5-10% of all cases of acute myocardial infarctions and has recently been observed in increasing numbers in younger patients without established coronary risk factors. While thought to be less severe, MINOCA may be associated with malignant arrhythmias and conduction disturbances. A post-anterior ST-elevation myocardial infarction (STEMI) complete heart block (CHB) is uncommon in this demographic and may be related to severe septal ischemia.

Methods: We describe a case of a 19-year-old male who never had comorbid conditions prior to admission for classic ischemic chest pain with anterior STEMI. He underwent streptokinase thrombolytic therapy for which coronary arteriography disclosed normal coronaries with suggestions of transient thrombotic occlusions with spontaneous recanalization. He returned with recurrent pain

to the chest with prompt development of symptomatic CHB with hypotension for which he required dopamine infusion with transvenous pacing.

Results: His conduction disturbances progressed from CHB to bifascicular to trifascicular block with CHB eventually. Repeat coronary arteriography disclosed normal coronaries once more. The echocardiogram disclosed an ejection fraction of 45% with moderate wall motion abnormalities. Because of conduction instabilities, he underwent permanent pacing with significant improvement thereafter to be sent home in stable conditions.

Conclusion: This case brings into focus a very rare presentation of MINOCA in a young patient that was complicated by progressing conduction system disease that needed permanent pacing. The importance of early recognition of MINOCA-related STEMI due to conduction system disease with careful monitoring, irrespective of a normal coronary cath angiogram, can once again be appreciated.

Keywords: Myocardial Infarction with Non-Obstructive Coronary Arteries (MINOCA); Anterior STEMI; Complete Heart Block; Trifascicular Block; Young Adult Myocardial Infarction; Conduction System Disease

PG-PP-5 – Artificial Intelligence For The Diagnosis Of Dental Caries: A Review Of Accuracy

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Background & Objectives: With the world swiftly adopting Artificial Intelligence in every field it is important to assess the accuracy of all the different artificial

intelligence platforms, in detecting dental caries using different radiological modalities

Methods: Meta-analysis and systematic review articles published in English from 2020-25 were filtered from multiple databases including PubMed and Google Scholar. Fifteen full articles were finalized for QualSyst and Nvivo 15 software was then used to generate themes/subthemes.

Results: Artificial intelligence has a strong potential for detection of dental caries across all the different radiological modalities. Studies have shown high diagnostic accuracy, sensitivity, and specificity, with AI systems achieving near-expert performance and better early enamel caries detection. AI has shown great promise in predicting risk of future caries as-well as diagnostic consistency. Nonetheless, current evidence is limited due to high heterogeneity in study designs, datasets, evaluation metrics, risk of bias, limited external and clinical validation, and inconsistent real world performance. Larger, standardized, and clinically meaningful studies will be necessary before routine clinical adoption.

Conclusion: Artificial intelligence has a bright future for detection of dental caries, but further improvement will be required to achieve stable and dependable results.

Keywords: Radiographs; Dental Caries; Meta-analysis; Artificial intelligence.

PG-PP-6 – Artificial Intelligence In A Developing Healthcare System: A Nationwide Survey Of Radiologists In Pakistan

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Background & Objectives : Artificial intelligence (AI) is increasingly transforming radiology by supporting image interpretation, workflow optimization, and clinical decision-making. While AI adoption is expanding rapidly in high-income countries, limited evidence exists regarding its clinical use and acceptance in developing healthcare systems. In Pakistan, where healthcare automation remains in early stages, this study aimed to evaluate Pakistani radiologists' awareness, clinical use and perceptions regarding the future role of AI in radiology.

Methods: A nationwide cross-sectional descriptive study was conducted between December 2025 and January 2026, enrolling 85 radiology professionals from public and private healthcare settings. Participants included consultants, residents, and medical officers with at least six months of radiology experience. Data were collected using a validated, self-administered structured questionnaire assessing demographics, AI awareness and knowledge, current clinical use, and future perceptions. AI was explicitly defined as image-based clinical radiology systems, excluding general-purpose or text-based AI tools. Statistical analysis was performed using SPSS version 25.0, with statistical significance set at $p < 0.05$.

Results: Most participants were residents (67%) and worked in public hospitals (64.7%). While general awareness of AI in radiology was high (89.4%), only 38.8% reported a clear understanding of AI applications, and just 4.7% were actively involved in AI research. Formal exposure to AI education was limited, with 62.4% having never attended an AI-related training session. Current clinical use of AI was low (12.9%), primarily due to lack of availability at the workplace. Among AI users, common applications included chest X-ray/CT

interpretation, image interpretation, and workflow optimization. Despite low adoption, 83.5% supported AI implementation, and 69.4% favored incorporating AI education into residency programs. Most respondents viewed AI as an assistive tool, while concerns included overreliance on AI and insufficient training.

Conclusion: Pakistani radiologists demonstrate high awareness and strong support for AI but limited clinical adoption, largely due to infrastructural and educational constraints

Keywords: Artificial intelligence; Radiology; Awareness; Perception; Clinical adoption; Pakistan

PG-PP-7 – Assessing Awareness And Preventive Practices For Hepatitis B And C Among Barbers In Peshawar

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Background & Objectives: Hepatitis B and C are major global health concerns and leading causes of chronic liver disease, cirrhosis, and liver cancer. Early detection and prevention are essential. While a vaccine exists for hepatitis B, no vaccine is currently available for hepatitis C. Barbers are a potential risk group due to the use of shared instruments. This study was conducted with the aims to assess the level of awareness among barbers in Peshawar regarding the transmission, symptoms and prevention methods for hepatitis B and C.

Methods: This descriptive cross-sectional study included 137 barbers selected through non-probability convenience sampling. Data was collected using a structured questionnaire and analyzed using SPSS v23. The Sample size was calculated using a formula , $n = z^2 \times p(1-p)/E^2$, where P is estimated prevalence=14.9%,

E is margin of error taken as 5% and Z for Confidence level of 95% is 1.96.

Results: Among 137 individuals' majority (53.3%) belonged to age group 40-49 and worked 35-44 hours per week, while 86.9% had received training on infection control, only 21.2% barbers were vaccinated against hepatitis B, while 25.5% declared unvaccinated, and 53.3% were unsure. A total of 77.4% had never been tested for hepatitis B or C. Despite this, most barbers recognized their occupational risk and identified hygiene and vaccination as key preventive measures.

Conclusion: Most barbers were not tested or vaccinated for hepatitis B or C, even though they knew the risks. This shows a need for better awareness and vaccination programs.

Keywords: Hepatitis B, Hepatitis C, Vaccination, Awareness, Barbers

PG-PP-8 – Assessment Of Infection Control Practices And Personal Protective Equipment Compliance Among Dental House Officers: A Clinical Audit

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Background & Objectives: Infection control is a critical component of dental clinical practice, as dental healthcare professionals are frequently exposed to blood, saliva, and other potentially infectious materials during patient care. Proper adherence to infection prevention measures, including hand hygiene, use of personal protective equipment (PPE), sterilization of instruments, and safe biomedical waste management, is essential to minimize the risk of cross-infection in dental settings. This clinical audit aimed to assess

infection control practices and compliance with PPE protocols among dental house officers working in a clinical dental environment. A cross-sectional audit was conducted using a structured questionnaire evaluating hand hygiene practices, PPE usage, sterilization procedures, environmental disinfection, and waste disposal practices.

Methods: A total of 38 participants were included in the study. Data were analysed using SPSS software, and descriptive statistics including frequencies and percentages were calculated. The results indicated generally satisfactory compliance with several infection control practices among participants. Approximately 60–68% of respondents reported performing hand hygiene before and after patient contact, while the majority reported consistent use of PPE such as gloves, masks, and gowns during clinical procedures. Compliance with protective eyewear was also relatively high. Most participants reported appropriate sterilization of dental instruments and adherence to safe waste disposal practices. However, certain gaps were identified in hand hygiene after glove removal and glove replacement between patients. Pareto analysis further revealed that a limited number of practices accounted for the majority of non-compliance, particularly related to hand hygiene and consistent PPE usage.

Conclusion: These findings highlight the need for continuous reinforcement of infection control protocols. Strengthening training programs, ensuring availability of infection control resources, and implementing regular monitoring systems may significantly improve compliance and promote safer clinical practices in dental healthcare settings.

Keywords: infection control, personal protective equipment, dental house officers, clinical audit, cross infection prevention, dental practice

PG-PP-9 – Assessment Of Junior Doctors' Attitude Toward Professionalism

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Background & Objectives: Professionalism is a core competency in medical practice, essential for safe and compassionate care. However, lapses in professionalism among junior doctors remain a concern, particularly in high-pressure, resource-constrained environments. This study aimed to assess the attitudes of junior doctors toward key domains of medical professionalism in a tertiary care setting in Pakistan.

Methods: A quantitative, cross-sectional study was conducted among 542 junior doctors (house officers and postgraduate trainees) using a validated self-administered questionnaire, the Learners' Attitude of Medical Professionalism Scale (LAMPS). The tool measured five domains: Duty/Accountability, Excellence/Autonomy, Honor/Integrity, Altruism, and Respect for Others. Data were analyzed using descriptive statistics, t-tests, and ANOVA.

Results: The highest mean scores were observed for Duty/Accountability (3.62 ± 0.43) and Excellence/Autonomy (3.62 ± 0.51), while the lowest score was for Respect for Others (2.83 ± 0.42). Significant associations were found between gender and Duty/Accountability ($p = 0.014$) as well as Altruism ($p = 0.014$), and between marital status and Excellence/Autonomy ($p = 0.015$). Honor/Integrity showed moderate scores (3.19 ± 0.25) with no significant demographic associations.

Conclusion: While junior doctors demonstrate strong adherence to procedural and knowledge-based aspects of professionalism, significant

vulnerabilities exist in domains of integrity and respect. These findings highlight the need for integrated, longitudinal professionalism training, faculty development, and systemic reforms to foster a culture of transparency, equity, and interprofessional collaboration in clinical environments.

Keywords: medical professionalism, junior doctors, attitudes, assessment, medical education

PG-PP-10 – Association Between Anterior Pathological Q Waves And Left Ventricular Ejection Fraction In Ischemic Heart Disease: A Prospective ECG-Based Analysis

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Background & Objectives: Pathological Q waves are established ECG markers of myocardial infarction and scar formation. Left ventricular ejection fraction (LVEF) is a key predictor of cardiovascular outcomes. Anterior-wall infarctions typically produce anterior lead Q waves and cause greater LV dysfunction, yet the relationship between anterior Q-wave burden and LVEF in stable ischemic patients remains incompletely defined. This study aims to: (1) characterize the frequency and distribution of anterior pathological Q waves; (2) quantify LVEF via echocardiography; (3) analyze the statistical relationship between Q-wave burden and LVEF; and (4) assess Q-wave patterns as predictors of LV systolic dysfunction.

Methods: This prospective observational cohort study enrolled 150 adults (ages 30–80) with known or suspected ischemic heart disease at a cardiac outpatient clinic. Patients with conduction abnormalities, pacemakers, congenital heart disease, or incomplete data were excluded. ECGs were analyzed for anterior pathological Q waves using standard

criteria; LVEF was measured by Simpson's biplane method on 2D echocardiography. Correlation and regression analyses evaluated the Q-wave burden–LVEF relationship ($p < 0.05$). IRB approval was obtained and all data anonymized.

Results: Among 150 patients (80% male), a significant negative correlation was found between anterior Q-wave burden and LVEF ($p < 0.05$). Q waves in leads V4–V6 were associated with the most severe LVEF reduction, while V1–V2 involvement showed only mild reduction. Patients with Q waves in three or more anterior leads were more likely to have LVEF below 40%, indicating severe LV systolic dysfunction.

Conclusion: Anterior Q-wave burden correlates meaningfully with echocardiographic LVEF, supporting its use as a simple, low-cost screening tool—particularly in resource-limited settings. Clinicians should consider anterior Q-wave extent when assessing LV functional status in ischemic heart disease patients.

Keywords: pathological Q waves, left ventricular ejection fraction, ischemic heart disease, ECG, echocardiography, myocardial infarction

PG-PP-11 – Association Between BMI And Outcomes Following Total Knee Arthroplasty: A Prospective Cohort Study

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Background & Objective:: Nursing is a profession that requires nursing students to possess both theoretical knowledge learned in the classroom and clinical competence. Initial clinical placements are a crucial component of nursing education, providing students with opportunities to apply theoretical knowledge,

develop clinical skills, and gain professional confidence. However, these early clinical experiences are often stressful, which may affect learning outcomes and psychological well-being. Social support from family, friends, and instructors is considered an important factor that can mitigate the negative effects of stress during initial clinical placements. This study aimed to assess the perceived social support and stress levels of nursing students during initial clinical placements and to examine the association between them.

Methods: A quantitative, cross-sectional correlational study was conducted among 198 second-semester nursing students undergoing initial clinical placements at three selected nursing colleges in Peshawar. Participants were selected through convenience sampling techniques, and data were collected using self-administered questionnaires. Descriptive statistics summarized sociodemographic characteristics, while Chi-square tests were applied to examine associations between variables.

Results: The findings showed that the majority of students (87.96%) experienced moderate stress, followed by 8.38% with mild stress and 3.66% severe stress. In terms of Perceived social support, 56.25% of students reported moderate support, 41.67% high support, and only 2.08% low support. A significant association was found between gender and stress levels ($\chi^2 = 9.239$, $p = 0.010$). However, no significant association was observed between perceived social support and stress levels ($\chi^2 = 2.804$, $p = 0.591$), nor with other demographic variables such as age, marital status, institute, or clinical placement area.

Conclusion: The study concluded that while nursing students experienced moderate stress and generally received moderate to high levels of social support, social support alone was not significantly associated with reduced stress during initial clinical placements. These findings suggest that stress during initial clinical placements may be influenced by

multiple factors, including clinical workload, self-efficacy, and individual coping strategies. Interventions focusing on stress management, resilience-building, and structured mentoring may help better support students during their initial clinical placements.

Keywords: Perceived stress, perceived social support, nursing students, initial clinical placements, clinical education, psychological well-being.

PG-PP-12 – Association Between Perceived Social Support And Stress Levels Among Nursing Students During Initial Clinical Placements

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Background & Objective:: Nursing is a profession that requires nursing students to possess both theoretical knowledge learned in the classroom and clinical competence. Initial clinical placements are a crucial component of nursing education, providing students with opportunities to apply theoretical knowledge, develop clinical skills, and gain professional confidence. However, these early clinical experiences are often stressful, which may affect learning outcomes and psychological well-being. Social support from family, friends, and instructors is considered an important factor that can mitigate the negative effects of stress during initial clinical placements. This study aimed to assess the perceived social support and stress levels of nursing students during initial clinical placements and to examine the association between them.

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Conclusion: The study concluded that while nursing students experienced moderate stress and generally received moderate to high levels of social support, social support alone was not significantly associated with reduced stress during initial clinical placements. These findings suggest that stress during initial clinical placements may be influenced by multiple factors, including clinical workload, self-efficacy, and individual coping strategies. Interventions focusing on stress management, resilience-building, and structured mentoring may help better support students during their initial clinical placements.

Keywords: Perceived stress, perceived social support, nursing students, initial clinical placements, clinical education, psychological well-being.

PG-PP-13 – Awareness About the Known Risk Factors of Helicobacter Pylori Gastritis Among Medical Students and Patients of Rehman Medical Institute, Peshawar

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Background & Objectives: Helicobacter pylori is a gram-negative bacillus and a major cause of gastritis, peptic ulcer disease, and gastric carcinoma. It is a transmissible infection and a significant public health concern, particularly in developing countries like Pakistan. Risk factors such as poor sanitation, low socioeconomic status, unhealthy lifestyle, and consumption of contaminated food and water contribute to its spread. Despite its high prevalence, awareness regarding these risk factors remains limited. This study aimed to assess and compare the knowledge of H. pylori risk factors among medical students and patients at Rehman Medical Institute (RMI).

Methods: A cross-sectional study was conducted at RMI, Peshawar. Data were collected using a structured questionnaire from medical students and patients through convenience sampling. Knowledge regarding risk factors was assessed, and data were analyzed using SPSS with descriptive and comparative statistics.

Results: Medical students demonstrated higher awareness compared to patients. While most participants recognized poor hygiene and contaminated food as risk factors, gaps were noted in understanding transmission routes and socioeconomic influences. The difference in knowledge between the two groups was statistically significant.

Conclusion: Awareness of H. pylori risk factors is inadequate, especially among patients. Educational interventions are needed to improve knowledge and promote preventive practices.

Keywords: Poor sanitation, socioeconomic status, gastritis, prevalence, peptic ulcer

PG-PP-14 – Bizarre Presentation Of Urological Cancers: A Case Series

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Background & Objectives: Urological cancers are an umbrella term for cancers of the prostate, kidney, bladder, penis, and testis. The usual clinical presentation of different urological cancers includes hematuria, pain, lower urinary tract symptoms, or incidental findings. The mean age of presentation for renal tumors, bladder tumors, adenocarcinoma prostate and male genital tumors is 65, 73, 67 and 60 years, respectively. The usual histopathological findings are bladder cancer (TCC, 95%), prostate cancer (Adenocarcinoma, 90%), Renal tumors (RCC, 70%), penile tumors (Squamous cell carcinoma, 90%) and testicular tumors (Germ cell tumors, 82%). Bizarre presentation in terms of clinical presentation, age, histopathology and usual staging however have been rarely reported. The objective of this study is to present a case-series of unusual presentation of urological cancers in a single tertiary care hospital.

Methods: This descriptive study was conducted in the department of Urology at the Institute of Kidney Diseases, Peshawar from March 2021 till June 2024. A total of 14 patients through non-probability convenient sampling were included in the study. Patients with rare presentations including clinical, age, histopathology and tumor staging, were included in the study.

Results: In 9 patients, the presentation was unusual with respect to age. Among these, three cases of TCC bladder were seen in children with an average age of 14.3 years (2 male, 1 female), two cases of Renal cell carcinoma in

patients younger than 20 years (mean age 17.5 years), two cases of adenocarcinoma prostate (mean age 44.5 years), and two cases of squamous cell carcinoma of penis (mean age 26.5 years). The adenocarcinoma prostate was metastatic disease, an unusual staging at this age of presentation. In 3 patients, the histopathology showed rare findings including mucinous adenocarcinoma of the kidney, liposarcoma of the kidney, and TEF trans locational renal cell carcinoma. In 2 cases, a rare paraneoplastic manifestation of renal tumors, i.e. Stauffer syndrome, was seen.

Conclusion: Urological cancers can present in unusual forms and may require a high level of suspicion for diagnosis.

Key words: Urological cancers, bizarre presentation

PG-PP-15 – Bromhexine Attenuates PTZ-Induced Anxiety-Like Behavior By Modulating Neuroinflammation, Oxidative Stress, And Neurotransmitter Imbalance In Mice

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Background & Objectives: Anxiety disorders are common neuropsychiatric conditions associated with oxidative stress, neuroinflammation, and dysregulated excitatory-inhibitory neurotransmission. Existing anxiolytic therapies are often limited by adverse effects and lack of disease-modifying potential. Bromhexine, a clinically approved mucolytic drug and the parent compound of ambroxol, has demonstrated antioxidant, anti-inflammatory, and neuroprotective properties, suggesting its

potential for repurposing in anxiety-related disorders.

Methods: The anxiolytic and neuroprotective effects of bromhexine were evaluated in a pentylenetetrazol (PTZ)-induced anxiety model in mice. Animals received bromhexine (60–70 mg/kg, p.o.) for 21 days, while diazepam served as a reference anxiolytic. Anxiety-like behaviors were assessed using the open field, elevated plus maze, elevated zero maze, hole board, and marble burying tests. Biochemical and molecular analyses of prefrontal cortical tissue were performed to assess oxidative stress markers, antioxidant enzyme activity, pro-inflammatory cytokines, and neurotransmission-related proteins. Molecular docking and molecular dynamics simulations were conducted to explore interactions of bromhexine with inflammatory signaling targets.

Results: Bromhexine significantly attenuated PTZ-induced anxiety-like behaviors, enhanced exploratory activity, and reduced compulsive responses. These behavioral effects were accompanied by a marked reduction in reactive oxygen species and lipid peroxidation, restoration of superoxide dismutase activity, and suppression of TNF- α , IL-1 β , and NF- κ B expression. Bromhexine also normalized GAD-1 and VGLUT-1 levels and increased brain-derived neurotrophic factor expression, indicating restoration of excitatory–inhibitory neurotransmission balance. In-silico analyses revealed stable and energetically favorable interactions of bromhexine with key inflammatory mediators.

Conclusion: mBromhexine exerts significant anxiolytic and neuroprotective effects in a PTZ-induced anxiety model by modulating oxidative stress, neuroinflammation, and neurotransmitter imbalance. Given its established clinical safety profile, bromhexine represents a promising repurposed therapeutic

candidate for anxiety-related neuropsychiatric disorders.

Keywords: Bromhexine, Anxiety, Neuroinflammation, Oxidative stress, PTZ-induced model, Neuroprotection

PG-PP-16 – ChatGPT Accuracy, Efficiency & Ethical Implications Over Clinical Decision-Making Context to Human Clinicians: A Survey of Healthcare Professionals

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Background & Objectives: The advent of advanced artificial intelligence (AI) models, such as ChatGPT, has ushered in a new era of possibilities for augmenting the capabilities of human clinicians. The Objectives of this study was to conduct a survey among various health care practitioners to evaluate the perception of ChatGPT's accuracy, efficiency, ethical implications, workload on clinical decision making in the healthcare industry.

Methods: A cross-sectional survey was conducted with a total of 100 health care practitioners during March to April 2023 through online Google forms. A self-administered questionnaire was used that had 24 questions evaluated on 5-point Likert scale.. A descriptive statistical analysis was done including mean, standard deviation, frequency & percentage.

Results: The scores were found to be more on the favor of human clinicians in making clinical decisions in contrast to ChatGPT; 52% of healthcare practitioners reported for human accuracy (very and extremely

confident) whereas, 21% reported for ChatGPT. Almost 43% clinicians believed that use of ChatGPT in clinical decision making can pose ethical concerns. Around 24% practitioners believed that ChatGPT does not reduce the workload of healthcare providers. Further 28% healthcare providers have the confidence on the efficiency of ChatGPT in making clinical decisions compared to human clinicians.

Conclusion: The clinicians are not much confident regarding accuracy and effectiveness in clinical decision made by ChatGPT, however enhancement in performance of ChatGPT can provide an additional tool for assistance, however, it may pose more ethical concern than human.

Keywords: Artificial Intelligence, Clinical Decision-Making, Healthcare Practitioners, Survey

PG-PP-17 – Clinical and Metabolic Profile of Patients with Ischemic Stroke

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Background & Objective: Ischemic stroke is a leading cause of morbidity and mortality worldwide, often associated with underlying metabolic and vascular risk factors. Understanding the clinical presentation alongside metabolic abnormalities such as diabetes, dyslipidemia, and hypertension is essential for early diagnosis and management. This study explores the clinical and metabolic profile of patients with ischemic stroke to identify key risk factors and improve patient outcomes. To evaluate the demographic

variables, clinical features, and metabolic profile of patients presenting with ischemic stroke.

Methods: This was retrospective observational study carried out in tertiary care setting. Medical records of adult patients admitted with radiologically confirmed ischemic stroke between December 2024 and May 2025 were reviewed using Hospital management information system (HMIS). Data included for analysis include age, sex, comorbid conditions, body mass index (BMI), glycated hemoglobin (HbA1c), and serum sodium levels. Descriptive statistical analysis was performed.

Results: A total of 106 patients were included in the final cohort. The mean age was 59.0 ± 14.4 years while the median age was 60 years, with an interquartile range of 49–70 years. Female patients constituted 61 (57.5%) of the cohort. Hypertension alone was the most prevalent comorbidity, present in 55 (52.0%) of patients, while 29 (27.4%) had coexisting hypertension and diabetes mellitus. The average body mass index (BMI) was 26.3 ± 4.4 kg/m², reflecting that the study population was predominantly overweight. Mean HbA1c was $8.5 \pm 1.9\%$, reflecting poor glycemic control. Mean serum sodium level was 132.1 ± 6.2 mmol/L, suggesting frequent mild hyponatremia.

Conclusion: Ischemic stroke in this cohort predominantly affected middle-aged and elderly individuals and was strongly associated with poorly controlled vascular and metabolic risk factors. Optimizing the management of hypertension, diabetes, and metabolic disturbances may contribute to reducing the burden of ischemic stroke.

Keywords: Ischemic stroke; Hypertension; Diabetes mellitus; Glycemic control.

PG-PP-18 – Clinical Audit Poster Presentation

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Background & Objectives: Well-structured discharge summaries are critical for continuity of care, patient safety, and effective communication. Incomplete discharge summaries may impair follow-up management and potentially increase the risk of medical errors. This clinical audit was conducted to evaluate and optimize the quality and completeness of post-operative discharge summaries in the Department of Ophthalmology at MTI Hayatabad Medical Complex, Peshawar, as per the Royal College of Physicians guidelines.

Methods: The two-cycle audit was performed. In the first cycle, a retrospective audit of 29 discharge summaries over a period of six months was carried out using a standardized assessment form. Areas for improvement were identified, and measures were taken, including the introduction of a standardized discharge form, education, and visual prompts. A prospective audit of 29 discharge summaries was carried out in the second cycle.

Results: The results from the baseline measurements revealed that there was good documentation of demographic information and the name of the surgery; however, there were some important parameters that showed 0% compliance, which included safety messages, allergies, clinical summary, results of investigations,

and indications for medications. After the intervention, there was an improvement in the primary diagnosis (34% to 69%), past medical history (0% to 14%), documentation of anaesthesia (48% to 66%), identification of anaesthetist (3% to 24%), per- and post-operative findings (24% to 59%), medication dose (58% to 79%), and route of administration (24% to 66%). The documentation of follow-up was improved to 100%.

Keywords: clinical audit, discharge summary, documentation quality, ophthalmology, patient safety, quality improvement

PG-PP-19 – Colorectal Carcin: A Narrative Review of Risk Factors, Diagnosis, and Management

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Background and Objective: Colorectal carcinoma (CRC) is among the most common gastrointestinal malignancies and a major cause of cancer-related mortality worldwide. It develops through a multistep adenoma–carcinoma sequence involving cumulative genetic and epigenetic alterations. Early detection and preventive strategies are critical for reducing disease incidence and improving survival.

To provide a concise overview of the risk factors, clinical presentation, diagnostic approaches, and current management strategies of colorectal carcinoma, with emphasis on early detection and advances in treatment.

Methods: A descriptive narrative review was conducted using standard medical textbooks, peer-reviewed journal articles, and established clinical guidelines to summarize current knowledge regarding the epidemiology,

pathogenesis, diagnosis, and management of colorectal carcinoma.

Results: Colorectal carcinoma predominantly affects older adults. Major risk factors include a positive family history, inflammatory bowel disease, unhealthy dietary habits, obesity, smoking, and physical inactivity. Clinical presentation ranges from asymptomatic disease in early stages to altered bowel habits, rectal bleeding, iron-deficiency anemia, abdominal pain, and weight loss in advanced disease. Colonoscopy with histopathological confirmation remains the gold standard for diagnosis, while staging is based on the TNM classification system. Surgical resection is the cornerstone of treatment, with chemotherapy, radiotherapy, and targeted biological therapies utilized according to disease stage and molecular characteristics.

Conclusion: Colorectal carcinoma is a largely preventable malignancy with a favorable prognosis when detected early. Strengthening screening programs, enhancing public awareness, and integrating molecular-based therapies are essential to reducing disease burden and improving patient outcomes.

Keywords: Colorectal carcinoma; Colon cancer; Rectal cancer; Screening; Colonoscopy; TNM staging

PG-PP-20 – Comparative Assessment Of 10-Year Cardiovascular Risk Among Type 2 Diabetic Patients on Metformin, Insulin-Based Regimens, And Newer Antihyperglycemic Agents: A Cross-Sectional Study

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Background and Objectives:

This study assessed the estimated 10-year cardiovascular disease (CVD) risk among Type 2 Diabetes Mellitus (T2DM) patients on six antihyperglycemic regimens.

In order to close the gap between trial evidence and practical application and to improve cardiovascular outcomes in diabetic patients.

Methods: This cross-sectional study enrolled 384 diabetic patients presenting at the medicine department, Timergara Teaching Hospital, KPK, divided into six treatment groups, each of which recruited sixty-four participants:

1) Metformin by itself; 2) Metformin + Sitagliptin; 3) Metformin + Glimepiride; 4) Metformin + Gliclazide + Dapagliflozin; 5) Insulin; 6) Insulin + Metformin + Sitagliptin. The 10 year CVD risk was determined using WHO/ISH Risk Prediction Chart for SEAR D region, used as questionnaire. Statistical analysis was done using SPSS 20 by applying Chi-Square, ANOVA and Kruskal-Wallis tests were applied for statistical analysis using SPSS.

Results: There was a significant difference ($p < 0.001$) in the distribution of WHO risk categories, with 61% of the insulin-alone group classified as high risk compared to 26% in the dapagliflozin group. Compared to the sulfonylurea-based (Group 3), and insulin-alone (Group 5), the regimen adding dapagliflozin (Group 4) had the lowest mean risk. Conclusion:

Conclusion: In daily clinical practice, these results offer a standard comparison of drugs to support the choice of cardioprotective treatments specific to each patient.

Keywords: cardiovascular disease risk, Type 2 diabetes, WHO risk chart.

PG-PP-21 – Comparative Effectiveness Of Teaching Hemostasis In Oral Surgery Using Gelatin Sponge Versus Oxidized

Regenerated Cellulose: A Simulation-Based Parallel-Group Study

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Background & Objective: Post-extraction bleeding is a common early complication in oral surgery and a frequent cause of patient discomfort and unplanned postoperative visits. Effective local hemostasis is therefore an essential clinical competency for undergraduate dental students. Simulation-based education provides a structured and safe environment for teaching procedural skills without risk to patients; however, limited evidence exists comparing different hemostatic materials as educational tools in oral surgery training. To compare the effectiveness of gelatin sponge and oxidized regenerated cellulose as teaching tools for post-extraction hemostasis in a simulation-based oral surgery training program.

Methods: This prospective, randomized, parallel-group simulation-based study was conducted among final-year Bachelor of Dental Surgery students at Peshawar Medical & Dental College. Fifty-four students were randomly allocated to receive standardized training using either gelatin sponge or oxidized regenerated cellulose on phantom head models. Procedural competence was assessed using an Objective Structured Clinical Examination (OSCE) checklist as the primary outcome. Secondary outcomes included procedural error rates, time to hemostasis, material retention and stability, knowledge acquisition, student confidence, and patient counseling skills. Data were analyzed using appropriate descriptive and inferential statistical tests, with $p \leq 0.05$ considered statistically significant.

Results: Students trained with oxidized regenerated cellulose achieved significantly

higher OSCE scores, demonstrated fewer procedural errors, and achieved hemostasis in a shorter time compared to those trained with gelatin sponge ($p < 0.01$). Material retention and stability, confidence levels, and patient counseling performance were also significantly better in the oxidized cellulose group, while post-intervention knowledge scores improved similarly in both groups.

Conclusion: Oxidized regenerated cellulose appears to be a more effective teaching tool for simulation-based training in post-extraction hemostasis. Incorporating this material into undergraduate oral surgery skills training may enhance procedural competence, efficiency, and learner confidence.

Keywords: Simulation-based education; Oral surgery; Hemostasis; Gelatin sponge; Oxidized regenerated cellulose; Dental students

PG-PP-22 – Comparison Of Mean Pain Between Pulpotomy And Pulpectomy In Patients With Symptomatic Irreversible Pulpitis: A Randomized Controlled Trial

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Background & Objectives: Symptomatic irreversible pulpitis is a frequent endodontic emergency that needs urgent pain treatment. However, there is still controversy concerning whether pulpotomy can deliver the same types of postoperative results as pulpectomy. This research project was focused on comparing the occurrence of pain and discomfort in the postoperative process in patients who underwent pulpotomy and pulpectomy because of symptomatic irreversible pulpitis and producing evidence to inform emergency endodontic decision-making.

Methods: Out of 584 patients aged between 12 and 65 years, diagnosed with acute symptomatic irreversible pulpitis, the patient population was randomly divided into pulpotomy (n=292) and pulpectomy (n=292) groups. Systemic contraindications, pregnancy, and recent administration of antibiotics or analgesics, periapical abscess, periodontal complications, or calcified canals were not allowed. Every operation was done under the influence of local anesthesia and a rubber dam. Assessment of postoperative pain measured by use of a visual analogue scale was done at 12 hours, 24 hours, and daily for seven days using telephone follow-up, and discomfort was also measured separately.

Results: Data were compared with the help of either Mann-Whitney U, Student t-test, Chi-square, or Fisher exact test and separately compared by gender and age, and the significance level was determined as $p < .05$. The pulpotomy group had a statistically superior median pain score at 12 and 24 hours and reported more discomfort between Day 1 to Day 6 than the pulpectomy group; the difference disappeared by Day 7. Subgroup homogeneous analyses revealed greater early postoperative pain in males and the age groups in the pulpotomy group. In the restrictions of this study, pulpectomy gave better short-term pain management and less postoperative pain.

Conclusion: These results justify pulpectomy as a more reliable alternative to immediate analgesia, whereas pulpotomy is a less invasive alternative that needs the counseling of the patient and the optimization of analgesic measures.

Keywords: Endodontics, Pain Management, Postoperative Pain, Pulpectomy, Pulpitis, Pulpotomy, Randomized Controlled Trial, Symptomatic Irreversible Pulpitis,

PG-PP-23 – Comparison Of Outcome Of Intramedullary Interlocking Nail Versus

Dynamic Compression Plate For Treatment Of Humeral Shaft Fractures

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Background & Objective: To compare the frequency of excellent functional outcome with dynamic compression plate and intramedullary interlocking nail for treatment of humeral shaft fractures. The study was conducted from 1st March 2025 to 1st December 2025 at the Orthopedic A Unit, Khyber Teaching Hospital, Peshawar.

Methods: A total of sixty patients aged between eighteen and sixty years with closed humeral shaft fractures classified under type A1 to A3 of the AO/OTA system were enrolled and randomly divided into two equal groups. Group A underwent open reduction and internal fixation with dynamic compression plate, and Group B received fixation by intramedullary interlocking nail through antegrade or retrograde approach. Patients were followed at two, six, twelve, and twenty-four weeks to evaluate bone healing and functional recovery using the Disabilities of the Arm, Shoulder and Hand scoring system. An excellent outcome was defined as a score below twenty-four after six months.

Results: The mean age of participants was 42.48 ± 9.42 years. Excellent functional outcome was achieved in twenty-six patients (86.7%) treated with dynamic compression plate and twelve patients (40.0%) treated with intramedullary interlocking nail, showing a statistically significant difference ($p < 0.001$).

Conclusion: Dynamic compression plate fixation provides superior functional outcomes compared with intramedullary interlocking nail for the treatment of humeral shaft fractures.

Keywords: Bone plates, Fracture fixation, Humeral fractures, Orthopedic procedures, Treatment outcome

PG-PP-24 – Comparison Of Outcome Of Mirabegron Vs Tamsulosin Plus Solifenacin In DS-Related Symptoms

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Background & Objectives: Liddle syndrome is a rare hereditary cause of early-onset, salt-sensitive, treatment-resistant hypertension characterised by increased epithelial sodium channel (ENaC) activity leading to hypertension, hypokalemia, and metabolic alkalosis. It results from missense or frameshift mutations in the SCNN1A, SCNN1B, or SCNN1G genes. Diagnosis is usually clinical, supported by a low renin, low aldosterone profile, and confirmed by genetic testing, while treatment with ENaC blockers such as amiloride is effective.

Case Presentation: We report a case of a 21-year-old male who presented with severe chest pain and hypertensive emergency, with investigations showing elevated troponin, hypokalemia, and metabolic alkalosis. Normal coronary angiography excluded primary cardiac pathology, prompting evaluation for secondary hypertension. Renal Doppler was normal, and a non-elevated aldosterone–renin ratio ruled out primary hyperaldosteronism.

The clinical constellation suggested Liddle syndrome, a rare cause of early-onset hypertension. A therapeutic trial of amiloride resulted in clinical and biochemical improvement. This case highlights the importance of recognizing Liddle syndrome as a potential diagnosis in young patients with severe hypertension and electrolyte abnormalities.

Discussion: Liddle syndrome should be considered in young patients presenting with severe hypertension, hypokalemia, and a normal or low aldosterone–renin ratio.

Conclusion: Early recognition is critical, as its presentation can mimic other hypertensive disorders and may lead to serious complications such as myocardial injury. A therapeutic trial of ENaC inhibition with amiloride can aid diagnosis when genetic testing is not feasible. Prompt ENaC blockade not only normalizes blood pressure and electrolytes but also prevents long-term cardiovascular and renal damage. Ongoing follow-up and family screening remain essential components of long-term management.

KEYWORDS: Liddle syndrome; Early-onset hypertension; Hypertensive emergency; Myocardial injury; Hypokalemia; Metabolic alkalosis.

PG-PP-25 – Compliance With Hand Hygiene Practices Among Dental Healthcare Workers: A Clinical Audit

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Background & Objectives: Hand hygiene is recognized as the most effective measure for preventing healthcare-associated infections

and reducing cross-transmission of pathogens in clinical settings. Dental healthcare workers frequently interact with patients and contaminated surfaces, making adherence to hand hygiene practices essential for infection control. This study aimed to assess the awareness, knowledge, and compliance with recommended hand hygiene practices among dental healthcare personnel.

Methods: A cross-sectional clinical audit was conducted among 32 dental healthcare workers including house officers, residents, and dental assistants. Data were collected using a structured questionnaire assessing knowledge of hand hygiene guidelines, routine practices before and after patient contact, training exposure, and institutional monitoring.

Results: Descriptive analysis including frequency distribution and Pareto charting was performed to identify key compliance patterns. The results demonstrated that all participants (100%) reported awareness of standard hand hygiene guidelines. However, knowledge regarding the minimum recommended duration for alcohol-based hand rub varied, with 62.5% correctly identifying 20 seconds. Regarding clinical practice, 43.8% of participants reported always performing hand hygiene before every patient, while others reported performing it often or sometimes. Compliance was higher after glove removal, with 75% reporting always practicing hand hygiene. The majority of respondents (84.4%) maintained short and clean nails and 75% had received infection control training within the previous year. Despite this, only 15.6% reported regular compliance audits within their departments.

Conclusion: These findings indicate that while awareness of hand hygiene guidelines is high among dental healthcare workers, consistent adherence to recommended practices remains suboptimal. Strengthening institutional monitoring, conducting regular compliance audits, and reinforcing infection

control training programs may improve adherence to hand hygiene protocols and enhance patient safety within dental healthcare settings.

Keywords: Hand hygiene, Infection control, Dental healthcare workers, Clinical audit, Compliance, Patient safety

PG-PP-26 – Compliance With Personal Protective Equipment Use Among Dental House Officers: A Clinical Audit

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Background & Objectives: Proper use of personal protective equipment (PPE) is a fundamental component of infection control in dental practice, helping to prevent cross-infection between healthcare professionals and patients. Dental house officers are routinely exposed to biological hazards during clinical procedures, making adherence to PPE protocols essential. This clinical audit aimed to evaluate compliance with PPE usage, assess awareness of institutional infection control guidelines, and identify barriers affecting PPE adherence among dental house officers.

Methods: A cross-sectional survey was conducted using a structured questionnaire distributed among dental house officers working in a tertiary care dental hospital. The questionnaire assessed routine PPE practices, awareness of institutional guidelines, training related to PPE usage, and perceived barriers to compliance.

Results: Data were analyzed using SPSS software, and descriptive statistics including frequencies and percentages were calculated. A total of 31 dental house officers participated in the study, with females representing the majority of respondents. Most participants

reported always wearing gloves during dental procedures and regularly using surgical masks while treating patients, indicating good compliance with basic protective measures. However, the use of protective eyewear was comparatively low, suggesting incomplete adherence to recommended PPE protocols. The majority of participants were aware of institutional infection control guidelines and had received formal training regarding PPE usage. The most commonly reported barrier to PPE compliance was unavailability of PPE, followed by lack of awareness, forgetfulness, and discomfort while using protective equipment.

Conclusion: These findings suggest that although compliance with certain PPE measures is satisfactory, improvements are required in the consistent use of all recommended protective equipment. Ensuring adequate availability of PPE and reinforcing infection control training programs may enhance compliance and promote safer clinical practices in dental healthcare settings.

Keywords: personal protective equipment, dental house officers, infection control, clinical audit, occupational safety, dental practice

PG-PP-27 – Correlation Between Bizygomatic Width And Mesiodistal Width Of Maxillary Right Central Incisor In Patients Visiting A Tertiary Care Hospital

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Background and Objective: The purpose of this study was to evaluate Berry's biometric ratio method for the selection of maxillary central incisor in patients visiting a tertiary care hospital of Khyber Pakhtunkhwa. The researchers wanted to evaluate whether 1:16 between right central incisor width (CIW) and bizygomatic width (BZW) exist in our region

or the ratio variate according to geographic and ethnic differences.

Method: A cross sectional analytical study was performed on 83 patients. All patients belonging to Khyber Pakhtunkhwa having all permanent maxillary anterior teeth between the age of 18 to 30 years were included. Each subject was seated in the dental chair and two points were marked on the zygomas one and a half inch posterior to the lateral corner of the eye. This distance was measured with a digital Vernier caliper. The mesiodistal width of the maxillary right central incisor was measured with the help of a digital Vernier caliper.

Results: In this study the mean BZW was 132.196 ± 5.65 mm and the mean right CIW was 8.036 ± 0.62 mm. Pearson's correlation coefficient showed moderate positive correlation between mean BZW and mean CIW ($r=0.443, P=0.000$). There was a moderate positive correlation between right CIW and BZW in the age range of 18 to 25 yrs as well as between 26 and 30 yrs. Male gender was dominant (61.4%). Pearson's correlation coefficient (r) for BZW and right CIW in males showed a strong positive correlation ($r=0.592, P=0.000$) whereas it showed a weak positive correlation in females.

Conclusion: The current study shows a positive correlation between right CIW and BZW as proposed by Berry's biometric ratio method and so it can be used as a guide for the selection of maxillary central incisors in the target population of KPK. It can be used in the field of prosthodontics, restorative, implant and orthodontic dentistry to achieve a favorable balance of teeth to the surrounding facial structures.

Keywords: bizygomatic width, right central incisor width, biometric ratio.

PG-PP-28 – Correlation Between Bizygomatic Width And Mesiodistal Width

Of Maxillary Right Central Incisor In Patients Visiting A Tertiary Care Hospital

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Background And Objective: The purpose of this study was to evaluate Berry's biometric ratio method for the selection of maxillary central incisor in patients visiting a tertiary care hospital of Khyber Pakhtunkhwa. The researchers wanted to evaluate whether 1:16 between right central incisor width (CIW) and bizygomatic width (BZW) exist in our region or the ratio variate according to geographic and ethnic differences.

Method: A cross sectional analytical study was performed on 83 patients. All patients belonging to Khyber Pakhtunkhwa having all permanent maxillary anterior teeth between the age of 18 to 30 years were included. Each subject was seated in the dental chair and two points were marked on the zygomas one and a half inch posterior to the lateral corner of the eye. This distance was measured with a digital Vernier caliper. The mesiodistal width of the maxillary right central incisor was measured with the help of a digital Vernier caliper.

Results: In this study the mean BZW was 132.196 ± 5.65 mm and the mean right CIW was 8.036 ± 0.62 mm. Pearson's coorelation coefficient showed moderate positive coorelation between mean BZW and mean CIW ($r=0.443, P=0.000$). There was a moderate positive coorelation between right CIW and BZW in the age range of 18 to 25 yrs as well as between 26 and 30 yrs. Male gender was dominant (61.4%). Pearson's coorelation coefficient (r) for BZW and right CIW in males showed a strong positive coorelation ($r=0.592, P=0.000$) whereas it showed a weak positive

coorelation in females.

Conclusion: The current study shows a positive coorelation between right CIW and BZW as proposed by Berry's biometric ratio method and so it can be used as a guide for the selection of maxillary central incisors in the target population of KPK. It can be used in the field of prosthodontics, restorative, implant and orthodontic dentistry to achieve a favorable balance of teeth to the surrounding facial structures.

Keywords: bizygomatic width, right central incisor width, biometric ratio.

PG-PP-29 – Dental Management Of Autistic Patients: A Narrative Review

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Background & Objectives: Autism spectrum disorder (ASD) has become an increasing global health concern due to its rising prevalence and the complex behavioral, sensory, and communication challenges associated with affected individuals. These factors significantly complicate routine dental care and contribute to poorer oral health outcomes in autistic patients. This narrative review aimed to explore recent systematic reviews and meta-analyses on the dental management of autistic patients, with the objective of identifying existing management strategies, evidence gaps, and directions for future clinical research.

Methods: A comprehensive literature search was conducted using PubMed, Cochrane Library, Embase, and Google Scholar for studies published within the last five years. The search utilized the keywords autism, autistic, dental management, and dental treatment. Only

English-language full-text articles were included. Quality appraisal of the selected reviews was performed using the QualSyst tool, while thematic synthesis and gap analysis were conducted using NVivo software.

Results: The narrative synthesis revealed four major themes influencing dental care for autistic patients: clinical complexity due to behavioral barriers, behavioral optimization combined with innovative dental strategies, dental management under conscious sedation and general anesthesia, and the importance of integrated multidisciplinary care. Gap analysis identified deficiencies related to limited high-quality evidence, methodological inconsistencies, inadequate evaluation of intervention effectiveness, and a lack of standardized long-term clinical guidelines.

Conclusion: Effective dental management of autistic patients requires a flexible, patient-centered approach integrating behavioral, pharmacological, and innovative treatment strategies. There is a critical need for standardized, long-term, multidisciplinary research to establish reliable clinical guidelines and improve oral healthcare outcomes for individuals with autism spectrum disorder.

Keywords: Autism spectrum disorder, Autistic patients, Dental management, Behavioral dentistry, Sedation dentistry

PG-PP-30 – Diagnostic Accuracy Of Modified Alvarado Score And Fenyo-Lindberg Scoring In Patients With Acute Appendicitis Keeping Histopathology As Gold Standard

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Background & Objective: Acute appendicitis has a high prevalence and requires rapid and

accurate diagnosis to confirm or exclude perforation. Sometimes, clinical diagnosis remains difficult, both in the pediatric and adult populations, as the presentation is often atypical. Therefore, many scoring systems have been developed for the proper diagnosis of acute appendicitis to decrease negative appendectomy rates. Two popular scoring systems include the Modified Alvarado Scoring (MAS) and Fenyo-Lindberg score (FLS). This study will provide us with updates on the validity of MAS and FLS as quick techniques for the diagnosis of appendicitis in our population. To determine the diagnostic accuracy of the modified Alvarado and Fenyo-Lindberg scores in patients with acute appendicitis, using histopathology as the gold standard.

Materials and Methods: Through a cross-sectional study design in the Department of Surgery, Lady Reading Hospital, Peshawar, a total of 245 patients suspected of having acute appendicitis were subjected to postoperative assessment of MAS and FL scoring and histopathology for acute appendicitis.

Results: The mean age of the sample was 35.2 + 9.3 years. 55.1% of the sample, 55.1% were male and 44.9% were female gender. The accuracy of MAS was 84.9%, and the accuracy of the FL score was 77.5%. This shows that the MAS score was better than the FL score.

Conclusion: MAS is highly sensitive and specific compared to FL score, with greater accuracy for the detection of acute appendicitis.

Key Words: Acute appendicitis, total leucocyte count, histopathology, modified Alvarado score, Fenyo-Lindberg scoring

PG-PP-31 – Double-Balloon Versus Spiral Enteroscopy For Small Bowel Disorders: A Systematic Review And Meta-Analysis

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Background & Objectives: Diagnosing small bowel disorders can be challenging due to the length of the intestine and its difficult accessibility. Device-assisted enteroscopy, which includes techniques such as double-balloon enteroscopy (DBE) and spiral enteroscopy (SE), allows for both diagnostic and therapeutic procedures.

Methods: This systematic review and meta-analysis aimed to compare the clinical outcomes of patients with small bowel disorders who underwent DBE and SE. The outcomes evaluated included diagnostic yield, procedural metrics, and complications. PubMed, Embase, and Cochrane databases were systematically searched using relevant keywords from inception until October 2025. Five studies were included after the final screening.

Results: Outcomes were reported as diagnostic yield, time to reach small bowel, total procedure time, complications and Interstudy heterogeneity was assessed using I²

and X² statistics and depth of small bowel insertion. Statistical calculations were performed using Review Manager 5.4.1 with a p-value of < 0.05 indicating statistical significance. Five studies, including 159 patients (DBE: 80; SE: 79), were analyzed. Diagnostic yield was comparable between DBE and SE (RR 1.00, 95% CI 0.68–1.47). DBE demonstrated greater depth of insertion (MD 65.52 cm, 95% CI 40.80–90.24) and lower complication rates (RR 0.37, 95% CI 0.16–0.84), but required more extended time to reach the small bowel (MD 20.49 min) and longer total procedure duration (MD 13.08 min). DBE and SE exhibit similar levels of diagnostic accuracy. While DBE allows for deeper investigations and experiences fewer complications, SE is quicker.

Conclusion: These findings support the custom selection of enteroscopy based on procedural goals, patient safety, and anatomical considerations.

Keywords: Double-balloon enteroscopy, Spiral enteroscopy, Small bowel disorders, Device-assisted enteroscopy, Diagnostic yield

PG-PP-32 – Effectiveness Of Blood Flow Restriction Therapy On Patellofemoral Pain: A Systematic Review Of RCTs

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Background & Objectives: Patellofemoral or anterior knee pain is one of the leading causes of poor health-related quality of life and lower physical activity levels. Guidelines based on the current literature pinpoint the importance of high or low blood flow restriction therapy combined with or without the combination of conventional therapies like NMES, IASTM, and strengthening of muscles to

alleviate the pain in populations with Patellofemoral pain. Blood flow restriction is a proven method to enhance neuromuscular improvements in various groups and environments. It can be used on its own in both upper and lower-body workouts, combined with electro stimulation, aerobic exercises, or resistance training. This systematic review aimed to find the effectiveness of blood flow restriction on Patellofemoral pain registered .

Methods: A systematic review was conducted to review relevant randomized controlled trial studies through databases Google Scholar, EBSCO, Science Direct, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), published articles between 2014 -2024 whose full text was available. Review comprised of 5 studies with the use Cochrane risk of bias tool, and the quality of the studies was evaluated.

Results: These results collectively suggest that blood flow restriction training is effective in alleviating pain across various contexts and time frames. The systematic review comprised a limited number of RCTs and an even smaller number of participants, which made generalization of findings challenging. The review represents the independent work of the authors.

Conclusion: BFR could be a beneficial treatment for alleviating the pain in Patellofemoral pain. Further, more research is required to develop standardized protocols, metrics, and to draw conclusive findings and to assess its safety in treating patellofemoral pain with using blood flow restriction therapy the effectiveness of the Kinect Xbox 360 on diabetic peripheral neuropathy, and serve as a foundational reference for future investigations.

Keywords: Patellofemoral pain, Blood flow restriction

PG-PP-33 – Efficacy And Safety Of Intravenous Iron Sucrose In Children Treated For Iron Deficiency Anemia

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Background & Objectives: Mostly cases of iron deficiency anemia caused by childhood malnutrition are managed with oral iron supplements; however, intravenous (IV) iron is an option for children with severe iron deficiency anemia who struggle with oral absorption of iron supplementation. The present study aimed to investigate the efficacy and safety of intravenous (IV) iron sucrose in children treated for iron deficiency anemia.

Methods: This experimental research was conducted by administering intravenous iron sucrose to patients aged 3 months to 12 years presenting with iron deficiency anemia in a controlled setting of the Paediatrics Intensive Care Unit, CMH Peshawar. Routine blood screening including hemoglobin, serum ferritin, MCV, MCHC, HCT, and RBC count was performed and recorded prior to IV iron therapy. IV iron sucrose was given at a maximum dose of 7 mg/kg every 3 to 7 days (not exceeding 300 mg per dose) until the total calculated dose was completed, and patients were followed up with repeat laboratory investigations one month after the last dose.

Results: Demographics, baseline characteristics, and laboratory parameters including hemoglobin and ferritin levels were recorded, and data were analyzed using SPSS version 26. The overall mean age was 5.36 ± 4.56 years, with nutritional iron deprivation being the most prevalent cause of iron deficiency anemia; there were 41 (53.9%) males and 35 (45.1%) females. The mean hemoglobin level increased from 7.21 ± 0.74 g/dL at baseline to 11.86 ± 0.76 g/dL after 30 days, while mean corpuscular volume increased from 64.83 ± 4.49 fL to 89.16 ± 7.69

fL, and ferritin levels showed a significant rise from 6.89 ± 4.45 $\mu\text{g/L}$ before treatment to 48.59 ± 4.79 $\mu\text{g/L}$ after treatment.

Conclusion: This study showed that the administration of IV iron sucrose is effective, safe, and results in significant improvement in iron stores and hemoglobin levels in children with iron deficiency anemia.

KEYWORDS: Iron deficiency anemia, Intravenous sucrose, Children, Efficacy

PG-PP-34 – Efficacy Of Methylprednisolone In Children With Acute Myocarditis

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Background & Objectives: Acute myocarditis is an inflammatory disease of the myocardium that can cause ventricular dysfunction and life-threatening complications in children. Most cases are viral in origin, and management is largely supportive. The role of corticosteroids remains controversial. This study aimed to evaluate the efficacy and short-term safety of methylprednisolone in children with acute myocarditis.

Methods: A quasi-experimental study was conducted in the Department of Pediatrics, Lady Reading Hospital–MTI, Peshawar, over six months. Ninety-eight children aged 2–15 years diagnosed with acute myocarditis were enrolled using non-probability consecutive sampling. Eligible patients received intravenous methylprednisolone at 10 mg/kg, followed by oral therapy as clinically indicated. Baseline demographic and clinical data were collected, and patients were monitored for clinical and echocardiographic improvement according to predefined criteria.

Results: Data were analyzed using SPSS version 29; qualitative variables were expressed as frequencies and percentages, and quantitative variables as mean $\pm$ SD. Post-stratification chi-square test was applied, with $p \leq 0.05$ considered statistically significant.

Methylprednisolone administration led to significant clinical and echocardiographic improvement in most patients. Stratified analysis showed no statistically significant difference in efficacy across age and gender groups.

conclusion, methylprednisolone appears to be an effective therapeutic option for children with acute myocarditis, improving short-term clinical outcomes. Further randomized controlled trials are recommended to validate these findings.

Keywords: methylprednisolone, acute myocarditis

PG-PP-35 – Efficacy Of Postpartum Intrauterine Copper T Device In Women Delivering At A Tertiary Care Hospital In Peshawar

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Background & Objectives: Postpartum contraception plays a critical role in preventing unintended pregnancies and improving maternal and child health outcomes, particularly in low-resource settings with high fertility rates. Intrauterine contraceptive devices are among the most effective long-acting reversible contraceptive methods, and the Copper T 380A has demonstrated high efficacy and safety. This study aimed to determine the efficacy of postpartum intrauterine Copper T device insertion among women delivering at a tertiary care hospital in Peshawar.

Methods: A descriptive case series was conducted in the Department of Obstetrics and Gynaecology, Hayatabad Medical Complex, from November 2024 to May 2025. A total of 86 women aged 20–40 years who consented to postpartum Copper T 380A insertion were enrolled. Women with puerperal sepsis, uterine

malformations, large fibroids, postpartum hemorrhage, or those undergoing emergency hysterectomy were excluded.

Results: The Copper T 380A device was inserted in the immediate postpartum period by the researcher, and participants were followed up at six weeks to assess efficacy, defined as device retention without expulsion and willingness to continue use. The mean age of participants was 31.14 ± 4.16 years, mean parity was 3.87 ± 0.93 , and mean body mass index was 28.97 ± 2.75 kg/m². At six-week follow-up, the intrauterine Copper T device was effective in 72 women (83.72%), with no expulsion and satisfactory continuation.

Conclusion: The findings indicate that postpartum insertion of the Copper T 380A is a highly effective contraceptive method. Incorporating structured antenatal counseling and promoting postpartum intrauterine device use may significantly reduce unintended pregnancies and improve family planning outcomes in the local population.

Keywords: Intrauterine contraceptive device, Postpartum contraception, Copper T 380A, Family planning, Contraceptive efficacy

PG-PP-36 – Examining The Predictive Role Of Rumination In Sleep Disturbance And Daytime Fatigue Among Adults In Pakistan

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Background & Objectives: Rumination refers to repetitive negative thinking and has been linked to poor sleep quality and increased daytime fatigue. While international research highlights rumination as an important cognitive contributor to sleep disturbance, evidence from low- and middle-income countries such as Pakistan remains limited. In the context of rising psychosocial stressors and limited

mental health resources, identifying cognitive predictors of sleep-related problems among Pakistani adults is important.

This study aimed to examine whether rumination predicts sleep disturbance and daytime fatigue among adults in Pakistan after controlling for depressive symptoms and demographic factors.

Methods: A cross-sectional quantitative study was conducted among 150 adults aged 18–60 years residing in urban and peri-urban areas of Pakistan. Participants completed standardized self-report measures, including the Ruminative Response Scale (RRS), Pittsburgh Sleep Quality Index (PSQI), Fatigue Severity Scale (FSS), and Patient Health Questionnaire-9 (PHQ-9). Data were analyzed using descriptive statistics, Pearson correlation, and multiple linear regression analyses in SPSS.

Results showed that rumination was significantly and positively associated with both sleep disturbance and daytime fatigue. Higher rumination scores significantly predicted poorer sleep quality and greater fatigue even after adjusting for depressive symptoms, age, gender, and employment status. Rumination contributed unique variance to both outcomes.

Conclusion, rumination is an important cognitive predictor of sleep disturbance and daytime fatigue among Pakistani adults. Addressing ruminative thinking through psychological interventions may help improve sleep quality and daytime functioning in resource-limited settings.

Keywords: Rumination, Sleep Disturbance, Daytime Fatigue, Depression, Pakistan

PG-PP-37 – Experiential Knowledge And Symptom Burden Management Approaches Among Individuals With Chronic Cardiovascular Disorders: A Systematic Review And Meta-Synthesis

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Background & Objective: Globally, an estimated 523 million individuals are living with chronic cardiovascular disorders (CVDs). These individuals experience an increased symptom burden, leading to reduced quality of life. It is critical to better understand the experiential knowledge and symptom burden management of individuals living with CVDs for developing therapeutic interventions to improve their quality of life. The purpose of this metasynthesis was to synthesize qualitative studies about experiences of symptom burden management and experiential knowledge of individuals with CVDs.

Methods: Literature search was completed in five databases: PubMed, Web of Science, Scopus, CINAHL, and Pro Quest Central. Additional search was completed in two grey databases. A total of 43 studies were included, published from January 2000 to January 2025. The quality of included studies was assessed, and the data was synthesized using thematic synthesis. The review protocol was registered on PROPERO (CRD42023461038).

Results: Four analytical themes were generated: a) Self-empowerment through

building confidence, developing independence, and informed choices for sustaining health, b) strengthening physical, emotional, and mental wellbeing and fostering strong social support networks, c) striving for collective learning, mutual support, and fair access for all, and d) collective impact of family, culture, and identity, on sharpening health.

Conclusions: This metasynthesis contributes significantly to understanding the complex interplay of individual, systemic, and sociocultural factors among such individuals and stress for further research to inform clinical practice and policy development and developing interventions to improve their quality of life.

Keywords: Symptom burden, experiential knowledge, chronic cardiovascular disorders, self-management, self-care, self-efficacy.

PG-PP-38 – Factors Affecting Knowledge And Practice Regarding Foot Self-Care Among Diabetic Patients: A Questionnaire-Based Survey

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Background and Objectives: We conducted a cross-sectional study to assess the prevalence of foot self-care knowledge and practice among diabetics, to find a correlation between knowledge and practice scores and to find their association with sociodemographic factors.

Methods: We used a self-administered questionnaire to evaluate the knowledge and practice regarding foot care of 384 diabetic patients. Descriptive data was analysed via means, standard deviations, absolute frequencies, and percentages. Knowledge and practice were categorized into good or poor based on the median score as the cut-off point.

The chi-square test evaluated the relationship between the independent and dependent variables with a p-value less than 0.05 as significant.

Results: Most (75.3%) had poor knowledge of the disease. Good practice was observed in 59.6% individuals. While 1.6% of individuals did not wash their feet daily, a significant majority, 98.4%, maintained a daily washing routine. Pearson's correlation showed a significant moderate positive relationship between knowledge and practice scores ($r=0.36$, $p<0.001$). The good knowledge scores were found to be strongly statistically associated with the participants' age ($P=0.000$), educational level ($P=0.00$), occupation ($P=0.000$), history of foot ulcer ($P=0.000$), current foot ulcer ($P=0.001$) and type of diabetic treatment ($P=0.005$). Good practice scores were found to be strongly statistically associated with education level ($P=0.000$), occupation ($P=0.000$), history of foot ulcer ($P=0.010$) and type of diabetes treatment ($P=0.026$).

Conclusion: Majority of the individuals lacked adequate knowledge about diabetic foot care. Despite the poor knowledge levels, foot care practice was relatively better.

Keywords; Diabetes, foot ulcer, knowledge, practice

PG-PP-39 – Frequency And Risk Factors Of Helicobacter Pylori Infection In Patients With Dyspepsia In Mardan Medical Complex, Mardan

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Background & Objectives: Dyspepsia indicates a collection of indicators associated with digestive system, especially localized in epigastric region. Common manifestations include discomfort, emesis, acid reflux and

burping. Dyspepsia may be classified into two types: organic as well as functional. Dyspepsia is a widespread gastric condition that could be linked to Helicobacter pylori (H. pylori) infection^{1, 2}. H pylori is a gram-negative bacterium which inhabits gastric mucosa as well as is recognized as a significant contributor to variety of gastrointestinal disorders. H. pylori infection is frequently related to dyspepsia symptoms, and studies have indicated that eradication of H. pylori results in a decline in these symptoms. To determine the frequency of H pylori infection in patients with dyspepsia at Mardan.

Methods: Cross Sectional Study Estimation of sample size is achieved using the Openepi web based sample size calculator. Keeping the frequency of 45%⁵ of H. pylori infection within dyspeptic cases. Absolute precision 8%, and confidence level 95%. Estimated sample size is 149. Non-probability

Results: Data will be recorded and analysed using SPSS 23 program. Categorical variables including gender, H pylori infection, risk factors, socioeconomic background, residence, educational level, and employment status will be reported in terms of frequencies and percentages. Shapiro Wilk test will be employed to assess data normality. Numerical variables including age and BMI will be reported in terms of Mean $\pm$ SD or Median IQR. H pylori infection and risk factors will be stratified by gender, age, BMI, socioeconomic background, residence, educational level and employment status to see the effect modifiers. Post stratification chi square or fisher's exact test will be applied at 5% level of significance.

Conclusion: H pylori is a gram-negative bacterium which inhabits gastric mucosa as well as is recognized as a significant

contributor to variety of gastrointestinal disorders. H. pylori infection is frequently related to dyspepsia symptoms, and studies have indicated that eradication of H. pylori results in a decline in these symptoms.

Keywords: H pylori, gram-negative bacterium, dyspepsia

PG-PP-40 – Frequency Of Gingival Recession In Patients Undergoing Subgingival Margin Placement

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Background & Objectives: Gingival recession is defined as the apical displacement of the gingival margin associated with clinical attachment loss and is a common esthetic and functional concern in restorative dentistry. Subgingival margin placement, although reasons, may adversely affect periodontal soft tissues if biological principles are violated. The objective of this study was to determine the frequency of gingival recession in patients undergoing subgingival margin placement for full-coverage restorations.

Methods: A descriptive case series was conducted at the Department of Prosthodontics, Bacha Khan College of Dentistry, Mardan, from June to December 2021. A total of 109 patients aged 18 to 50 years, of both genders, planned for a single full-coverage restoration between the first bicuspid were included using non-probability consecutive sampling. Patients with periodontal probing depths ≤ 4 mm, adequate plaque control, and sufficient keratinized tissue were selected. Standardized tooth preparation was performed, and facial restorative margins were placed 0.5 mm subgingivally. Gingival recession was assessed

clinically according to predefined operational criteria during follow-up visits.

Results: Data were analyzed using SPSS version 23. The mean age of patients was 31.56 ± 5.86 years, and the mean duration of complaint was 4.05 ± 1.52 months. Male patients constituted 63.3% of the sample, while females comprised 36.7%. Gingival recession was observed in 11% of patients following subgingival margin placement. A statistically significant association was noted between gingival recession and longer duration of complaint, whereas age and gender showed no significant association.

Conclusion: The findings of this study indicate that gingival recession occurs in a notable proportion of patients undergoing subgingival margin placement and represents an important esthetic concern. Careful case selection, precise restorative techniques, and strict adherence to periodontal principles are essential to minimize soft tissue complications and improve long-term restorative outcomes.

Keywords: Gingival recession, Subgingival margin placement, Esthetics, Full-coverage restoration, Periodontal health

PG-PP-41 – Frequency Of Left Bundle Branch Block In Patients With Coronary Artery Disease At Hayatabad Medical Complex, Peshawar

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Background & Objective: To determine the frequency and clinical significance of left bundle branch block (LBBB) in patients with coronary artery disease (CAD) admitted to the Department of Cardiology, Hayatabad Medical Complex, Peshawar.

Method: A prospective cross-sectional study was conducted over six months, from 18th

April 2025 to 18th October 2025, including 101 patients aged 40 to 75 years with angiographically confirmed CAD. Consecutive sampling was used to enroll participants. Clinical data were collected through structured proformas, and electrocardiographic evaluation was used to identify LBBB, defined as QRS duration >120 ms with characteristic morphology. Data were analyzed using SPSS version 26. Descriptive statistics summarized demographics, and chi-square and t-tests assessed associations, while logistic regression identified predictors of heart failure hospitalization.

Results: Of the 101 patients, 55 were males (54.5%) and 46 were females (45.5%), with a mean age of 58.4 ± 8.3 years. The prevalence of LBBB was 48.5% ($n=49$). Hypertension was found in 53.5% and diabetes in 48.5% of patients. Patients with LBBB were significantly older ($p=0.015$) and had higher BMI ($p=0.029$). Chi-square analysis showed a significant association between LBBB and hypertension ($p=0.023$). Logistic regression revealed LBBB ($OR=2.12$, $p=0.027$) and hypertension ($OR=1.93$, $p=0.034$) as independent predictors of heart failure hospitalization.

Conclusion: Nearly half of CAD patients exhibited LBBB, which was significantly associated with hypertension, older age, and increased risk of heart failure hospitalization. Early recognition of LBBB may improve patient management and prognosis. Larger multicenter studies are recommended to validate these findings

Keywords: Left Bundle Branch Block; Coronary Artery Disease; Heart Failure; Electrocardiography

PG-PP-42 – Frequency of Neonatal Jaundice In Polycythemic Infants Admitted To The Intensive Care Unit: A Cross-Sectional Study

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Background & Objective: Neonatal jaundice, characterized by yellow discoloration of the skin and sclera due to bilirubin deposition, remains one of the most common neonatal problems. Polycythemia in neonates increases red blood cell mass, leading to accelerated breakdown and hyperbilirubinemia, which can progress to severe complications such as kernicterus. To determine the frequency of neonatal jaundice among polycythemic infants admitted to the neonatal intensive care unit (NICU).

Methods: A cross-sectional study was conducted at the Department of Pediatrics, Hayatabad Medical Complex, Peshawar, from July 2020 to January 2021. A non-probability consecutive sampling technique was used, and a total of 167 neonates were enrolled based on WHO sample size calculation. Inclusion criteria were neonates less than one month old, gestational age between 31–40 weeks, weight 1500–4600 g, and diagnosed with polycythemia. Neonates with blood disorders, syndromic features, or jaundice developing after three weeks were excluded. Data were collected through structured questionnaires, clinical assessment, and laboratory investigations. Analysis was done using SPSS v20.

Results: Among 167, 65.7% were male and 35.3% female, with a mean age of 14.5 ± 7.22 days. Neonatal jaundice was present in 46.7% infants, and 26.9% developed kernicterus. Jaundice was significantly associated with male gender, neonatal age, elevated serum bilirubin, obstetric complications, birth asphyxia, and cephalohematoma ($p < 0.05$).

Conclusion: Nearly half of polycythemic NICU neonates developed jaundice, with some progressing to kernicterus, underscoring the need for early screening and intervention in infants with key risk factors.

Keywords: Bilirubin, Birth asphyxia, Kernicterus, Neonatal jaundice, Polycythemia.

PG-PP-43 – Frequency Of Positive Blood Culture And Pathogens In Febrile Patients Admitted At Northwest General Hospital

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Background & Objectives: Febrile illness is a common cause of hospital admission in Pakistan, and early detection of bloodstream infections is crucial for appropriate antimicrobial therapy and improved clinical outcomes. This study aimed to determine the frequency of positive blood cultures and identify common bacterial pathogens among febrile adult inpatients at a tertiary care hospital.

Method: A cross-sectional study was conducted in the Department of General Medicine, Northwest General Hospital & Research Center, Peshawar, from January to June 2025. A total of 129 consecutive febrile patients aged 18–90 years were enrolled. Patients with prior antibiotic use within 48 hours, immunocompromised states, or localized infections were excluded. Blood samples were collected aseptically and processed using standard microbiological techniques. Pathogen identification was performed using MALDI-TOF mass spectrometry, and antibiotic susceptibility patterns were recorded. Statistical analysis was performed using SPSS version 25.

Results: Of the 129 patients, 50 (38.8%) had positive blood cultures. Enterobacteriaceae were the most frequently isolated organisms (18.6%), followed by Gram-positive cocci

(15.5%) and non-fermenting Gram-negative rods (4.7%). Carbapenems (31%) were the most commonly prescribed antibiotics, followed by cephalosporins (27.9%) and fluoroquinolones (15.5%). Clinical improvement was observed in 40 (80%) culture-positive patients, while 10 (20%) patients expired. Mortality was higher among infections caused by Gram-positive cocci and non-fermenting Gram-negative rods.

Conclusion: This study demonstrates a substantial yield of blood cultures in febrile hospitalized patients, with a predominance of Gram-negative pathogens. Routine blood culture testing can guide rational empirical therapy and supports the need for strengthened antimicrobial stewardship to reduce resistance and improve patient outcomes.

Keywords: Febrile illness, blood culture, bacteremia, antimicrobial stewardship, Pakistan.

PG-PP-44 – Global Seasonal Trends Of Rotavirus Cases In The Post-Vaccination Era: A Systematic Review And Meta-Analysis

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Background & Objectives: Rotavirus remains a leading cause of severe acute gastroenteritis and mortality among children under five years, particularly in low- and middle-income countries. Since the introduction of rotavirus vaccines in 2006, shifts in seasonal transmission patterns have been increasingly reported. This systematic review and meta-analysis aimed to evaluate global seasonal trends of rotavirus in the post-vaccination era and assess the impact of immunization on seasonality.

Methods: Following PRISMA guidelines, electronic databases including PubMed, Scopus, Embase, and Web of Science, along with grey literature, were searched for studies published after 2014 reporting post-vaccination seasonality using observational, surveillance, or hospital-based data. Data on peak timing, duration, intensity, vaccination coverage, and climate zones were extracted.

Results: A random-effects meta-analysis was conducted. Nine studies met inclusion criteria. In North America, seasonal peaks shifted to late winter and were shortened by nearly half. European countries demonstrated peak delays of 4–7 weeks. In Latin America, Argentina maintained winter peaks with reduced intensity, whereas Brazil exhibited a shift toward summer patterns. In Kenya, bimodal peaks persisted with intensity reductions of up to 82%. Tropical regions showed less defined peaks but significant case reductions. The pooled analysis demonstrated a 64% reduction in rotavirus risk following vaccination (RR = 0.36; 95% CI: 0.31–0.41) with low-to-moderate heterogeneity. Higher vaccine coverage was associated with greater reductions in incidence and altered seasonal patterns, including biennial transmission in some high-coverage settings.

Conclusion: These findings highlight substantial global shifts in rotavirus seasonality

attributable to vaccination and underscore the importance of sustained high coverage and seasonally informed immunization strategies.

Keywords: Rotavirus, seasonality, vaccination, meta-analysis, gastroenteritis, children under five

PG-PP-45 – Impact Of Streptokinase And Guideline-Directed Medical Therapy On ST Segment Resolution And Clinical Outcomes In STEMI Patients

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Background & Objectives: Acute ST-elevation myocardial infarction (STEMI) is a critical cardiovascular emergency where early reperfusion therapy reduces myocardial injury and mortality. Although primary percutaneous coronary intervention (PCI) is preferred in high-resource settings, fibrinolytic therapy, especially streptokinase, remains widely used, often combined with guideline-directed medical therapy (GDMT) to achieve reperfusion. However, the impact of this combination on ST segment resolution (STR), a validated noninvasive marker of successful reperfusion, has not been comprehensively quantified. STR at 90 minutes post-fibrinolysis is strongly associated with microvascular reperfusion and better clinical outcomes.

Methods: In this prospective observational study, we evaluated 350 consecutive STEMI patients treated with intravenous streptokinase and GDMT within 12 hours of symptom onset.

Results: The primary outcome was the proportion of patients achieving $\geq 70\%$ STR on 12-lead ECG at 90 minutes, with secondary outcomes including in-hospital mortality, 30-day major adverse cardiac events (MACE), and

symptom resolution. Complete STR was observed in 69% of patients, significantly associated with earlier door-to-needle time (<2 hours), optimal GDMT initiation, and lower baseline infarct size ($p<0.01$). Patients with complete STR had significantly lower in-hospital mortality (3% vs. 11%, $p<0.001$) and 30-day MACE (5% vs. 18%, $p<0.001$) compared to those with incomplete STR.

Conclusion: Our findings confirm that combining streptokinase with GDMT improves early STR and is associated with superior short-term clinical outcomes, underscoring the continued relevance of fibrinolytic strategies integrated with modern medical therapy in settings where PCI may not be promptly available. Future randomized controlled trials are warranted to further delineate optimal pharmacoinvasive timing and long-term outcomes of this combined reperfusion strategy.

Keywords: ST segment resolution, streptokinase, guideline-directed medical therapy, myocardial reperfusion, clinical outcomes.

PG-PP-46 – Incidence And Predictors Of Postoperative Joint Stiffness Following Surgical Fixation: A Prospective Observational Study At A Tertiary Care Teaching Hospital In Pakistan

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Background & Objectives: Postoperative joint stiffness is a frequent and disabling complication following surgical fixation of fractures and can significantly compromise functional recovery. Identifying its incidence and associated predictors is essential for optimizing postoperative care, particularly in resource-limited settings. This

study aimed to determine the incidence of postoperative joint stiffness and identify clinical and perioperative predictors among patients undergoing surgical fixation at a tertiary care teaching hospital in Pakistan.

Methods: A prospective observational study was conducted over a 12-month period, enrolling adult patients who underwent surgical fixation for periarticular or intra-articular fractures of the upper or lower limbs. Patients with pre-existing joint stiffness, pathological fractures, or neuromuscular disorders were excluded. Postoperative joint stiffness was defined as a reduction of at least 25% in the expected range of motion compared with the contralateral joint at 12 weeks postoperatively.

Results: Data collected included demographic variables, fracture characteristics, surgical approach, duration of immobilization, timing of physiotherapy initiation, and postoperative complications. Multivariate logistic regression analysis was used to identify independent predictors of joint stiffness. A total of 214 patients were included, with a mean age of 41.6 ± 13.2 years, and 64.0% were male. Postoperative joint stiffness was observed in 27.1% of patients at 12 weeks. Prolonged immobilization beyond three weeks, delayed initiation of physiotherapy beyond two weeks, intra-articular fracture involvement, and postoperative infection were identified as independent predictors of joint stiffness.

Conclusion: These findings indicate that postoperative joint stiffness affects over one-quarter of patients following surgical fixation. Addressing modifiable risk factors such as minimizing immobilization duration and ensuring early physiotherapy may substantially reduce stiffness and improve postoperative functional outcomes.

Keywords: Postoperative joint stiffness, Surgical fixation, Range of motion, Immobilization, Physiotherapy, Functional outcomes

PG-PP-47 – Incidentally Discovered Jejunal Neuroendocrine Tumor During Emergency Laparotomy For Massive Lower Gastrointestinal Bleeding: A Case Report

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Background & Objectives: Neuroendocrine tumors (NETs) of the small intestine are uncommon and often present with vague or nonspecific symptoms. Jejunal NETs are particularly rare and are frequently diagnosed incidentally. Massive lower gastrointestinal bleeding as a presenting feature is unusual and poses a significant diagnostic challenge, especially in emergency settings where conventional investigations may be inconclusive.

Case Presentation: A 40-year-old male presented with massive bleeding per rectum and severe anemia, with an initial hemoglobin level of 5.23 g/dL. Coagulation parameters were normal. Abdominal ultrasonography failed to localize the source of bleeding. Due to ongoing hemorrhage and hemodynamic instability, an emergency exploratory laparotomy was performed. Intra-operatively, an incidental focal mass was identified in the jejunum. Segmental jejunal resection with primary anastomosis was carried out. Histopathological examination confirmed a well-differentiated jejunal neuroendocrine tumor (WHO grade 1), with immunohistochemical positivity for synaptophysin and CAM5.2 and a low Ki-67 proliferation index of 2%.

Conclusion: This case highlights that jejunal neuroendocrine tumors, although rare, should be considered in the differential diagnosis of

obscure or massive lower gastrointestinal bleeding. Emergency surgical exploration can be both diagnostic and therapeutic when noninvasive investigations fail, potentially leading to timely management and favorable outcomes.

Keywords: Jejunal neuroendocrine tumor; Lower gastrointestinal bleeding; Emergency laparotomy; Small bowel tumor.

PG-PP-48 – Inhibition Of Necroptosis Protects Against Cisplatin-Induced Neuroinflammation And Cognitive Dysfunction In Mice: An In-Vivo And In-Silico Study Targeting RIPK1, RIPK3, And MLKL

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Background & Objective: Platinum-based chemotherapeutic agents, particularly cisplatin, are commonly associated with neurotoxicity, characterized by neuroinflammation, oxidative stress, and cognitive impairment. Despite its clinical relevance, the underlying molecular mechanisms of platinum-induced neurotoxicity remain inadequately defined. Necroptosis, a regulated form of inflammatory cell death mediated by RIPK1, RIPK3, and MLKL, has emerged as a key contributor to neuroinflammatory and neurodegenerative disorders. This study aimed to investigate the role of necroptosis in cisplatin-induced neuroinflammation and cognitive dysfunction and to evaluate the neuroprotective potential of necrostatin-1

Methods: Forty-eight male Balb/c mice were randomly divided into four groups: control, cisplatin, necrostatin-1, and cisplatin plus necrostatin-1. Cognitive performance was assessed using the Morris water maze and Y-

maze tests. Neuroinflammation and oxidative stress were evaluated by measuring pro-inflammatory cytokines and oxidative stress markers. Necroptosis-related proteins were analyzed using Western blotting and immunohistochemistry. Molecular docking and molecular dynamics simulations assessed binding affinity and stability of necrostatin-1 with necroptosis targets.

Results: Cisplatin administration caused significant cognitive deficits, increased neuroinflammatory cytokines, oxidative stress and upregulation of RIPK1, RIPK3, MLKL, and phosphorylated MLKL. Necrostatin-1 ameliorated behavioral impairment, reduced neuroinflammation and oxidative stress, and suppressed necroptosis. In silico analyses demonstrated strong and stable interactions of necrostatin-1 with RIPK1, RIPK3, and MLKL.

Conclusion: Inhibition of necroptosis confers significant neuroprotection against cisplatin-induced neurotoxicity, highlighting necroptotic pathways as promising therapeutic targets for chemotherapy-associated neuroinflammation and cognitive dysfunction.

Keywords: therapeutic, neuroinflammation, cognitive dysfunction.

PG-PP-49 – Isolation And Identification Of Various Pathogens Associated With Equipment Used In Barber Salon In Peshawar, Pakistan

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Background & Objectives: Transmission of infections in barber shops has been a persistent concern as they are considered high-risk environment for disease transmission. The aim of this study is to identify various pathogens that are associated with the barber salon equipment in Peshawar, Pakistan.

Methods: A cross-sectional study was conducted from August 16 to December 20, 2024. A total of 88 samples were collected from 22 barber salons using moistened swab sticks dipped in distilled water. The samples were transported to the laboratory within 1 hour to avoid contamination. For identification of bacteria, samples were inoculated on Blood and MacConkey agar and incubated at 37 C for 24-48 hours. After inoculation and identification based on morphological characteristics, a conventional microbiological methods like gram-staining and biochemical tests were applied for the identification of bacteria.

Results: In a total of 88 sample size, 22 samples were taken each from scissors, clippers, razors and comb. Microbial growth was seen on 78 samples and the remaining 10 samples do not show any growth on culture media. A total six bacterial isolates were identified after performing standard microbiological techniques like gram-staining and biochemical testing. The most prevalent bacteria isolated was Staph. epidermidis 32(41%) followed by Staph. Aureus 23(29.3%), Klebsiella spp 10(12.9%), Bacillus spp 8(10.3%), MRSA 4(5.1%) and Pseudomonas 1(1.3%).

Conclusion: Microorganisms like Staph. Aureus, MRSA, klebsiella spp and bacillus spp that is identified on the barber salon equipment can be a potential threat to our community as most of the barber salon operators are unaware or they do not follow any hygienic guidelines regarding antimicrobial practices due to which, harmful pathogens are present on their equipment and they are putting the environment at risk. Therefore, it is highly suggested that the salon operators should focus on disinfection techniques or antimicrobial

practices to avoid contamination and transmission of infections from their salon.

Keywords: Isolation, Pathogens, Barber salon equipment

PG-PP-50 – Knowledge, Attitude & Practices (KAP) Regarding Generic (INN) Prescribing Among Medical And Dental Trainees

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Background and Objective: Prescribing medicines by their International Non-Proprietary Name (INN) is recommended worldwide to improve access to medicines, reduce treatment costs, and promote rational drug use. Generic prescribing also improves transparency and reduces confusion caused by multiple brand names. However, knowledge level and practice of INN prescribing among healthcare trainees remains unclear. To assess the knowledge, attitudes, and prescribing practices related to generic (INN) prescribing among postgraduate medical and dental trainees.

Methods: A cross-sectional survey was conducted among postgraduate trainees and house officers using a structured self-administered questionnaire. A total of 201 participants completed the survey. Data were analyzed using IBM SPSS version 27. Descriptive statistics summarized participant characteristics and prescribing patterns. Chi-square tests assessed associations between INN prescribing practices and factors such as discipline, formal teaching, training year, and awareness of prescribing policies. A p-value <0.05 was considered statistically significant.

Results: Among respondents, 71.6% were from medical specialties and 28.4% from

dental disciplines. Most participants (79.6%) reported no formal teaching on generic prescribing, and 92.0% were unaware of national or institutional policies. While 62.2% occasionally prescribed medicines using INN, 22.9% never used generic names. Discipline was significantly associated with INN prescribing ($\chi^2 = 12.22$, $p = 0.006$), with medical trainees prescribing generically more often than dental trainees.

Conclusion: Gaps in training and awareness regarding generic prescribing exist among trainees. Strengthening education on rational drug use and improving policy awareness may encourage more consistent INN prescribing.

Keywords: knowledge, attitudes, Strengthening

PG-PP-51 – Knowledge, Attitude, And Practice of Final-Year Dental Students and House Officers Towards The Use Of Rubber Dam In Dental Procedures At A Dental Teaching Institute Of Peshawar

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Background & Objectives: The rubber dam is a fundamental instrument in dentistry that enhances isolation, infection control, and overall clinical outcomes; however, its routine use in operative and endodontic procedures remains limited. This study aimed to assess the knowledge, attitude, and practice regarding rubber dam use among final-year dental students and house officers at a dental teaching institute in Peshawar, Pakistan, and to identify barriers to its regular implementation.

Methods: A cross-sectional survey was conducted using a structured, self-administered questionnaire addressing demographic characteristics, training exposure, clinical experience, attitudes toward rubber dam use, and preferred alternative isolation methods. A pilot study was performed to refine the

questionnaire prior to data collection. The finalized survey was distributed to 145 participants, and the collected data were analyzed using SPSS version 20.

Results: Among the respondents, 72 (49.7%) were final-year dental students and 73 (50.3%) were house officers, with males comprising 69.7% of the sample. Training in rubber dam use varied, with 51.0% receiving both theoretical and clinical instruction, 37.2% receiving clinical instruction only, 10.3% receiving theoretical instruction only, and 1.4% reporting no formal training. Most participants indicated that rubber dam use was not mandatory during their clinical training. Cotton rolls and cotton rolls combined with suction were the most frequently used alternative isolation methods.

Conclusion: A majority of participants acknowledged that rubber dam use improves isolation and visibility, intended to continue its use in future clinical practice, and supported stronger institutional enforcement. Despite positive knowledge, routine clinical practice remained suboptimal.

Keywords: rubber dam, knowledge, attitude, practice, dental students, house officers

PG-PP-52 – Liddle Syndrome Presenting As Hypertensive Crisis And Myocardial Injury In A Young Male: A Case Report

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Background & Objectives: Liddle syndrome is a rare hereditary cause of early-onset, salt-sensitive, treatment-resistant hypertension characterised by increased epithelial sodium channel (ENaC) activity leading to hypertension, hypokalemia, and metabolic alkalosis. It results from missense or frameshift mutations in the SCNN1A, SCNN1B, or SCNN1G genes. Diagnosis is usually clinical, supported by a low renin, low aldosterone profile, and confirmed by genetic testing, while treatment with ENaC blockers such as amiloride is effective.

Case Presentation We report a case of a 21-year-old male who presented with severe chest pain and hypertensive emergency, with investigations showing elevated troponin, hypokalemia, and metabolic alkalosis. Normal coronary angiography excluded primary cardiac pathology, prompting evaluation for secondary hypertension. Renal Doppler was normal, and a non-elevated aldosterone–renin ratio ruled out primary hyperaldosteronism. The clinical constellation suggested Liddle syndrome, a rare cause of early-onset hypertension. A therapeutic trial of amiloride resulted in clinical and biochemical improvement. This case highlights the importance of recognizing Liddle syndrome as a potential diagnosis in young patients with severe hypertension and electrolyte abnormalities.

Conclusion: Early recognition is critical, as its presentation can mimic other hypertensive disorders and may lead to serious complications such as myocardial injury. A therapeutic trial of ENaC inhibition with amiloride can aid diagnosis when genetic testing is not feasible. Prompt ENaC blockade not only normalizes blood pressure and

electrolytes but also prevents long-term cardiovascular and renal damage. Ongoing follow-up and family screening remain essential components of long-term management.

KEYWORDS: Liddle syndrome; Early-onset hypertension; Hypertensive emergency; Myocardial injury; Hypokalemia; Metabolic alkalosis.

PG-PP-53 – Microvascular Decompression For Trigeminal Neuralgia: Efficacy And Safety

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Background & Objective:

Trigeminal neuralgia is a chronic neuropathic pain disorder characterized by recurrent electric shock-like facial pain, most commonly caused by vascular compression of the trigeminal nerve. While medical therapy is first-line management, microvascular decompression remains the most effective surgical treatment for long-term pain relief. To assess the efficacy and safety of Microvascular decompression for trigeminal neuralgia.

Methods: Forty patients were enrolled in this study, who had an age of either 18 years or greater presenting with trigeminal neuralgia. Trigeminal neuralgia was diagnosed based on International Headache Society criteria and those who failed to respond to conservative treatment. Each patient underwent a standardized Microvascular decompression procedure. Post-operatively all the patients were assessed for pain relief using the Visual Analogue Scale. Patients were monitored for post-op complications such as facial palsy, CSF leak, diplopia and nausea. Data was gathered was evaluated using SPSS 26.

Results: The mean age of the patients in our study was 43.45 ± 14.82 years. Male patients had a higher frequency (62.5%). The maxillary division (V2) was involved in 57.5% of the cases. The procedure resulted in excellent pain relief in 35 patients (87.5%) who reported complete absence of pain post-operatively. Mild and moderate pain was reported by 7.5% and 5.0% of patients, respectively. Regarding the complications, nausea occurred in 10 (25.0%) cases, diplopia in 3 cases (7.5%), cerebrospinal fluid leakage occurred in 2 cases (5.0%) and facial palsy in 1 case (2.5%).

Conclusion: Microvascular decompression for trigeminal neuralgia is an effective and safe surgical technique.

Keywords: Microvascular Decompression, Trigeminal Neuralgia, Retro mastoid Craniectomy, Pain Relief, Postoperative Complications.

PG-PP-54 – Modulation Of Gut Microbiome To Enhance Surgical Recovery: A Randomized Clinical Trial

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Background & Objectives: The human gut microbiome influences post operative recovery by modulating systemic inflammation, wound healing, and infection. Dysbiosis, caused by surgical procedures, antibiotics, dietary changes and stress is associated with poorer outcomes. This study evaluated the impact of perioperative microbiome modulation on the postoperative recovery and complications.

Methods: This randomized controlled trial enrolled 232 elective surgery patients. Participants were randomized into either an intervention group receiving probiotics (*Lactobacillus acidophilus* and *Bifidobacterium bifidum*) and a gut-friendly diet, or a control group receiving a placebo probiotic and standard care. Stool samples were collected from both groups and analyzed using next-generation sequencing.

Results: The intervention group had shorter hospital stays (3.2 ± 1.9 vs. 4.5 ± 2.5 days, $p=0.027$), lower SSI rates (5.17% vs. 12.93% , $p=0.0394$), and a lower postoperative delirium rate (6.03% vs. 15.51% , $p=0.0198$). Anastomotic leaks was comparable in both groups (5% vs. 13.6% , $p=0.6079$). Dysbiosis in the control group was marked by increased Proteobacteria and Enterococcus species, while the intervention group showed higher levels of beneficial bacteria such as Firmicutes and actinobacteria. The study revealed predictive microbial signatures, with organism such as *Lactobacillus*, *Faecalibacterium prausnitzii*, and *Bifidobacterium*, correlated with improved recovery. Conversely *Escherichia coli*, *Klebsiella*, *Pseudomonas* and Enterococcus species were associated with delayed recovery.

Conclusion: Perioperative microbiome modulation using probiotics and dietary interventions significantly reduced dysbiosis, improved postoperative recovery and lowered postoperative complication such as surgical site infections and anastomotic leak. These findings suggest that to optimize outcome, probiotics and dietary interventions shall be integrated into the perioperative care. Further research is needed to explore its long term benefits and strain-specific effects of probiotics.

Key words: Dysbiosis, Gut Microbiome, Probiotics, Surgical Site Infection

PG-PP-55 – Nicotine Pouches On Campus: Investigating Knowledge, Frequency And Predicting Factors Leading To Its Usage Among Medical And Non-Medical Students Of Peshawar

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Background And Objective: Nicotine pouches (NPs), a tobacco-free nicotine delivery method, have become more popular among young adults. Despite the fact that NPs are believed to be less harmful than traditional tobacco products, using them carries major health hazards. The present study investigate the knowledge, frequency of usage, and predicted variables associated with nicotine pouch intake among medical and non-medical students in Peshawar, Pakistan.

Methods: A comparative cross-sectional study was conducted for a period of six months for it involved 362 students (183 medical and 179 non-medical) out of eight universities in Peshawar. A structured questionnaire assessed nicotine pouches' influencing factors, usage patterns, knowledge, and demographics of participants. Data analysis was performed via SPSS v27.

Results: NP usage prevalence was 27.6%, with non-medical students showing significantly higher usage (33.0%) compared to medical students (22.4%), suggesting that lack of formal health education may contribute to higher susceptibility. NPs were seen as safer

than cigarettes by merely 51.9%. Logistic regression revealed that being aware of nicotine content ($p < 0.05$) greatly predicted beliefs regarding safety and addictiveness. Easy availability, discreet nature, and social acceptability all were key usage drivers. **Conclusion:** Despite moderate awareness of the addictive nature of NP, misconceptions regarding their safety and legality persist. Social, psychological, and environmental factors, such as peer pressure, stress, and marketing. Immediate interventions focusing on education, policy enforcement, and behavioral support are necessary to reduce rising use.

Keywords: Nicotine pouches, university students, peer influence, stress, knowledge, oral nicotine, tobacco-free products, public health

PG-PP-56 – Nurses' Knowledge And Practice Regarding Triage Management In The Emergency Department At Tertiary Care Hospitals, Peshawar, Pakistan

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Background & Objective: Triage has been used in the emergency departments for prioritizing the patients to determine which patients require immediate treatment according to their emergent health condition. Triage nurse is typically the first person on emergency when the patient is presented in emergency department. . According to previous studies, there is a lack of significant evidence to support the reliability and the predictability of the practices of nurses to be measured. To assess

the triage knowledge and practice of registered nurses working in the emergency department of tertiary care hospitals in Peshawar, Pakistan.

Methods: A cross-sectional study was conducted in five tertiary care hospitals of KPK. Using a convenient sampling technique, 120 nurses were included in the study. Data was collected using a valid and reliable tool that was adopted and modified. The registered nurses who were present at the time of data collection were included, while managerial nurses were excluded. Data was analyzed through SPSS version 22.

Results: The study revealed that 60% of the participants had good triage knowledge, and in terms of practice, 75% had good triage practice. Chi-square test was applied to find any significant association between the demographic variable and knowledge and practice. Age ($P < 0.001$) has a significant association with knowledge, and there is no significant association between the triage knowledge and practice ($p > 0.08$).

Conclusions: The study revealed a good level of triage knowledge and practice of nurses and recommends adding emergency triage teaching sessions, involving a part of nurses and student nurses, to address the knowledge deficit areas, hence improving practice.

Keywords: Triage, knowledge, practice, emergency department, nurses.

PG-PP-57 – Nurses' Knowledge, Attitude And Practices Regarding Adverse Drug Reactions And Prescribing Cascades Reporting In Tertiary Care Hospitals, Peshawar

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Background & Objectives: Adverse drug reactions and prescribing cascades pose serious threats to patients' safety, especially in tertiary care settings. Nurses being the key personnel responsible for the administration of medications and monitoring their effects on patients, need to be aware of the adverse reactions and prescribing cascades. The objective of this study was to assess nurses' knowledge, attitude and practice (KAP) regarding adverse drug reactions and prescribing cascades reporting in tertiary care hospitals of Peshawar, Pakistan.

Methods: A descriptive cross-sectional study was conducted in tertiary care hospitals, Peshawar. The sample size 224 was calculated by Rao soft online sample size calculator. A pre-designed, structured questionnaire was used for data collection via convenient sampling technique. Descriptive and inferential statistics were applied accordingly using SPSS version 20.

Results: The study found that majority of the participants (54.5%) had average knowledge. Only a few participants (21.4%), knew the term prescribing cascade. A considerable percentage of respondents (83.5%) agreed that ADRs reporting is their professional responsibility. Moreover, (52.2%) of the respondents revealed that no ADR was reported by them during their practice and (78.1%) reported that they haven't filled in an ADR reporting form. Majority of the participants (65.2%) had poor practices regarding ADRs and prescribing cascades reporting. Chi-square test was applied to determine significant association between demographic variables and knowledge category. Nurses' knowledge was significantly associated with age ($P=0.009$) and years of experience ($P=0.038$).

Conclusion: The study concluded that nurses had average knowledge, ambivalent attitude and poor practices. It highlights a significant gap in both knowledge and practice related to ADRs and prescribing cascades reporting. Educational training, online workshops, financial incentives and policy changes are recommended to enhance nurses' knowledge and practice ultimately improving patients' safety outcomes.

Key words: adverse drug reactions, prescribing cascades, nurses' knowledge of prescribing cascade, medication safety

PG-PP-58 – Obstetric Outcome Of Advanced Maternal Age In Women Presenting To Tertiary Care Hospital

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Background And Objectives: The rate of advanced maternal age pregnancies has been rising . Reports from both low and high-income countries show that women everywhere are waiting longer to have children. this research would help in developing successful awareness campaigns for couples and enabling them to make decision regarding pregnancy in this age group. The findings of this study can also be used by relevant organizations to improve the quality of maternity care provided to older women. my objective is to determine the obstetric outcome in advanced maternal age women presenting to tertiary care hospital.

Method: We conducted this Cross Sectional Study in Obs & Gynae department, HMC, Peshawar, on 69 patients having age advance maternal age 35 to 50 years. Women with multiple pregnancies, previous C-section were excluded. The obstetric outcome was determined in terms of C-section.

Results: Mean age of the patients was 43.67 ± 3.92 years. . In our study 20 (29%) patients had gestation diabetes, around 14 (20.3%) patients had preeclampsia and 10 (14.5%) patients had anemia. In our study the obstetric outcome in terms of C-section was observed in 38 (55.1%).

Conclusion: From our study we conclude that the obstetric outcome in terms of C-section was observed in 38 (55.1%) patients

Keywords: Obstetric outcome, Advanced maternal age, Caesarean section, Fertility

PG-PP-59 – One Health Assessment Of Antimicrobial Resistance Preference In Vibrio Cholerae In Fish

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Background and Objectives: *Vibrio cholerae* is a major global public health threat, particularly in regions with poor sanitation. Aquatic environments act as important reservoirs for this pathogen, facilitating its transmission through seafood. This study was conducted under the One Health framework to assess the prevalence, seasonal distribution, and antimicrobial resistance, including heteroresistance, of *V. cholerae* isolated from freshwater and marine fish. The objective was to evaluate the potential public health risk associated with seafood-borne transmission and emerging resistance trends.

Methods: A total of 500 freshwater and marine fish samples were collected and analyzed over a one-year period. Samples were processed for the isolation and confirmation of *V. cholerae*.

Seasonal variation was assessed, with particular focus on monsoon-related trends. Antimicrobial susceptibility testing was performed to determine resistance and heteroresistance patterns against commonly used antibiotics.

Results: Out of 500 samples, 110 (22%) were confirmed as *V. cholerae*. The prevalence was higher in freshwater samples (27.8%) compared to marine samples (11.7%). The highest isolation rate was observed during the monsoon season (28%). Antimicrobial susceptibility testing revealed a high rate of resistance and heteroresistance. Marine isolates showed higher complete resistance to azithromycin (23.8%) and doxycycline (33.3%), along with a 2.5-fold increase in co-heteroresistance to azithromycin and ciprofloxacin.

Conclusions: This study demonstrates significant prevalence and antimicrobial resistance of *V. cholerae* in fish, posing a potential public health risk through seafood consumption. Integrated One Health surveillance is essential to monitor emerging resistance trends, support evidence-based therapeutic decision-making, and prevent seafood-borne cholera transmission.

Keywords: Antimicrobial resistance, *Vibrio cholerae*, Fish, One health, Aquatic environment, Meta analysis

PG-PP-60 – Outcomes Of Gallbladder Perforation During Laparoscopic Cholecystectomy: A Descriptive Study

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Background & Objectives: Gallbladder perforation during laparoscopic cholecystectomy (LC) is a significant

complication, occurring in approximately 5% of cases, particularly in acute cholecystitis. It poses challenges to both surgical management and patient outcomes due to the risk of bile spillage and associated infections. This descriptive study aims to evaluate the impact of gallbladder perforation on surgical outcomes, including ileus, site infections, and diarrhea.

Methods: The study was conducted at the Surgical Emergency and Outpatient Department, involving 225 patients undergoing LC. Inclusion criteria encompassed patients aged 18-70 years, while those with prior abdominal surgeries or open cholecystectomy were excluded. Data collection focused on postoperative complications, stratified by age, gender, and socioeconomic status. Outcomes such as ileus, site infections, and diarrhea were assessed.

Results: Gallbladder perforation occurred in 35 patients (15.6%). Among these, 14.3% experienced ileus, 8.6% developed site infections, and 5.7% had diarrhea. Stratified analysis revealed higher rates of ileus and infections in older age groups, with statistical significance observed across specific strata. Male patients comprised 58.7% of the study population, and the average age was 49.22 years.

Conclusion: Gallbladder perforation during LC is associated with increased morbidity, including ileus, site infections, and diarrhea. Timely surgical intervention and optimized postoperative care are essential to mitigate these complications and improve patient outcomes. Further studies are needed to refine management protocols and enhance surgical safety.

Keywords: Gall bladder, Laparoscopic Cholecystectomy

PG-PP-61 – Outcomes Of Keyhole Surgery For Craniosynostosis In Infants

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Background & Objectives:

Craniosynostosis, defined as premature fusion of one or more cranial sutures, can lead to cranial deformities and potential neurodevelopmental delay. Minimally invasive “keyhole” surgery has emerged as an alternative to conventional open techniques, particularly in early infancy. To evaluate the outcomes and complications of keyhole surgery in infants with craniosynostosis at our center.

Methods: A retrospective review was conducted from Jan, 2024 to August, 2025 at MTI-LRH, of 11 infants, aged 1–8 months. Surgical approaches included anterior incision only (n=5) and combined anterior–posterior incision (n=6). Diagnoses were metopic synostosis (n=1), anterior right plagiocephaly (n=2), anterior brachycephaly (n=2), scaphocephaly (n=2) and pan craniosynostosis (n=4).

Inclusion criteria: age 1-8months, normal brain at CT.

Exclusion criteria: Patients with ischemic or atrophic brain, or age >1 year, were excluded.

Results: Suturectomy (n=5), Suturectomy + Craniectomy (n=6) Postoperative Complications: Surgical site infection (n=1) Focal seizure episode (n=1) Clinical Outcomes: Improvement: 7 patients No significant improvement: 1 patient Ongoing follow-up: 3 patients Overall: Majority of patients (64%) showed clinical improvement following surgery.

Conclusion: Keyhole surgery for

cranosynostosis in appropriately selected infants is a safe and effective minimally invasive approach, associated with low complication rates and promising cosmetic and neurological outcomes. Longer-term follow-up is required, especially for complex and pan cranosynostosis cases.

Keywords: Cranosynostosis, neurodevelopmental delay, keyhole
PG-PP-62 – Outcomes Of Non-Operative Management Vs Surgery In Elderly Patients With Acute Cholecystitis: A Prospective Cohort Study

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Background & Objectives: Acute Cholecystitis (AC) in the elderly is a common surgical emergency with a high morbidity rate. Optimal management is debatable, as surgery provides definitive treatment but may pose an increased risk in older, comorbid individuals. This study compared non-operative management to surgical treatment for elderly AC patients.

Methods: We conducted a prospective cohort study of patients ≥ 65 years with acute calculous cholecystitis at Ayub Teaching Hospital, Abbottabad. Patients were treated non-operatively (antibiotics+percutaneous cholecystostomy) or with an early cholecystectomy based on clinical judgment. Baseline characteristics, comorbidities, and disease severity were documented. The primary outcomes were mortality and major complications.

Results: The study included 120 patients (mean age 73.5 years, 52% female) (60 surgical and 60 non-operative). Surgical patients experienced lower 30-day mortality (6.7%) and 1-year mortality (16.7%) compared to non-operative patients. Major complications occurred in 25% (surgery) and 33% (non-

operative). Surgery resulted in a longer index stay, fewer biliary recurrences and readmissions, and a lower cumulative one-year cost. Early cholecystectomy is recommended for fit elderly patients, as it leads to lower long-term mortality, fewer recurrences, and better overall outcomes.

Conclusion: Early cholecystectomy is safe and can be beneficial in appropriately selected elderly patients, leading to reduced long-term mortality and morbidity. Non-operative care remains a necessary alternative for high-risk patients, but it should not replace definitive surgery in individuals fit for surgery.

Keywords: Acute Cholecystitis, comorbidities,

PG-PP-63 – Pathological Outcome Of HER2/Neu Positive Early Breast Cancer Patients Treated With Neoadjuvant Chemotherapy

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Background & Objectives: HER2/neu-positive breast cancer is an aggressive molecular subtype characterized by rapid progression but a favorable response to targeted and cytotoxic therapies. Neoadjuvant chemotherapy plays a key role in improving surgical outcomes and survival. This study aimed to determine the frequency of pathological complete response (pCR) following neoadjuvant chemotherapy in patients with HER2/neu-positive early breast cancer.

Methods: This descriptive study was conducted in the Department of Medical Oncology, Khyber Teaching Hospital, Peshawar, from March to July 2025. A total of 96 female patients aged 18–80 years with

HER2-positive early breast cancer (stage 0–IIIA) were enrolled using non-probability consecutive sampling. Patients received four cycles of neoadjuvant chemotherapy and were evaluated one month after treatment. Data were analyzed using SPSS.

Results: The mean age was 49.7 ± 9.8 years, with the majority being post-menopausal (58.3%). Pathological complete response was achieved in 34 patients (35.4%), while 62 (64.6%) had residual disease. pCR was significantly associated with age <50 years ($p=0.041$), pre-menopausal status ($p=0.033$), and early tumor stage ($p=0.018$). Invasive ductal carcinoma showed a higher, though non-significant, response compared to invasive lobular carcinoma. Adverse effects were manageable, with alopecia observed in all patients and neutropenia in 18.8%.

Conclusion: Neoadjuvant chemotherapy results in a considerable pathological response in HER2-positive early breast cancer, particularly among younger and early-stage patients. However, the pCR rate remains lower than international benchmarks, possibly due to limited access to advanced HER2-targeted therapies.

Keywords: HER2-positive breast cancer, neoadjuvant chemotherapy, pathological complete response, oncology, Pakistan

PG-PP-64 – Patterns Of Dental Treatment Needs And Care Complexity Among Partially Dentate Patients Attending Public Sector Dental Teaching Hospital

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Background & Objectives: The pattern of dental treatment needs is evolving with changing disease profiles, patient expectations and healthcare access, particularly in low-middle income countries. This study aimed to assess dental treatment needs among partially dentate patients reporting to public sector dental teaching hospital and to classify these needs into simple and complex care categories based on clinical and functional parameters.

Methods: A cross-sectional study was conducted among 120 partially edentulous patients attending prosthodontics outpatient department. Data was collected using a structured proforma based on demographic details, extent of tooth loss, abutment and occlusal condition, ridge condition, medical history, impact on quality of life and treatment seeking pattern. Descriptive statistics, multiple response analysis and chi square test was applied to determine association between gender, education and treatment seeking pattern and needs.

Results: Majority of participants were young adults 21-40 years, dental caries (93.9%) remained common etiology, while most patients demonstrated clinical favorable conditions suitable for simpler prosthodontic intervention, over half exhibited one condition contributing to complexity of care, particularly related to abutment status and occlusal compromise. Functional impairment (66.7%) appeared the most common impact of tooth loss. Despite a very low number of participants were seeking treatment and education level remained a significant driver for it.

Conclusion: These findings highlight a

growing mismatch between clinical need and service utilization, this underscores the need for proactive, education driven rehabilitation strategies in public dental services.

Keywords: prosthodontics, treatment needs, partial edentulism, treatment complexity, dental care, public-sector,

PG-PP-65 – Pediatric Vs. Adult Extradural Hematoma Outcomes In LMICs: Mortality, Surgical Timing, And Age-Specific Hematoma Volume Cutoffs

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Background & Objectives: Extradural hematoma (EDH) is a neurosurgical emergency that, although uncommon, contributes significantly to morbidity and mortality following traumatic brain injury (TBI). Differences in anatomical, physiological, and injury-related factors may influence the clinical course and surgical outcomes of EDH in pediatric versus adult populations. Yet, comparative data remain limited, particularly in low- and middle-income countries (LMICs). The objective of the study is to compare clinical characteristics, surgical outcomes, and predictors of mortality in pediatric and adult patients undergoing surgical evacuation of traumatic EDH at a tertiary care center in Pakistan.

Methods: This retrospective cohort study included 289 patients (158 adults; 131 pediatric) who underwent surgical evacuation of traumatic EDH over a 24-month period at Lady Reading Hospital.

Data on demographics, clinical presentation, hematoma characteristics, associated injuries, surgical timing, and outcomes were analyzed. Multivariable logistic regression and ROC curve analysis were used to identify independent predictors of mortality and optimal hematoma volume thresholds.

Results: Pediatric patients had significantly lower in-hospital mortality (3.1% vs. 14%, $p = 0.001$), smaller hematoma volumes (30 mL vs. 34 mL, $p = 0.032$), and higher admission GCS scores (median 12 vs. 10, $p < 0.001$). Midline shift and associated intracranial injuries (ASDH/tSAH) were strong predictors of mortality across both cohorts. In adults, mortality followed a U-shaped trend with respect to surgical timing, while in pediatrics, earlier surgery showed a linear reduction in risk (OR = 0.78/hour, $p = 0.047$). ROC analysis identified a pediatric-specific hematoma volume threshold of ≥ 33.5 mL predictive of mortality (AUC = 0.763, NPV = 99.2%).

Conclusion: Pediatric EDH patients demonstrated more favorable surgical outcomes compared to adults, with lower mortality and milder presentations. Hematoma volume and surgical timing emerged as key predictors of outcome. These findings highlight the need for age-specific triage protocols and underscore the importance of timely intervention, particularly in resource-limited neurosurgical settings.

Keywords: extradural hematoma, traumatic brain injury, pediatric neurosurgery, surgical outcomes, hematoma volume, mortality predictors

PG-PP-66 – Perceived Effectiveness Of Peer Learning Among Undergraduate Nursing Students Peshawar

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Background & Objective: Traditionally, learning in nursing education was teacher-centered, but now with the advancement in teaching-learning methodologies, peer learning has gained popularity and acceptance in nursing education. It is a two-way learning process that provides joint benefits to all learners involved. It also brings positive effects such as autonomy, self-confidence, critical-thinking skills, deeper understanding, and leadership abilities which support the learners in their academic and professional sphere. Despite its importance, scarce literature is available on the subject particularly in the context of undergraduate nursing students, Pakistan.

This study aims to explore the perceived effectiveness of peer learning among undergraduate students

Methods: A cross-sectional study was conducted in three nursing institutes in KP. Using convenient sampling technique, 210 students were included in the study. The inclusion criteria were undergraduate nursing students of 3rd and 4th year. Those students who refused to provide written consent were excluded from the study. A questionnaire was adopted and modified for the context. Cronbach's alpha was calculated to be 0.81 after conducting a pilot study. Data was analyzed on SPSS version 20.

Results: The study indicated that a significant percentage of undergraduate students (67.11%) perceived peer learning as highly effective, whereas 32.02% considered it as moderately effective while an exceedingly small

percentage (0.87%) saw it as ineffective. Chi-square test was applied to find out any significant association between the demographic variables and peer learning, it was significant ($p < 0.001$) between the institute where the students were enrolled in and peer learning.

Conclusion: Overall, the study proved that peer learning is a highly effective teaching-learning strategy among nursing students and has remarkable benefits. The study recommends that nursing institutes should incorporate it as teaching learning strategies in their respective study modules. It is also recommended that peer learning should be integrated in the curriculum, to maximize its benefits and foster a more interactive and inclusive academic environment for learning.

Keywords: Peer Learning, Perceived Effectiveness, Undergraduate Nursing Students.

PG-PP-67 – Prescribing Practices In Pediatric Pneumonia: A Retrospective Study

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Background & Objectives: Pediatric pneumonia remains a leading cause of morbidity and mortality in children, particularly in low- and middle-income countries, where irrational antibiotic use and limited diagnostic facilities have accelerated the emergence of antimicrobial resistance (AMR). The increasing failure of first-line antibiotics poses a serious threat to effective pneumonia management and contributes to prolonged hospitalization and increased healthcare burden.

Methods: This retrospective study was conducted to evaluate antibiotic prescribing practices in pediatric pneumonia patients admitted to a tertiary care teaching hospital in Peshawar, Pakistan. Medical records of 82 hospitalized pediatric patients diagnosed with pneumonia were reviewed over a 45-day period.

Results: Data related to demographics, prescribed medications, and changes in antibiotic therapy were systematically collected and analyzed using World Health Organization core prescribing indicators. This study found 506 medications dispensed to 82 patients (6.17 per patient), far exceeding WHO guidelines of 1.6-1.8. Antibiotics comprised 39.3% of prescriptions, with 58.5% given by injection and only 12.84% in generics. Ampicillin, used in 33% of cases, failed in 84.5%, requiring escalation to broader-spectrum agents. Overall, 42% needed antibiotic changes.

Conclusion: These findings highlight substantial deviations from rational prescribing practices and underscore the urgent need for antimicrobial stewardship programs, improved diagnostic support, and adherence to evidence-based treatment guidelines.

Keywords: Pediatric pneumonia, antibiotic resistance, Empirical therapy, antibiotic prescribing practices.

PG-PP-68 – Prevalence Of Acute Pancreatitis In Patients Taking Antihypertensive And Oral Hypoglycemic Medications

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Background & Objectives: Drug-induced pancreatitis is still an underappreciated cause of acute pancreatitis, a potentially dangerous

condition with high morbidity and mortality, especially in patients on long-term antihypertensive and oral hypoglycemic therapy. The purpose of this study was to ascertain the frequency of drug-associated acute pancreatitis, characterize its clinical manifestation, and assess the correlation between particular drugs, length of use, and the occurrence of the illness in hospitalized patients. In the surgical ward of Lady Reading Hospital MTI, Peshawar,

Methods: a retrospective cross-sectional study was carried out. Convenient sampling was used to include 100 patients who had been diagnosed with acute pancreatitis based on radiological evidence, elevated serum lipase and amylase levels, and clinical features. Patient interviews and questionnaire records were used to gather information about hypertension and diabetes histories, medication type, duration, compliance, and regimen modifications. Patients with alcohol use, abdominal trauma, or procedure-related pancreatitis were excluded.

Results: Data were analyzed using SPSS version 26.0, with results presented as frequencies and proportions, and statistical significance set at $p < 0.05$. Acute pancreatitis predominantly affected middle-aged women in this hospital-based cohort and was most frequently associated with poorly controlled hypertension and gallstone disease. Alcohol consumption, diabetes mellitus, and autoimmune diseases showed negligible association with disease occurrence. Although establishing direct causation remains challenging, antihypertensive medications appeared to be a contributing factor in a subset of cases, particularly among patients with chronic, uncontrolled hypertension requiring frequent medication adjustments.

Conclusion: These findings underscore the importance of thorough medication review, careful monitoring, and prudent prescribing

practices. Furthermore, the study highlights the need for larger, prospective studies to better characterize drug-induced acute pancreatitis within the local population and improve preventive strategies and patient outcomes.

Keywords: acute pancreatitis, antihypertensive drugs, drug induced, hypertension, gallstones

PG-PP-69 – Prevalence Of Acute Pancreatitis In Patients Taking Antihypertensive And Oral Hypoglycemic Medications

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Background & Objective: Drug-induced pancreatitis is still an underappreciated cause of acute pancreatitis, a potentially dangerous condition with high morbidity and mortality, especially in patients on long-term antihypertensive and oral hypoglycemic therapy. The purpose of this study was to ascertain the frequency of drug-associated acute pancreatitis, characterize its clinical manifestation, and assess the correlation between particular drugs, length of use, and the occurrence of the illness in hospitalized patients.

Methods: In the surgical ward of Lady Reading Hospital MTI, Peshawar, a retrospective cross-sectional study was carried out. Convenient sampling was used to include 100 patients who had been diagnosed with acute pancreatitis based on radiological evidence, elevated serum lipase and amylase levels, and clinical features. Patient interviews and questionnaire records were used to gather information about hypertension and diabetes histories, medication type, duration, compliance, and regimen modifications.

Patients with alcohol use, abdominal trauma, or procedure-related pancreatitis were excluded.

Results: Data were analyzed using SPSS version 26.0, with results presented as frequencies and proportions, and statistical significance set at $p < 0.05$. Acute pancreatitis predominantly affected middle-aged women in this hospital-based cohort and was most frequently associated with poorly controlled hypertension and gallstone disease. Alcohol consumption, diabetes mellitus, and autoimmune diseases showed negligible association with disease occurrence. Although establishing direct causation remains challenging, antihypertensive medications appeared to be a contributing factor in a subset of cases, particularly among patients with chronic, uncontrolled hypertension requiring frequent medication adjustments.

Conclusion: These findings underscore the importance of thorough medication review, careful monitoring, and prudent prescribing practices. Furthermore, the study highlights the need for larger, prospective studies to better characterize drug-induced acute pancreatitis within the local population and improve preventive strategies and patient outcomes.

Keywords: acute pancreatitis, antihypertensive drugs, drug induced, hypertension, gallstones

PG-PP-70 – Prognostic Factors In Skull Fractures: A Two-Year Experience From A High-Volume Trauma Center

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Background & Objectives: Skull fractures are common sequelae of traumatic brain injury (TBI), often associated with

significant morbidity, neurological deterioration, and complications. Understanding predictors of outcomes can aid in better management and prognostication. This study aimed to evaluate demographic trends, fracture characteristics, associated brain injuries, and predictors of poor outcomes in patients with skull fractures.

Methods: A retrospective observational study was conducted including 204 patients with skull fractures, admitted between [insert years]. Patients were stratified into pediatric (<18 years, n=154) and adult (≥18 years, n=50) cohorts. Clinical characteristics, injury mechanisms, fracture parameters, neurological status (GCS), complications, and outcomes were analyzed. Logistic regression and survival analysis were performed to identify predictors of poor outcomes.

Results: The cohort was predominantly pediatric (75.5%, mean age 9.2 ± 5.1 years), with an overall male predominance (71.6%). Road traffic accidents were the leading injury mechanism (56.4%), followed by falls (37.7%). Fractures most commonly involved the parietal (47.5%) and frontal bones (31.9%). Associated brain injuries were present in 59.8%, with contusions (39.7%) and dural tears (29.9%) most frequent. Neurological improvement was observed in 91% of severe and 95% of moderate GCS cases ($\chi^2=40.6$, $p<0.001$). Complications occurred in 22.5% of patients, including infection (8.8%), CSF leak (6.9%), and seizures (5.9%). Multivariable regression identified severe admission GCS (OR=14.2, $p<0.001$), fracture depth >2 cm (OR=4.3, $p=0.016$), temporal fractures (OR=2.9, $p=0.034$), and

associated brain injuries (OR=3.1, $p=0.020$) as independent predictors of poor outcomes. Kaplan–Meier analysis demonstrated significantly faster recovery in pediatric patients across all GCS strata (log-rank $p<0.001$).

Conclusion: Skull fracture outcomes are influenced by admission GCS, fracture depth, site, and presence of associated brain injuries. Pediatric patients demonstrate faster recovery and lower complication rates compared to adults. Early recognition of high-risk predictors is essential to improve outcomes and optimize resource allocation.

Keywords: Skull fracture, Traumatic brain injury, Neurological outcomes, Fracture depth, Pediatric head injury, Complications.

PG-PP-71 – Quality Of Life In Limb Amputees Among Diabetic Foot And Traumatic Patients: A Cross-Sectional Comparative Study At Public And Private Hospitals Of Peshawar

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Background& Objective: Limb amputation significantly affects physical, psychological, social, and environmental well-being. In Pakistan, diabetic foot complications and traumatic injuries are major causes of amputation, yet comparative evidence on their impact on quality of life (QOL) is limited.

To compare the quality of life between diabetic and traumatic amputees in tertiary care hospitals of Peshawar, Pakistan.

Methods: A quantitative cross-sectional comparative study was conducted among 66

amputees (33 diabetic, 33 traumatic). QOL was assessed using the WHOQOL-BREF developed by the World Health Organization. Data were analyzed using Mann–Whitney U and chi-square tests, with $p < 0.05$ considered significant.

Results: Traumatic amputees demonstrated significantly higher overall QOL than diabetic amputees ($U = 13.50$, $p < .001$). Significant differences were observed across all domains—physical, psychological, social, and environmental ($p \leq .001$). Most diabetic amputees (78.8%) reported poor QOL, whereas traumatic amputees largely reported moderate to good QOL. Occupation and marital status were significantly associated with QOL.

Conclusion: Traumatic amputees experience substantially better quality of life compared to diabetic amputees. Targeted, cause-specific rehabilitation and psychosocial support are essential to improve outcomes, particularly among diabetic amputees.

Keywords: Quality of Life, Limb Amputation, Diabetic Foot, Traumatic Amputation, WHOQOL-BREF, Pakistan

PG-PP-72 – Readiness To Adopt Emerging Antimicrobial Nanoparticle Dental Implant Coating Among The Dentists Of Pakistan

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Background & Objectives: Despite various modifications of implant surface, major implant related complications continue to affect the success of dental implants as the conventional implant coatings lack the antimicrobial properties. However, with the emerging advancement of nanoparticles in dentistry, antimicrobial

biomaterials of dental implants are proving to be the promising tools in improving osteointegration and preventing infection. The aim of the survey is to assess the knowledge, attitude and perceived barriers regarding the novel antimicrobial nanoparticle based dental implant coatings among dental professionals of Pakistan.

Methods: The Google Forms based online cross-sectional study survey is being conducted among the dental professionals of Pakistan to gather the data on the demographic variables and knowledge, attitude and perceived barriers regarding the antimicrobial nanoparticle-based dental implants coating surfaces. In total, 300 dentists participated in the study according to the non-probability convenience sampling.

Results: Regarding the demographic variables, majority of the participants are anticipated to be female and fresh graduates with less than 5 years of experience from the various government institutions. More than half of the dentists are expected to be aware of peri-implantitis. However, fewer dentists may have high levels of knowledge of bactericidal nanoparticles that can be used as implant coating. Generally, a greater proportion is expected to show a positive attitude towards clinical applications. Dental professionals may consider unavailability, cost, and lack of proper training to be the major perceived barriers in adopting antimicrobial nanoparticle-based dental implant coatings.

Conclusion: Despite the discrepancy between knowledge, attitude and perceived barriers, dentists are likely to be open to integration of the recent advances into the clinical practice to improve dental implant outcome. Educational programs, proper training, and increased resources accessibility will be required for the successful implementation of antimicrobial particle-based implant coating.

Keywords: Knowledge, attitude,

nanoparticles, dental implant, antimicrobial

PG-PP-73 – Revolutionizing Cancer Therapy: Nanobots As Active Targeted Drug Delivery Systems

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Background & Objectives: Cancer remains one of the world's major causes of death, and conventional treatments like chemotherapy are frequently limited by inadequate tumor penetration, drug resistance, and systemic toxicity. Nanobots, nanoscale robotic devices (1-200 nm), emerge as a revolutionary solution for targeted drug delivery, enabling precise navigation to tumor sites, controlled release, and minimal off-target effects. In order to overcome biological barriers including the blood-brain barrier (BBB) and hypoxic microenvironments, these systems combine propulsion mechanisms with stimuli-responsive features. This improves therapeutic efficacy in many types of malignancies, including brain, lung, and breast tumors.

Methods: The Methods involved a systematic review of published studies on nanobot fabrication, propulsion mechanisms, targeting strategies, and stimuli-responsive drug release systems. Performance evaluation data were extracted from in vitro cancer cell models, three-dimensional tumor spheroids, and in vivo mouse xenograft studies to assess therapeutic efficiency and targeting accuracy.

Results: Preclinical data reveals superior performance: ultrasound-propelled nanobots enable 38% doxorubicin release in 15 minutes, overcoming multidrug resistance; magnetic nanobots achieve 55% hypoxic tumor

penetration and 3.5-fold better inhibition than free drugs; DNA origami systems deliver thrombin for vascular thrombosis, results in tumor necrosis in mouse models; biohybrids improve BBB crossing for brain cancer, which increases survival by two times. In general, nanobots lower toxicity, increase bioavailability, and work in collaboration with photothermal or immunotherapy to achieve 80–94% gene silence and, in certain situations, total regression. Nanobots have the potential to revolutionize precise cancer treatment by changing passive delivery methods to active ones.

Conclusion: However, interdisciplinary efforts—including the integration of AI for navigation and biodegradable materials—are required to solve issues including biocompatibility, scalability, immune evasion, and clinical translation. Multifunctional theranostics for individualized treatment are the focus of future developments, which promise lower mortality and better patient outcomes.

Keywords: Nanobots, targeted drug delivery, cancer therapy, nanotechnology, propulsion mechanisms,

PG-PP-74 – Risk Of Meningitis Following Posterior Fossa Decompression With Duraplasty In Cases Of Chiari Malformation Type 1 And Syringomyelia

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Background & Objective: Chiari malformation type I with syringomyelia results from impaired cerebrospinal fluid flow at the craniovertebral junction. Posterior fossa decompression with duraplasty is the standard treatment but carries risks of postoperative

complications, including meningitis and CSF leak, necessitating evaluation of surgical outcomes. To determine the risk of postoperative meningitis after posterior fossa decompression with duraplasty in CM-1 patients with syringomyelia.

Method: This prospective cohort study was conducted at the Department of Neurosurgery, Hayatabad Medical Complex, Peshawar, from January 2024 to January 2025. Sixty patients with Chiari malformation type I and syringomyelia underwent posterior fossa decompression with duraplasty and were followed for 12 months to assess postoperative meningitis, CSF leak, pseudo-meningocele, and reoperation. Data were analyzed using SPSS, with $p < 0.05$ considered significant.

Results: The mean age was 39 ± 16.4 years, with female predominance (75%). Non-autologous grafts were used in 76.7% of cases. The incidence of postoperative meningitis was 5%. Pseudo-meningocele occurred in 8.3% of patients, while CSF leak and reoperation were observed in 5% each. Patients receiving non-autologous grafts demonstrated higher risks of meningitis ($RR = 3.29$), pseudo-meningocele ($RR = 2.20$), CSF leak, and reoperation ($RR = 1.64$ each). However, no statistically significant associations were identified between complications and demographic or clinical variables ($p > 0.05$).

Conclusion: Posterior fossa decompression with duraplasty is an effective procedure for CM-1 with syringomyelia but carries a risk of postoperative complications, particularly meningitis, emphasizing the need for careful surgical planning and postoperative monitoring.

Keywords: Chiari malformation type I, syringomyelia, posterior fossa decompression

PG-PP-75 – Role Of Ultrasound In Detection Of Renal Parenchymal Thickness Changes Following Extracorporeal Shock Wave Lithotripsy

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Background & Objectives: Extracorporeal shock wave lithotripsy (ESWL) is a widely accepted non-invasive treatment for renal calculi; however, the mechanical and vascular effects of shock waves may result in transient or permanent renal parenchymal injury. Early identification of such changes is essential for assessing renal damage and planning appropriate follow-up. This abstract aims to highlight the role of ultrasonography in detecting and monitoring changes in renal parenchymal thickness following ESWL.

Methods: prospective descriptive study , ultrasound along with Doppler performed at 0 , 1week and 4 weeks in all patient undergoing ESWL

Keywords: Ultrasonography, ESWL, Renal parenchyma, Renal injury, Doppler ultrasound

PG-PP-76 – Safety Index And Diagnostic Yield Of Staging Laparoscopy Among Gastric And GEJ Tumor Patients

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Background & Objectives: Gastric cancer remains a significant cause of worldwide cancer-related fatalities, with peritoneal dissemination playing a crucial role in treatment failures as it progresses. Conventional imaging methods often miss

concealed metastases that are only discovered during surgical procedures. As a result, diagnostic (staging) laparoscopy (SL) has been promoted as a supplementary method to enhance the accuracy of preoperative staging

The research aims to evaluate the diagnostic yield of staging laparoscopy (SL) for detecting hidden peritoneal metastasis in gastric and gastroesophageal junction (GEJ) cancers and review the safety profile of SL.

Methods: A retrospective cohort study at a single center evaluated patients diagnosed with gastric or gastroesophageal junction (GEJ) adenocarcinoma who underwent staging laparoscopy (SL) from September 2022 to October 2023. The study identified 188 eligible patients, with operative metrics such as mean operative time, mean blood loss, and median hospital stay recorded, along with postoperative complications. Statistical analysis was performed using SPSS version 24, applying chi-square for categorical variables, with significance established at $p < 0.05$.

Results: A total of **188 patients** underwent staging laparoscopy for gastric, gastroesophageal junction (GOJ). The cohort had a **mean age of 45.1 years**, with a male predominance (**60.1%**). Staging laparoscopy was associated with **favorable perioperative outcomes**, including a **short mean operative time (38.7 minutes)**, **minimal blood loss (5.4 mL)**, and **brief hospital stay (1.01 days)**, confirming the minimally invasive and resource-efficient nature of the procedure. The procedure demonstrated an **excellent safety profile**, with **97.7% of patients experiencing no complications**.

Conclusion: Staging Laparoscopy has a high diagnostic Role and safety index.

Keywords: Staging Laparoscopy, Diagnostic Yield, Safety Index

PG-PP-77 – Seeing Beyond The Lumen: IVUS Guided Optimization Of Coronary Stenting In High-Risk Lesions – A Retrospective Study

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Background & Objectives: Intravascular Ultrasound has become an essential imaging tool in interventional cardiology, offering high-resolution, cross-sectional visualization of coronary vessels to optimize stent deployment and improve outcomes in coronary artery disease (CAD). Unlike conventional angiography, IVUS enables accurate assessment of plaque burden, vessel dimensions, and stent expansion, crucial for managing high-risk lesions prone to restenosis and thrombosis. Globally, IVUS-guided percutaneous coronary intervention (PCI) has shown superior procedural and clinical outcomes, yet its use in Pakistan remains limited despite the high prevalence of complex coronary disease. Local data are scarce, particularly regarding patients with severe calcification and advanced CAD.

This retrospective study evaluates the role of Intravascular Ultrasound (IVUS) in optimizing coronary stenting in high-risk lesions. Specifically, it sought to compare procedural outcomes and long-term complications between IVUS-guided and angiography-guided Percutaneous Coronary Interventions (PCI).

Methods: A Non-probability consecutive

sampling technique was used with a total of 100 patients included in this retrospective study conducted between January 2024 and December 2024. Of these, 50 patients underwent IVUS-guided PCI and 50 underwent angiography-guided PCI. Demographic data, procedural outcomes, and long-term follow-up data on Major Adverse Cardiovascular Events (MACE) were collected. Statistical analysis was performed using a chi-square test to evaluate the difference in procedural success between the two groups.

Results: The mean age of patients was 60.4 ± 10.5 years, with 48% male and 52% female. The procedural success rate was

Keywords: IVUS, coronary stenting, high-risk lesions, PCI, procedural outcomes\

PG-PP-78 – Self-Medication For Dental Pain: Prevalence, Practices, And Associations In A Small Cross-Sectional Sample

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Background & Objectives: Self-medication for dental pain is a widespread behavior that may delay professional care and increase the risk of inappropriate drug use; this study aimed to estimate the prevalence of self-medication for dental pain, describe commonly used remedies, and explore associations with basic demographic variables.

Methods: A cross-sectional survey was conducted among 21 participants who completed a structured questionnaire; data were entered for analysis in SPSS where descriptive statistics (frequencies, percentages)

significantly higher in the IVUS-guided group at 86.0% compared to 79.0% in the angiography-guided group ($p = 0.026$). The MACE rate was lower in the IVUS group (5%) compared to the angiography group (10%), with a statistically significant difference ($p = 0.045$). No significant correlation was found between age and stenosis degree.

Conclusion: IVUS-guided PCI significantly improves procedural success and reduces long-term complications compared to angiography-guided PCI. The study supports the use of IVUS as an essential tool for optimizing stent deployment in high-risk coronary lesions.

were generated and a chi-square test was applied to examine associations between gender and dental pain experience.

Results: Of 21 respondents, 15 reported experiencing dental pain; among those, a substantial proportion relied on self-care measures rather than immediate professional consultation. Commonly reported approaches included over-the-counter analgesics, home remedies such as clove oil, use of leftover medications, and obtaining drugs from pharmacies without prescription. Frequency analysis highlighted inconsistent responses across some variables, reflecting data entry issues, but overall patterns indicate reliance on non-professional management. The chi-square test indicated no statistically significant association between gender and dental pain experience ($\chi^2 = 0.07$, $df = 1$, $p = 0.79$).

Conclusion: In this small sample, self-medication for dental pain was relatively common and involved both pharmaceutical and traditional remedies; no gender difference in pain reporting was detected. These findings underscore the need for public education on appropriate dental care, stricter regulation of

non-prescription drug sales, and improved access to timely dental services to reduce reliance on self-medication and its potential harms.

Keywords: Self-medication, Dental pain, Over-the-counter analgesics, Clove oil, Cross-sectional survey, Pakistan

PG-PP-79 – Surgical Nurses Knowledge, Attitude, And Practice Regarding Informed Consent In Tertiary Care Hospitals, Peshawar

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Background & Objectives: This study delves into the knowledge, attitudes, and practices of surgical nurses regarding informed consent within the context of tertiary health care institutions in Peshawar. Informed consent is a fundamental aspect of patient-centered care, and understanding the perspectives of nurses in this regard is of paramount importance. The primary objective of this research is to investigate the knowledge, attitudes, and practices of surgical nurses concerning informed consent. Specific goals include evaluating the extent of knowledge and understanding among nurses, examining their attitudes toward informed consent, and assessing how they put these principles into practice.

Methods: A cross-sectional study was conducted involving 201 surgical nurses from selected tertiary health care facilities in Peshawar.

Data was gathered using a questionnaire that addressed demographic information,

knowledge, attitudes, and practices related to informed consent. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to analyze the data.

Results: The study revealed that a significant proportion of surgical nurses possessed a solid foundation of knowledge and held positive attitudes toward informed consent. Notably, 94.5% of nurses were aware of the informed consent process, and 86.1% understood the requirements of valid consent. However, there were knowledge gaps regarding the types of informed consent. In practice, the majority of nurses reported obtaining informed consent for major invasive procedures and providing patients with essential information. Nevertheless, there was room for improvement in areas such as the provision of counseling aids. This research highlights the importance of ongoing education and awareness regarding informed consent among surgical nurses.

Conclusion: The study identified need for more inclusive research, long-term tracking of knowledge and practices, enhanced training programs, patient involvement, and interdisciplinary collaboration. Addressing these recommendations is crucial for delivering patient-centered care, upholding patients' rights, and ensuring the ethical and effective practice of informed consent in health care settings.

Keyword: Informed Consent, Surgical Nurses, Knowledge, Attitude, Practice, Tertiary Care Hospital

PG-PP-80 – The "Thermal Glue" Phenomenon: Impact Of Fluid Viscosity On Surgical Outcomes In Pediatric Scalds

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Background & Objectives: Pediatric scald burns represent a significant proportion of burn unit admissions, yet the role of fluid viscosity in determining burn depth remains underexplored. This study compares clinical outcomes of pediatric scalds caused by low-viscosity liquids (hot water) versus high-viscosity liquids (milk/tea) and determines whether fluid viscosity predicts deep dermal conversion requiring tangential excision.

Methods: A retrospective comparative study was conducted at the Burn and Plastic Surgery Center, Peshawar. Medical records spanning from 5th April 2025 to 10th December 2025 were reviewed for 195 pediatric patients aged less than 12 years with scald burns. Patients were stratified into Group A with low-viscosity water scalds (n=90) and Group B with high-viscosity milk and tea scalds (n=105).

Results: The primary outcome was need for tangential excision as a clinical proxy for deep dermal conversion. Secondary outcomes included hospital stay length and total body surface area affected. Mean total body surface area was comparable at $12\% \pm 4\%$, but injury depth differed significantly. The high-viscosity group had significantly higher tangential excision rates compared to the water group (64.8% vs. 23.3%, $p < 0.001$). Mean hospital stay was prolonged in the high-viscosity group (14 ± 3 days vs. 8 ± 2 days, $p=0.02$). Viscous fluids demonstrated a "Thermal Glue" effect, adhering to skin and prolonging heat transfer, whereas water ran off causing superficial injuries. Fluid viscosity critically determines burn depth in pediatric scalds. High-viscosity liquids act as thermal adhesives, significantly increasing deep dermal conversion risk and surgical intervention need.

Conclusion: Viscous fluid burns warrant modified surgical protocols with earlier excision, as traditional conservative management risks delayed intervention and prolonged morbidity.

Keywords: Burns, Child, Debridement, Viscosity, Wound Healing.

PG-PP-81 – The Effectiveness Of Surgical Management In Knee Flexion Contracture In Primary Total Knee Arthroplasty

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Background & Objectives: Knee flexion contracture is one of the common deformities associated with advanced osteoarthritis of knee. Knee contractures impair mobility, raise energy costs, raise the chance of falls, and put additional strain on the hip and lumbar spine. This study aimed to compare knee flexion contracture before & after Total knee arthroplasty (TKA) post-intraoperative soft tissue release, posterior osteophytes removal & distal femoral additional cutting.

Methods: This descriptive study was conducted in the department of orthopedic & spine Hayatabad Medical Complex, Peshawar from 1st February 2023 to 30th April 2025. The acquired sample size was 72. The inclusion criteria included all adult patients having age > 45 years & having moderate to severe (Grade-II and III) flexion contracture who were undergoing primary total knee arthroplasty (TKA) and had either osteoarthritis or rheumatoid arthritis. Patients having mild flexion deformities such as Grade-I flexion contractures, and those with hip flexion contractures due to other conditions including psoriatic arthritis, haemophilic arthritis, or post-traumatic arthritis were excluded.

Results: Out of 72 patients included in our study, 41(56.9%) were women & 33(45.8%) were men. 49(68%) patients had age < 65 years

& 23(31.9%) patients had age >65years. The mean flexion contracture in pre-op patients was 16.9 degrees & in post-op patients mean flexion contracture was

5.9 degrees at 1 month of follow up, 5.5 degree at 3 months & 5.3 degree at 6 months of follow up.

Conclusion: Knee flexion contracture is one of the debilitated conditions associated with knee OA & can be corrected in Total Knee Arthroplasty with soft tissue releases, posterior osteophytes removal & capsular release in moderate flexion contracture cases while flexion contracture >30° require additional resection of distal 2-3mm of distal femur.

KEYWORDS: Arthroplasty, Contracture, Knee Joint, Knee Arthroplasty, Osteoarthritis, Total Knee Replacement.

PG-PP-82 – The Frequency And Determinants Of Reproductive Tract Infections In Married Women Of Rural Areas Of Khyber Agency, KPK

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Background & Objectives: Women of reproductive age are very prone to reproductive tract infections. They scarcely seek treatment due to the silent behaviour of RTI's and their little knowledge about these infections. This study aims to assess the awareness, causal factors and frequency of occurrence of reproductive tract infections among married women of rural areas.

Methods: The study is a facility based quantitative study held in a private clinic in

Khyber Agency. Married women of reproductive age (16-45 years) were interviewed regarding reproductive tract infections. The women were questioned about their symptoms, frequency and knowledge about RTI's. The questionnaire was filled through Google forms. The study used the World Health Organization's (WHO) syndromic approach guideline to collect information on previous RTI symptoms. SPSS software was used for the analysis.

Results: In about 130 women in rural areas, 58.5% women had been aware of the term Reproductive tract infection while 41.5% women had never heard of it. When asked about their knowledge of information about transmission of RTI's, out of 130 only 32.3% women had knowledge regarding it. The study also collected data of their menstrual hygiene in which 72.3% of the women were using reusable cloth. 63.1% of the women were not using contraceptive methods among the population. The major symptoms of RTI that they were facing were vaginal discharge and vaginal itching followed by dysuria and dyspareunia. The frequency of RTI was found to be 56.9% among married women of Khyber agency in which 43.1% percent of the females had a recurrence.

Conclusion: The frequency of RTI's was very high among rural women of Khyber Agency and the main reason behind it was the lack of awareness, lack of knowledge of its prevention and transmission, low menstrual hygiene status and limited access to healthcare. The importance of early identification, effective medical care in reducing problems and enhancing women's reproductive health cannot be overstated.

Keywords: Reproductive tract infections, menstrual hygiene, sexually transmitted infections.

PG-PP-83 – The Impact Of Glucagon-Like Peptide-1 Agonists On Acne, Hidradenitis, And Sebaceous Activity

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Background & Objectives: Glucagon-like peptide-1 receptor agonists are increasingly used for the management of obesity and type 2 diabetes mellitus and exert important metabolic and anti-inflammatory effects. Emerging evidence suggests these agents may also influence inflammatory dermatologic conditions such as acne and hidradenitis suppurativa, as well as sebaceous gland activity; however, prospective data remain limited.

Methods: This study evaluated the effects of glucagon-like peptide-1 receptor agonist therapy on acne severity, hidradenitis suppurativa activity, and sebaceous gland function, and assessed their association with metabolic improvement. A prospective, single-arm observational study was conducted between January 2023 and December 2024 among adults aged 18–65 years initiating therapy.

Results: Dermatologic outcomes were assessed using standardized acne grading systems, validated hidradenitis severity scores, and quantitative sebumetry at baseline and follow-up visits over 24 months. Metabolic parameters, including body mass index, glycated hemoglobin, fasting glucose, and insulin levels, were recorded concurrently. Of the 120 participants enrolled, 110 completed follow-up. Significant reductions were observed in acne severity, hidradenitis suppurativa activity, and sebaceous gland output, alongside marked improvements in metabolic indices. Improvements in body mass index and glycaemic control showed significant correlations with dermatologic improvement. Adverse events were mild and transient, with no serious safety concerns identified.

Conclusion: These findings suggest that glucagon-like peptide-1 receptor agonist therapy is associated with meaningful improvement in inflammatory skin conditions and sebaceous gland activity and support further controlled studies to clarify its role in dermatologic practice.

Keywords: glucagon-like peptide-1 agonists, acne, hidradenitis suppurativa, sebaceous gland activity, metabolic improvement, dermatology

PG-PP-84 – Translational Pharmacology Of Traditional Antidiabetic Plants:

Mechanisms, Clinical Evidence, And Therapeutic Potential

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Background & Objectives: Diabetes mellitus, afflicting over 500 million people worldwide, requires safe, effective treatments. Traditional plants, such as *Momordica charantia* (bitter melon), *Trigonella foenum-graecum* (fenugreek), *Syzygium polyanthum*, *Gymnema sylvestre*, *Panax ginseng*, and *Cinnamomum verum* (cinnamon), contain powerful antidiabetic compounds. Studies from 2020–2025 merge ethnomedicinal wisdom with advanced pharmacological methods, confirming their potential to manage blood glucose levels effectively. To investigate the antidiabetic capabilities of traditional plants, focusing on their active compounds, mechanisms, and therapeutic prospects while pinpointing research gaps.

Methods: A comprehensive review of 2020–2025 literature from PubMed, Springer, and Frontiers, using search terms like “traditional antidiabetic plants 2020-2025,” examined bioactive molecules, mechanisms, and efficacy data. In silico modeling, in vitro assays, in vivo experiments, and clinical trials were analyzed to evaluate effectiveness and standardization hurdles.

Results: Active compounds—charantin (*Momordica charantia*), 4-hydroxyisoleucine (*Trigonella foenum-graecum*), myricetin-3-O-rhamnoside (*Syzygium polyanthum*), gymnemic acids (*Gymnema sylvestre*), ginsenosides (*Panax ginseng*), and cinnamaldehyde (*Cinnamomum verum*)—block α -glucosidase (IC_{50} 10–50 μ g/mL), inhibit DPP-IV, and boost GLUT4-driven glucose uptake and β -cell repair. In vivo STZ-

rat models showed fasting glucose drops (13.81 mg/dL) and HbA1c reductions (0.8–1.2%). Clinical trials with herbal blends enhanced insulin response by 20–30% and lowered postprandial glucose by 25%. Nano-delivery systems improved bioavailability by 30%.

Conclusion: Traditional plants offer potent antidiabetic solutions, validated by modern science. Expanded clinical studies and standardized protocols will drive their integration into global diabetes care, advancing phytotherapy.

Keywords: Diabetes mellitus, Antidiabetic medicinal plants, Bioactive phytochemicals, α -glucosidase inhibition, GLUT4 activation, Insulin sensitization, Phytotherapy, Nanoformulations

PG-PP-85 – Understanding Knowledge, Perception, And Implementation Of Hand Hygiene Measures Among Healthcare Professionals At Hayat Medical Complex

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Background & Objectives: In healthcare settings, hand hygiene is essential to preventing infections and ensuring patient safety. Healthcare professionals' (HCPs') poor adherence to established guidelines by the World Health Organization (WHO) and the Centers for Disease Control (CDC) contributes to the spread of healthcare-associated infections (HAIs). Improving adherence and patient outcomes requires identifying knowledge and practice gaps. This study sought to evaluate reported hand hygiene practices, measure knowledge, and

investigate attitudes among various healthcare professional categories at Hayat Medical Complex.

Methods: A descriptive cross-sectional study was conducted among 218 HCPs, including doctors, nurses, and paramedical staff, using non-probability convenience sampling. Data were collected via a structured questionnaire based on the WHO “Hand Hygiene Knowledge Questionnaire for Health Care Professionals” and self-administered questionnaire for attitude and practice. Descriptive statistics, t-tests, ANOVA, and Chi-square tests were used for analysis, with significance set at $p < 0.05$.

Results: The study found that healthcare professionals demonstrated moderate knowledge of hand hygiene guidelines, with 55.5% showing satisfactory knowledge, while 43.1% had good and 1.4% poor knowledge. Attitudes were generally positive, with 62% of participants exhibiting favorable attitudes, but adherence to proper practices was suboptimal, with only 44% consistently following recommended hand hygiene practices. Notably, prior training was significantly associated with higher knowledge and practice scores ($p < 0.05$).

Conclusion: A measurable gap between knowledge and practice of hand hygiene among HCPs at Hayat Medical Complex. Targeted interventions, including frequent training, resource allocation, and performance monitoring, are required to increase compliance and minimize HAIs.

Keywords: Hand hygiene, healthcare professionals, knowledge, practice, infection

control, compliance

PG-PP-86 – Unveiling The Threat: Tuberculosis Prevalence And Risk Factors In Peshawar

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Background & Objectives: Tuberculosis remains a major public health concern in Pakistan, particularly in densely populated and socioeconomically vulnerable cities such as Peshawar, where environmental conditions and limited access to healthcare contribute to ongoing transmission. This study aimed to determine the prevalence of tuberculosis in Peshawar and identify key demographic, socioeconomic, environmental, and health-related risk factors associated with infection.

Methods: A cross-sectional study was conducted from January to December 2024, involving 2,600 participants, including confirmed tuberculosis patients and non-infected individuals. Data were collected through structured interviews and medical record reviews from public and private healthcare facilities, tuberculosis clinics, and community health centers. Variables analyzed included age, gender, socioeconomic status, education level, smoking history, diabetes, malnutrition, overcrowding, and access to healthcare services.

Results: Statistical analysis revealed a tuberculosis prevalence of 0.413, with higher infection rates among males and individuals aged 25 to 45 years. Tuberculosis was strongly associated with low socioeconomic status, illiteracy, smoking, diabetes, malnutrition, overcrowded living conditions, and limited healthcare access.

Conclusion: These findings highlight the persistent burden of tuberculosis in Peshawar and emphasize the role of poverty, lifestyle factors, chronic disease comorbidity, and inadequate health infrastructure in sustaining transmission. The study underscores the need for early detection programs, targeted public awareness initiatives, strengthened healthcare systems, and integrated management of tuberculosis and non-communicable diseases. Addressing socio-economic inequalities and improving access to diagnostic and preventive services may significantly reduce the disease burden.

Keywords: Tuberculosis, Prevalence, Risk Factors, Peshawar, Public Health

PG-PP-87 – Urinary Tract Infections In Patients With Heart Failure And Type 2 Diabetes Mellitus Receiving SGLT2 Inhibitors

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Background & Objectives: Diabetes mellitus (DM) is a metabolic disease. Chronic hyperglycemia in patients with diabetes mellitus can cause damage, most prominent of which are microvascular (retinopathy, nephropathy, and neuropathy) and macro vascular complications and increased risk of cardiovascular diseases. The aim of this study to determine the frequency of urinary tract infections in patients with both heart failure and type 2 diabetes mellitus receiving SGLT2 inhibitors.

Methods: Do not include bullets/lists or

references in the abstract. There should be no citations in abstract. The first part of your abstract should state the problem or issue you set out to solve and explain your rationale for pursuing the research. The purpose of your study is to solve this problem and/or add to your discipline's understanding of the issue. Your abstract should also describe the research methods.

Results: Among 78 diabetic patients, 60.7% were males and 39.3% were females and the mean age was 56.19±8.7 years. Frequency of UTI among diabetic and heart failure patients taking SGLT-2 inhibitors was 6.4%. Association of UTI with age and gender was found statistically significant while association of UTI with duration of diabetes and SGLT2 inhibitors was found statistically insignificant.

Conclusion: This study examined UTIs in type 2 diabetes and heart failure patients taking SGLT-2 inhibitors. The use of SGLT2 inhibitors did not increase the likelihood of developing a urinary tract infection however should be used with appropriate caution and monitoring.

Keywords: type 2 diabetes mellitus, urinary tract infection, sodium glucose co-transporter 2 inhibitors (sGLT2i), Congestive Heart Failure.

PG-PP-88 – Use Of Low-Level Laser Therapy To Enhance Graft Integration In Urethral Reconstruction

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Background & Objective: Low-level laser therapy (LLLT) is recognized for enhancing

cellular activity, reducing inflammation, and stimulating angiogenesis, thereby promoting tissue repair and regeneration. In urethral reconstruction, graft integration is often hindered by inadequate blood supply, persistent inflammation, fibrotic tissue formation, and delayed epithelial healing, which can compromise graft survival and functional outcomes. This study investigates the potential of LLLT as an adjunctive therapy to improve graft incorporation and postoperative results in urethral reconstructive procedures.

Methods: In this controlled study, patients undergoing urethral reconstruction were divided into two groups: control group receiving standard postoperative care and an experimental group receiving additional LLLT. Laser therapy was applied locally over the graft site during the postoperative period to stimulate cellular metabolism and neovascularization. Clinical evaluation, histological assessment, and functional testing were performed. Parameters analyzed included graft viability epithelial regeneration, inflammatory response, tissue remodeling, and urinary flow characteristics.

Results: The LLLT-treated group demonstrated superior graft integration compared with controls, including enhanced vascularization, reduced inflammatory infiltration and accelerated epithelial coverage. Histological analysis showed improved collagen organization and tissue maturation. Clinically, patients experienced fewer postoperative complications, higher graft survival, and better urinary flow. Early recovery of normal voiding and greater postoperative comfort were also observed. No adverse effects from LLLT were reported confirming its safety.

Conclusion: LLLT is a safe, noninvasive adjunct that improves graft integration and healing quality in urethral reconstruction. Its use may enhance surgical success and patient outcomes. Further large-scale studies are

warranted to refine treatment protocols and assess long-term benefits.

Keywords: Low-level laser therapy, urethral reconstruction, graft integration, photo biomodulation, wound

PG-PP-89 – Use Of Smokeless Tobacco Among The Staff Of Tertiary Care Hospitals Peshawar, Pakistan

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Background & Objectives: Smokeless tobacco (SLT) products are those form of tobacco intended to be sucked, chewed or inhaled by the user, rather than burned and consists of chewing tobacco, moist snuff (naswar), dry snuff, ghutka, and betel quid (paan). Smokeless tobacco (SLT) is known to have many toxic and carcinogenic components which alters the whole body physiology leading to disastrous effects. Smokeless tobacco (SLT) use is prevalent in the community and its social acceptance is a major health concern for the health care system. The aim of the study is to observe the pattern of use of smokeless tobacco among the staff of tertiary care hospitals including medical professionals, and determine any awareness and cessation methods, so that we can gain better insight into why smokeless tobacco remains prevalent.

Methods: This is a cross-sectional study designed to determine the use of

smokeless tobacco in two tertiary care hospitals of Peshawar; Hayatabad Medical complex (HMC) and Rehman Medical Institute (RMI). Data was collected through convenient sample

technique after consent was taken from the staff members. Questionnaires, which included demographic information, presence or absence of SLT use, factors associated, as well as awareness and cessation, were distributed among the research team members who interviewed 500 staff members. Data analysis was done by using SPSS 25.0.

Results: In this study, data from 500 respondents with mean age 30.28 were collected, out of which 243 (48.6%) individuals were from Rehman Medical Institute (RMI) and 257 (51.4%) were from Hayatabad Medical Complex (HMC). A total of 88 Doctors, 122 paramedical staff and 290 class IV staff were interviewed. It was found that only 108 individuals (22%) were SLT users, out of which majority of the users (82 individuals) were Class IV staff members. Factors that were associated with SLT use were determined such as occupation, education, socioeconomic status and age of initiation. Occupation of respondents did show a positive association with SLT use, when the results were analyzed using the Pearson-Chi Square test where doctors were less likely and class IV staff were more likely to use with a significant difference of ($p < 0.001$). Age of initiation revealed that majority of the users began use in their adolescence. Low education level and lower socioeconomic status also revealed an association with SLT use ($p < 0.01$).

Conclusion: Although a small fraction of the staff members used SLT, factors such as age and occupation played a vital role in influencing SLT use. The diseases related to it are just beginning to surface, so it is essential to overcome this socially accepted habit and avoid the disease burden in Pakistan. Due to its low cost and easy availability, medical professionals and legislative bodies should make it a high priority to create targeted awareness and cessation programs and implement taxes on SLT. In addition,

orientation programs regarding the hazardous effects of SLT should be arranged for Class IV working in hospitals. Only then can a positive change begin in the hospitals, affecting the health care system and eventually the community

Keywords: Smokeless tobacco, Tertiary care hospitals, Hospital staff, Doctors

PG-PP-90 – Vaccine Effectiveness And Major Risk Factors Associated With Measles Among Children Presenting To Tertiary Care Hospitals Of Peshawar City, Pakistan: A Matched Case-Control Study

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Background & Objectives: Measles infection is highly contagious caused by a virus in the paramyxovirus family and transmitted by air borne droplet produced during coughing or sneezing. Despite the fact that measles vaccine is easily available and already included in EPI, Measles is still a leading cause of death among children in Pakistan where annually 2.1 million children develop Measles infection and more than 19,000 suffer with disease fatality or complications. Pakistan is included among World Health Organization's 47 high priority regions for Measles control. To determine the major risk factors associated with the development of measles among children less than 10 years of age presenting to the tertiary care hospitals of Peshawar city. To find out the effectiveness of measles vaccine after its first and second dose among children less than 10 years of age presenting to the tertiary care hospitals of Peshawar city.

Methods: It was a matched case control study conducted in tertiary care hospitals of Peshawar. Cases and controls were matched for

age and gender. A total of 270 sample (135 cases and 135 controls) was collected by Non-probability consecutive sampling technique via a structured questionnaire. The data was analyzed using SPSS version 20.0. Ethical approval was taken prior to the study.

Results: The total sample size was 270 with 135 cases and 135 controls matched pairs with age and gender. The mean age of cases was 19.44 months. Measles cases were more likely to have never received vaccination [OR: 1.2, 95% CI: 0.96-1.56]. Children with measles were also more likely to be not given breast milk in the initial two years of life. [OR: 1.1, 95% CI, 0.75-1.55]. 38.5% of the cases & 62% of the controls were malnourished. [OR: 0.45, 95% CI 0.27-0.75]. The children of uneducated mothers were more likely to be unvaccinated. Measles Vaccine effectiveness for single dose was found to be 56% while for two doses it was approximately 60%.

Conclusion: Measles disease was more common in males. It was most common in unvaccinated children, less common in those who received just one dose & least common in those who received complete vaccination. Mothers of majority of the unvaccinated cases lacked formal education. For measles reduction, awareness regarding full doses of vaccination and breastfeeding is required.

Keywords: Measles disease, air borne, vaccine

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UG-VC-1-A Cross-Sectional Survey Of Barriers For Dentists In Adopting Computer-Controlled Local Anesthesia In Islamabad, Pakistan

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Background & Objectives: In dentistry, pain and anxiety related to traditional syringe-based local anesthetic continue to be major obstacles that frequently impact patient comfort and treatment acceptance. Computer-controlled local anesthesia (CCLA) systems have been created to provide anesthetic solutions at a regulated flow rate and pressure. There is little data on the challenges dentists confront when integrating CCLA into their regular practice, and despite its benefits, the technology is still not widely adopted in Pakistan. The purpose of this study is to determine the perceived obstacles that dentists have when implementing CCLA.

Methods: A descriptive cross-sectional study was conducted on 102 licensed dentists who were actively engaged in clinical dentistry, including those employed by private clinics, public hospitals, and educational institutions. Data on demographics, CCLA awareness and understanding, and perceived obstacles like cost, training, availability, maintenance, and patient acceptance were gathered using a systematic, self-administered questionnaire.

Results: Descriptive statistics and inferential tests such as ANOVA, t-test, and chi-square were used to examine the data; $p < 0.05$ was considered statistically significant. The findings showed limited CCLA awareness, with 24.5% of respondents expressing little to no understanding and 61.8% having heard of the technology but lacking any official training. The main obstacles were cited as high cost (82.4%), limited availability (71.6%), and lack of training opportunities (76.5%). Maintenance (58.8%) and patient acceptance (49.0%) issues were also mentioned. Specialists were more knowledgeable than general practitioners, and 64.7% of dentists indicated willingness to adopt CCLA if training and cost issues were resolved. These results underscore the need for focused educational programs, greater accessibility, and organized training activities by highlighting the disconnect between clinical practice and technological innovation.

Conclusion: In order to facilitate the incorporation of CCLA into standard dentistry practice and to modernize anesthetic administration in Pakistan, larger surveys and pilot implementation initiatives are required.

Keywords: Dentists, Local anesthesia, Barriers, Pakistan, CCLA, Survey

UG-VC-2-A Scalable Alternative To U-Net For Real-Time Brain Tumor Detection Using The Detection Transformer With Slicing-Aided Inference

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Background & Objectives: Most researchers still rely on U-Net for brain tumor tasks, but it is often too slow and computationally heavy for catching tiny, early-stage lesions in large MRI volumes. The objective of this study is to move away from slow pixel-by-pixel segmentation and toward a high-speed detection framework that maintains accuracy for the smallest anomalies. Our pipeline uses the Detection Transformer (DETR) to handle the heavy lifting of localization by utilizing its global transformer context. Since early-stage tumors are often lost during standard image resizing and down sampling.

Methods: we integrated Slicing Aided Hyper Inference (SAHI) to slice the scans into high-resolution patches, keeping the detail high where it matters most. We then applied the ByteTrack algorithm to link these detections across sequential MRI slices, making sure the model sees the brain as a consistent 3D volume rather than just isolated, disconnected pictures.

Results: Testing this pipeline on the BraTS dataset, we found that this detection-and-

tracking approach catches small anomalies with significantly higher precision while running much faster than traditional U-Net benchmarks. Specifically, the model maintains a high mean Average Precision even for lesions smaller than ten pixels, which are typically filtered out by traditional downsampling methods.

Conclusion: This approach offers a much more practical and scalable way to handle real-time clinical screening in high-pressure hospital environments. By shifting the focus from dense masks to efficient bounding box sequences, this project contributes a new Methods for volumetric medical analysis that prioritizes both speed and early-stage sensitivity.

Keywords: Brain Tumor, DETR, SAHI, ByteTrack, MRI, Detection

UG-VC-3-Antibiogram And Bacterial Resistance Pattern In Blood Among Pediatric Patients At Saidu Group Of Teaching Hospital

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Background & Objectives: Bloodstream infections (BSIs) remain a primary driver of pediatric morbidity and mortality in developing regions, where the rapid emergence of antimicrobial resistance (AMR) increasingly leads to empirical

treatment failure. At Saidu Group of Teaching Hospital (SGTH) in Swat, Pakistan, the absence of recent local antibiogram data has created a critical gap in clinical decision-making.

Methods: This retrospective, cross-sectional study was conducted to determine the bacterial spectrum and antimicrobial resistance patterns of blood culture isolates to provide evidence-based guidance for empirical therapy. We reviewed laboratory records for all positive blood cultures (n=402) obtained from pediatric patients aged 1 month to 15 years between January 1, 2024, and October 31, 2024. Isolates were identified and susceptibility testing was performed in strict adherence to Clinical and Laboratory Standards Institute (CLSI) guidelines.

Results: The analysis identified *Salmonella* Typhi as the overwhelmingly dominant pathogen, responsible for 61.2% (n=246) of infections, followed by *Burkholderia cepacia* (22.9%, n=92). The *S. Typhi* strains exhibited a profound Extensively Drug-Resistant (XDR) phenotype, with resistance rates of 90.2% to Ampicillin, 90.6% to Ciprofloxacin, and 91.1% to Ceftriaxone. High efficacy was preserved only for Azithromycin (98.0% susceptible) and Meropenem (99.2% susceptible). Additionally, *B. cepacia* demonstrated multi-drug resistance, including 91.3% resistance to Colistin.

Conclusion: These findings confirm a local epidemic of XDR *S. Typhi*, rendering traditional empirical regimens with third-

generation cephalosporins obsolete. Immediate revision of hospital stewardship guidelines is necessary to adopt Azithromycin and Meropenem as first-line options, while the unexpected prevalence of *B. cepacia* warrants urgent infection control investigation.

Keywords: Pediatric Sepsis, Antimicrobial Resistance, *Salmonella* Typhi, XDR, *Burkholderia cepacia*, Antibiogram

UG-VC-4-Assessing The Misuse Of Gloves, Hand Hygiene Compliance And Associated Risk Of Microbial Transmission Among Healthcare Workers

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Background & Objectives: Healthcare-associated infections (HAIs) remain a persistent challenge in clinical environments worldwide, often stemming from lapses in infection-prevention practices, among which improper glove use and inadequate hand hygiene are key contributors to microbial transmission between patients and healthcare workers. This study aimed to assess the prevalence, patterns, and determinants of glove misuse and hand hygiene compliance among healthcare professionals in a tertiary care hospital setting.

Methods: A cross-sectional descriptive study was conducted among 100 healthcare professionals, including doctors, nurses,

surgeons, anesthesia staff, postgraduate residents, and surgical assistants. Data were collected using a structured, self-administered questionnaire evaluating glove-use behavior, hand hygiene practices, and related beliefs. Statistical analysis incorporated both descriptive and inferential methods, including chi-square tests to examine associations between compliance and demographic/training variables. **Results:** Results showed that 47% of participants demonstrated good compliance, 47% moderate, and 6% poor. High adherence was observed for hand hygiene after glove removal ($M = 4.24$, $SD = 1.26$) and after contact with body fluids ($M = 4.30$, $SD = 1.18$); however, inconsistent practices were noted in performing hand hygiene before glove use ($M = 3.16$, $SD = 1.56$) and when changing gloves between tasks ($M = 3.88$, $SD = 1.25$). Training emerged as the only variable significantly associated with good compliance ($\chi^2 = 4.05$, $p = 0.044$). While overall compliance with glove and hand hygiene practices was satisfactory, critical gaps persist, particularly in glove misuse and pre-use hand hygiene.

Conclusion: Continuous training, regular monitoring, and institutional reinforcement are essential to sustain safe practices and reduce infection risks in healthcare settings.

Keywords:

Healthcare-associated infections (HAIs), Glove misuse, Hand hygiene compliance, Infection prevention, Training, Healthcare professionals

UG-VC-5-Association Between Professional Self-Concept and Clinical Decision-Making Among Nurses in Tertiary Care Hospitals In Peshawar, Pakistan

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Background & Objectives: Professional Self-Concept (PSC) is a nurses' internalized values and beliefs that influence nurses' roles and capabilities. In high pressure environments like tertiary care hospitals, a nurse's PSC may significantly impact their ability to make accurate and prompt clinical decisions, which is crucial for patient safety and standard of care. This study aims to determine the correlation between professional self-concept and clinical decision making (CDM) among nurses working in tertiary care hospitals in Peshawar, Pakistan.

Methods: The study was conducted in Two (2) tertiary care hospitals in Peshawar, Pakistan, using analytical cross-sectional study design. The calculated sample size was $n=275$ selected via Non-Probability Convenience Sampling Technique. An informed consent was presented, and anonymity was guaranteed to all the participants. Data were collected using a structured self-reported questionnaire consists of Demographic variables of the

participants, Nurses Professional Self-concept (NPSC) scale and Clinical Decision-making (CDM) scale. Frequency(N) and Percentages (%) were calculated for levels of NPSC and CDM. Spearman's rho (ρ) correlation was applied to find the association between NPSC and CDM, whereas linear regression was used to predict changes in CDM (Dependent Variable) by NPSC (Independent Variable).

Results: The Mean scores and standard deviation of NPSC and CDM were 1.99 ± 0.82 and 1.99 ± 0.83 respectively. The level analysis showed a uniform distribution of participants across NPSC levels with 93 (33.6%) having low PSC, 92 (33.2%) moderate PSC and 90 (32.5%) high PSC. Similarly CDM levels were evenly distributed with 95 (34.3%) showing poor CDM, 88 (31.8%) average CDM and 92 (33.2%) excellent CDM. Spearman's rho (ρ) correlation analysis revealed a moderate, positive and clinically significant relationship between NPSC and CDM ($\rho=0.547$, $p<0.001$). Linear regression analysis showed that NPSC significantly predicted CDM ($\beta=0.55$, $p<0.001$), explaining 29.8% of the variance in CDM ($R^2=0.30$).

Conclusion: The findings of this study show moderate, positive and statistically significant relation between professional self-concept and clinical decision-making among nurses. This emphasizing the importance of strengthening professional identity in nursing practice. Improving professional self-concept through strong mentorship, positive self-reflection and building professional skills may enhance

nurses' clinical decision-making and ultimately improve healthcare delivery.

Keywords: Professional self-concept; Clinical decision-making; Nurses; Association;

UG-VC-6-Awareness, Barriers And Strategies For Dash Diet Adoption In Hypertensive Patients At A Tertiary Care Hospital In Rawalpindi

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Background and Objectives: Hypertension, a major preventable risk factor for cardiovascular disease in Pakistan, remains inadequately managed due to the underutilization of effective lifestyle interventions such as the DASH diet. DASH diet, which emphasizes fruits, vegetables, whole grains, low-fat dairy, and sodium restriction, helps control blood pressure and reduces the risk of cardiovascular disease, diabetes, and obesity. The objective of this study is to evaluate awareness of DASH diet among hypertensive patients and to assess the barriers and strategies to overcome the hindrances in implementing the DASH diet.

Methods: This cross-sectional analytical study conducted in Pak Emirates Military Hospital, Rawalpindi included 377 hypertensive patients (95% CI, $\pm 5\%$ margin of error) calculated via Raosoft. A validated, 27 items questionnaire was used which

adopted a four-rating scale with response categories of: Strongly Disagree (1.00-1.49), Disagree (1.50-2.49), Agree (2.50-3.49) and Strongly Agree (3.50-4.00). Items with mean score above 2.50 were accepted while items below 2.50 were rejected. Data was analyzed using SPSS version 27.0. with Chi Square test and one way ANOVA being used for statistical analysis

Results: A significant association was observed between awareness level and education level of the participants (p value <0.05). Factors such as financial constraints, limited health literacy and scarcity of registered dietitian served as significant barriers to DASH diet awareness. Several key strategies such as public awareness campaigns, combined with counselling tailored to the patient's literacy level could help overcome these barriers.

Conclusion: Higher education levels were associated with greater knowledge of the DASH diet among hypertensive patients in a Rawalpindi tertiary hospital. Adoption was hampered by both non-modifiable factors like age and modifiable factors like inadequate nutritional education and counseling, but tailored strategies and widespread education campaigns were recommended to improve its utilization

Keywords: Awareness, Dietary Approach to Stop Hypertension (DASH), Barriers

UG-VC-7-Caries Prevalence And Salivary Ph Patterns In Preschool Children: A Cross-Sectional Study In Abbottabad

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Background and Objective: Childhood caries is a widespread, yet easily preventable, oral health problem among children. Saliva plays a crucial role in maintaining the oral pH, and alterations in salivary pH can predispose or precipitate the development of dental caries. Thus we want to study if there is any link between salivary pH and dental caries.

Methods: A cross-sectional study conducted at Royal Edwards Montessori, Abbottabad, over a 2-month period, following ethical approval by the Institutional Review Board of FMDC. 100 children were sampled by convenience method and evaluated in terms of unstimulated salivary samples and pH indicator strips, and a self-administered questionnaire on oral hygiene and dietary habits. The DMFT index to check dental caries.

Results: 68 % of the participants had acidic salivary pH and 78 percent of the children had caries. In the acidic pH, in 80.9 percent of the children there were caries, whereas in children with non-acidic saliva the percentage was 71.9, which is a statistically significant difference ($p < 0.001$). The prevalence of caries was significantly higher in the Kindergarten children (83.1%) compared with the Grade 1 children (70.7%).

Children who brushed twice a day or more showed a reduced rate of caries.

Conclusion: The research indicates that non-invasive methods can contribute to the early diagnosis of children with caries risk and emphasizes the necessity of primary oral health prevention on the community level.

Keywords: Caries, Preschool, children, salivary pH

UG-VC-8-Clinical Evaluation Of The Efficacy And Safety Of Trans Scleral Diode Laser Cyclophotocoagulation (Tscpc) In Managing Raised Intraocular Pressure In Glaucoma Patients With Preserved Visual Acuity

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Background & Objectives: Glaucoma management centers on controlling intraocular pressure (IOP) to prevent vision loss. While trabeculectomy is the standard surgical approach, refractory cases often necessitate Transscleral diode laser cyclophotocoagulation (TSCPC). The objective of this study is to evaluate the efficacy of transscleral diode laser cyclophotocoagulation in lowering intraocular pressure and its safety with respect to postoperative complications in glaucoma patients with preserved

baseline visual acuity.

Methods: This prospective interventional study at the Armed Forces Institute of Ophthalmology enrolled 240 patients (95% CI, $\pm 5\%$ margin of error) calculated via Raosoft, with refractory glaucoma and visual acuity of 6/36 or better. Using an 810-nm diode laser, 16–20 spots were applied per session under peribulbar anesthesia. Outcomes assessed included the mean reduction in intraocular pressure (IOP), the percentage of patients meeting success criteria ($\geq 20\%$ reduction and final IOP ≤ 21 mmHg), and the incidence of postoperative complications such as uveitis, corneal edema, cataract formation, and hypotony. The data was analyzed using SPSS version 27.0.

Results: TSCPC significantly reduced mean IOP from 47.6 ± 8.7 mmHg to 17.2 ± 4.0 mmHg at two months ($p < 0.001$). While repeat treatment was significantly associated with postoperative uveitis ($p = 0.010$), no significant links were found between quadrants treated and cataracts ($p = 0.749$) or lens status and corneal edema ($p = 0.051$). Overall, the procedure was well-tolerated with a 62.7% mean IOP reduction.

Conclusion: TSCPC provides effective and sustained intraocular pressure reduction with minimal, self-limiting complications, supporting its role as a safe intermediate treatment for refractory glaucoma in patients with preserved visual potential.

Keywords: Glaucoma, Intraocular Pressure, Cyclophotocoagulation, Lasers, Semiconductor, Visual Acuity

UG-VC-9-Clinicodemographics Profile, Histopathological Spectrum And Post Operative Outcomes Of Brain Tumor Patients: A Prospective Analysis From A Tertiary Care Center

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Background & Objective; To analyze the clinicodemographic characteristics, histopathology report and postoperative outcomes in terms of complications, tumor recurrence and improvement of patients undergoing surgery for brain tumors.

Methods: This prospective observational study was conducted in neurosurgery department Lady Reading Hospital Peshawar from 1st January 2024 to 25 November 2025. Detailed data were collected using a pre-designed proforma. All those patients who has brain tumor and managed surgically were included in the study. Patients clinical, demographical data were collected. Patients post op histopathology report and outcomes were were assessed 2 weeks after surgery.

Results: Among the 109 brain tumor patients included in the study, the majority were aged between 21 and 50 years, with a slight female predominance (55.05%). Frontal lobe tumors

were the most common (28.44%), followed by infratentorial (20.18%) and sellar/parasellar (19.27%) lesions, with left-sided tumors being more frequent (39.45%). Meningioma was the most common histopathological diagnosis (21.10%), followed by oligodendroglioma (9.17%) and pituitary adenoma (7.34%), although histopathology was unavailable in 27.52% of cases. Postoperatively, 81.65% of patients showed clinical improvement, while 11.01% deteriorated and 7.34% remained unchanged; overall mortality was 11.01%. Most patients had satisfactory postoperative outcomes (67.89%), with pneumocephalus, hematoma, and edema being the most frequent complications. The mean preoperative Glasgow Coma Scale score was 14.68 ± 0.94 , and the mean hospital stay was 16.02 ± 15.96 days.

Conclusion: Early diagnosis, accurate histopathological classification, and timely surgical intervention play a critical role in improving patient outcomes. The findings contribute valuable regional data and may help in optimizing the management strategies for brain tumor patients in tertiary care settings.

Keywords: Clinicodemogrphics profile, Histopathology, Post operative outcomes, Brain tumor

UG-VC-10-Closed-Loop Ai Therapeutics: Deep Reinforcement Learning For Optimizing Insulin Dosing During Ramadan Fasting And High-Glycemic South Asian Diets

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Background & Objectives: Diabetes management in South Asia presents a unique and underexplored challenge due to the coexistence of carbohydrate-dense, high-glycemic-index diets and prolonged intermittent fasting periods such as Ramadan. Conventional insulin dosing strategies and linear bolus calculators fail to capture the nonlinear metabolic effects of complex meals and fasting-induced insulin sensitivity shifts, leading to frequent hypoglycemia or sustained hyperglycemia. This study proposes a closed-loop, model-free artificial intelligence therapeutic approach using deep reinforcement learning to autonomously optimize insulin delivery under these conditions.

Methods: A Soft Actor–Critic reinforcement learning agent was developed and trained within a validated physiological simulation environment using digital twin patients with heterogeneous insulin sensitivities. The simulation framework was augmented to replicate culturally specific disturbances, including rapid post-Iftar glucose excursions and extended fasting intervals from Sehri to Iftar.

Results: The agent continuously adjusted basal and bolus insulin dosing with the objective of maximizing glycemic time in range (70–180 mg/dL) without reliance on manual carbohydrate counting. Across extensive simulated test scenarios, the

proposed system outperformed standard clinical sliding-scale insulin protocols in 92% of cases. During the critical post-Iftar period, peak hyperglycemic excursions were reduced by an average of 35 mg/dL compared to conventional therapy. Notably, the reinforcement learning policy achieved a zero incidence of severe hypoglycemia (<54 mg/dL), whereas standard protocols exhibited a 4.5% failure rate during fasting hours. The agent demonstrated robust adaptive behavior when exposed to unplanned dietary deviations, maintaining glycemic stability through anticipatory insulin modulation.

Conclusion: These findings highlight a paradigm shift from static decision-support tools to autonomous, adaptive AI therapeutics, offering a viable pathway toward smart insulin delivery systems tailored to South Asian lifestyles and religious practices.

Keywords: Deep reinforcement learning, artificial pancreas, diabetes mellitus, Ramadan fasting, digital twins, personalized medicine

UG-VC-11-Does Structured Teaching Improve Thyroid Awareness in Adolescent Females? A Pre- And Post-Intervention Study

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Background & Objectives: Thyroid hormones regulate metabolism, protein synthesis, and neurodevelopment across most tissues. Globally underdiagnosed, thyroid disorders pose heightened risks for women: iodine deficiency can increase infertility, pregnancy loss, and fetal developmental harm. Although diet is vital for thyroid health, women often lack nutritional awareness and tailored guidance, with educational disparities further complicating prevention. This highlights the urgent need for targeted thyroid education and dietary support. This study aimed to evaluate adolescent females' baseline knowledge, awareness, and attitudes toward thyroid disorders, and to assess the effectiveness of a structured teaching program in promoting early detection and prevention.

Methods: This interventional study was conducted in selected schools and colleges of Rawalpindi District among adolescent females using purposive sampling over five months (March–July 2025). The sample size was 250 (95% CI, $\pm 5\%$ margin of error) calculated via Raosoft. Pre- and post-intervention validated questionnaires measured program impact. Data were analyzed using SPSS 27 (Wilcoxon test for non-normal data, $p < 0.01$) with descriptive statistics (median, IQR), and results were presented in tables and graphs. Ethical approval and consent were obtained, excluding healthcare workers.

Results: Baseline data showed only 40% used iodized salt. Pre-intervention knowledge scores were low (median= 7, IQR 3–9.75), improving post-intervention

(median=13, IQR 12–13; $Z=11.822$, $p < 0.001$). Attitudes improved (pre: 21, post: 24; $Z=9.831$, $p < 0.001$), and health-seeking behavior rose from 71.7% to 94.8%.

Conclusion: The structured teaching program significantly enhanced adolescents' knowledge, attitudes, and health-seeking behaviors, demonstrating its role in early identification and prevention of thyroid disorders.

Keywords: Effectiveness, teaching program, adolescents, thyroid disorders

UG-VC-12-Dose-Dependent Efficacy And Safety Of Olezarsen (Tryngolza) In Hypertriglyceridemia: A Systematic Review And Meta-Analysis With Extensive Subgroup Analyses

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Background and Objectives: Hypertriglyceridemia is prevalent in adults and increases the risk of atherosclerotic cardiovascular disease and acute pancreatitis, while current triglyceride-lowering therapies

show inconsistent efficacy and tolerability. This study systematically evaluated the efficacy and safety of olezarsen, an antisense oligonucleotide targeting apolipoprotein C-III (ApoC-III), in adults with hypertriglyceridemia.

Methods: A systematic review and meta-analysis of randomized controlled trials comparing olezarsen with placebo was conducted. PubMed, Embase, Cochrane Library, and ClinicalTrials.gov were searched from inception to November 25, 2025. The primary outcome was percentage change in serum triglycerides (TG). Secondary outcomes included lipid and apolipoprotein parameters, achievement of TG <150 mg/dL, and safety outcomes. Risk of bias was assessed using the Cochrane Risk of Bias 2.0 tool, and random-effects models were applied.

Results: Five RCTs (six comparisons) involving 2,744 participants were included. Olezarsen significantly reduced TG levels (mean difference -55.42%; 95% CI -60.37 to -50.46; $p < 0.00001$), with consistent efficacy at 50 mg and 80 mg doses. The likelihood of achieving TG <150 mg/dL was markedly increased (RR 6.98). Significant reductions were observed in ApoC-III, ApoB, VLDL-C, non-HDL-C, and remnant cholesterol, with increases in ApoA1 and HDL-C. Overall adverse events were comparable to placebo, although injection-site reactions increased dose-dependently, while acute pancreatitis was reduced.

Conclusions: Olezarsen demonstrates robust triglyceride lowering and favorable lipid

modulation with an acceptable safety profile. The 50 mg dose provides the optimal balance of efficacy and tolerability. Longer-term studies are needed to confirm durability of benefit and cardiovascular outcomes.

Keywords: Hypertriglyceridemia; Olezarsen; Apolipoprotein C-III; Triglycerides; Meta-analysis; Systematic review; Cardiovascular risk.

UG-VC-13-Effect of Peer Pressure on Postpartum Depression; A Cross-Sectional Study in Selected Private and Public Hospitals Of Peshawar

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Background & Objectives: Postpartum depression (PPD) according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) is classified as a major depressive disorder that can occur during or 4 weeks after pregnancy. Peer pressure, an issue encountered in Asian communities due to the close family structures may have a role in aggravating PPD. The objective of our study was to assess the severity of PPD in those women who experienced peer pressure in comparison to those who did not, using the EPDS.

Methods: A cross-sectional study with a sample size of 186 was conducted in selected private and public hospitals of Peshawar from May 2023 to October 2023. Women

who had delivered through natural vaginal delivery in the past 2 years in the age range 18-45 years, were willing to participate, had no prior history of depression, and had no complications during labor were included in the study. Two validated questionnaires; The Edinburgh Postnatal Depression Scale (EPDS) and The Social Pressure for Pregnancy Scale were used to collect data. The data were analyzed using SPSS version 27. Descriptive statistics were done for frequencies, Chi-square analysis for testing dependence, and student t-test for comparing means keeping $p < 0.05$. The odds ratio was also calculated.

Results: Among depressed women, 63% (n=59) were pressured. While among non-depressed, 24%(n=22) were pressured (OR=5.6). hence, the cases were 5.6x more likely to be exposed to peer pressure as compared to controls. A highly significant association between EPDS scores and perceived social pressure was found (Pearson Chi-Square = 70.603, $p = <0.001$; Likelihood Ratio = 87.788, $p < 0.001$). Furthermore, there was a significant correlation between EPDS scores and pressure from friends ($p=0.001$) and co-wives($p<0.001$).

Conclusions: There is a noteworthy relationship between peer pressure for pregnancy and the risk of getting postnatal depression. Subgroup analysis revealed that social pressure exerted by friends and co-wives is highly implicated in the development of postpartum depression.

Keywords: Postpartum Depression, Post-Natal Depression, Influence Peer, Peer Pressure.

UG-VC-14-Effectiveness of Educational Interventions on Maternal Knowledge, Perceptions, And Satisfaction Regarding Neonatal Danger Signs: A Mixed-Method Three-Arm Randomized Controlled Trial

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Background & Objectives:

Poor maternal recognition of neonatal danger signs with delayed health seeking contributes to neonatal deaths. Therefore, maternal awareness through effective health education is essential to promote timely hospital care. To compare mothers' knowledge of neonatal danger signs across audiovisual, verbal counselling, and pamphlet-based education. Assess maternal satisfaction with the intervention. To evaluate and compare knowledge improvement from baseline to 28 days post-intervention. To explore mothers' perceptions of the assigned education method at 28 days

Methods: A mixed method RCT was conducted among 246 mothers, admitted to tertiary healthcare hospitals in Peshawar from Dec 2025 to March 2026. Participants were allocated by block randomization to audiovisual education, doctor-led verbal counselling or pamphlet-based education (control). Knowledge was assessed at baseline and after 28 days using validated questionnaires, alongside assessment of maternal satisfaction (CSQ-8). A qualitative phenomenological component involved 20

interviews analyzed using Braun and Clarke's thematic analysis, while SPSS Version- 26 used for data entry, descriptive and inferential statistics.

Results: Mean scores of baseline knowledge of primary danger signs across Video, Verbal and Pamphlet were 25.07 ± 10.14 , 26.5 ± 10.6 , 26.1 ± 11.5 . Knowledge after intervention was 43.8 ± 6.4 , 45.65 ± 5.2 , 43.8 ± 6.4 which represents a knowledge increase of 37.5%, 38.3%, 35.4%. Mean scores of baseline knowledge of secondary danger signs were 20 ± 8.5 , 20.24 ± 8.5 , 20.1 ± 8.2 , while after intervention was 29.3 ± 6.3 , 31.7 ± 4.3 , 30 ± 6.8 depicting a knowledge increase of 29.06%, 35.8%, 30.9%. The satisfaction scores were 30 ± 2.7 , 30.1 ± 2.4 , 30.4 ± 2.1 . Thematic analysis gave 65 codes translating to 6 themes.

Conclusion: A significant improvement in maternal knowledge of neonatal danger signs, high satisfaction and audio-visual with verbal counselling highlighted as the effective method.

Keywords: Neonatal danger signs, maternal knowledge, health education

UG-VC-15-Effectiveness of Low-Dose Combination Therapy Versus Standard Care In Reducing Symptoms Among Hypertensive Patients: A Systematic Review And Meta-Analysis

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Background & Objectives: Hypertension remains a leading global risk factor for cardiovascular morbidity and mortality, and suboptimal blood pressure control continues to be a major challenge despite the availability of effective antihypertensive therapies. Low-dose combination therapy has emerged as a promising strategy to improve blood pressure control while minimizing adverse effects.

Methods: This systematic review and meta-analysis aimed to evaluate the effectiveness and safety of low-dose combination antihypertensive therapy compared with placebo or standard care among adult hypertensive patients. The review was conducted in accordance with PRISMA 2020 guidelines and included randomized controlled trials involving adults aged ≥ 18 years with diagnosed hypertension. Comprehensive searches of PubMed, Scopus, Web of Science, ClinicalTrials.gov, and the Cochrane Central Register of Controlled Trials were performed from inception to October 23, 2025.

Results: Data were synthesized using random-effects meta-analysis, and outcomes were expressed as mean differences and risk ratios with 95% confidence intervals. A total of 12 studies comprising 5,049 participants were included. Low-dose combination therapy resulted in a greater reduction in systolic blood pressure at short-term follow-up (4–12 weeks) compared with placebo and

standard care, as well as a sustained reduction at 6–12 months. Patients receiving low-dose combinations were significantly more likely to achieve target blood pressure levels below 140/90 mmHg than those receiving comparators. Although heterogeneity was observed across studies, overall findings consistently favored low-dose combination therapy. Adverse events, including dizziness, pedal edema, musculoskeletal complaints, and headache, were generally comparable between groups, indicating acceptable tolerability.

Conclusion: In conclusion, low-dose combination antihypertensive therapy is more effective than placebo or standard care in achieving blood pressure control without a substantial increase in adverse effects. These findings support the incorporation of low-dose combination regimens into clinical practice and future hypertension management guidelines.

Keywords: Hypertension, antihypertensive therapy, PubMed

UG-VC-16-Efficacy of Dichoptic Therapy Versus Patching in The Treatment of Amblyopia: A Systematic Review and Meta-Analysis

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Background & Objectives:

Amblyopia is the leading cause of preventable visual impairment in children.

While patching remains standard treatment, dichoptic therapy has emerged as a promising alternative by addressing interocular suppression. This review compares the efficacy of dichoptic therapy versus conventional patching.

Methods:

A systematic search across PubMed, Embase, Scopus, ScienceDirect, and the Cochrane Library identified 2,056 studies. Seventeen randomized controlled trials (RCTs) involving 1,237 participants met inclusion criteria. Outcomes assessed included best-corrected visual acuity (VA), stereoacuity, and treatment adherence. Meta-analyses were conducted using random-effects models, with subgroup analyses by intervention type and treatment duration. Study quality was assessed using the Cochrane RoB-2 tool.

Results:

Dichoptic therapy showed a small and clinically insignificant improvement in VA compared to patching (MD = 0.04 logMAR; 95% CI: 0.00 to 0.07; $p = 0.04$; $I^2 = 88\%$). Enhanced outcomes were observed with game-based or virtual reality methods and durations ≥ 6 months. No significant differences were found in adherence (RR = 0.97; $p = 0.58$) or stereoacuity (MD = 0.10 arcsec; $p = 0.38$).

Conclusions:

Dichoptic therapy is an effective and engaging alternative to occlusion therapy, particularly beneficial for patients with poor compliance to patching.

Keywords: preventable visual impairment, Dichoptic therapy, **Amblyopia**.

UG-VC-17-Efficacy Of Once-Weekly Insulin Efsitora Versus Once-Daily Basal Insulin In Type 2 Diabetes: A Systematic Review And Meta-Analysis

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Background & Objectives: Once-weekly insulin efsitora is a novel basal insulin formulation developed to provide sustained glycaemic control with reduced injection frequency, potentially improving treatment adherence among individuals with type 2 diabetes mellitus. However, evidence regarding its comparative efficacy and safety remains limited.

Methods: This systematic review and meta-analysis aimed to evaluate the efficacy and safety of once-weekly insulin efsitora compared with once-daily basal insulin in adults with type 2 diabetes mellitus. A comprehensive search of PubMed, Embase, and Scopus was conducted up to July 6, 2025 to identify randomized controlled trials comparing once-weekly insulin efsitora with once-daily basal insulin. Primary outcomes included changes in glycated haemoglobin, fasting plasma glucose, total weekly insulin dose, and achievement of glycated haemoglobin targets, while secondary outcomes included time in glycaemic target range, hypoglycaemia, and adverse events.

Results: Data were pooled using a random-effects model, and effect estimates were reported as mean differences or odds ratios with 95% confidence intervals. Seven randomized controlled trials comprising 4,170 participants were included, with 2,347 receiving insulin efsitora and 1,877 receiving once-daily basal insulin. At 26 weeks, reductions in glycated haemoglobin were comparable between treatment groups. At 52 weeks, insulin efsitora demonstrated a statistically significant greater reduction in glycated haemoglobin and a significantly lower change in total weekly insulin dose compared with once-daily basal insulin. Time in the target glucose range showed a non-significant numerical increase, while time above range was significantly reduced with insulin efsitora. Rates of hypoglycaemia, serious adverse events, injection-site reactions, and hypersensitivity reactions were similar between groups, although a non-significant numerical

increase in major adverse events was observed with insulin efsitora.

Conclusion: Overall, once-weekly insulin efsitora demonstrated comparable short-term efficacy and superior long-term glycaemic outcomes with an acceptable safety profile. Further long-term and real-world studies are required to confirm sustained efficacy, safety, and cost-effectiveness.

Keywords: type 2 diabetes mellitus, basal insulin, once-weekly insulin, glycaemic control, meta-analysis, randomized controlled trials

UG-VC-18-Identifying Factors Associated With High-Risk Obstructive Sleep Apnea (Osa) Among Hypertensive Patients: A Case-Control Study In A Tertiary Care Hospital In Pakistan

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Background& Objective:

Obstructive sleep apnea (OSA) is a prevalent but largely underdiagnosed sleep-related breathing disorder characterized by recurrent upper airway collapse, intermittent hypoxia, and sleep fragmentation. Its coexistence with hypertension is well established and is associated with increased cardiovascular morbidity. In low- and middle-income countries, limited access to polysomnography results in missed or delayed diagnosis, emphasizing the need for

reliable clinical screening tools and identification of key risk factors.

This study aimed to identify determinants of high-risk OSA among hypertensive patients in a tertiary care setting in Peshawar, Pakistan.

Methods:

A case-control study was conducted from 1st June to 1st September 2025 at Rehman General Hospital and Rehman Specialist Hospital, Peshawar. A total of 156 hypertensive participants were recruited using consecutive sampling (78 cases and 78 controls). High-risk OSA was defined using the STOP-BANG questionnaire (score ≥ 3 with additional risk criteria). Data on sociodemographic variables, BMI, neck circumference, and comorbidities were collected. Statistical analysis included independent t-tests, Chi-square tests, and binary and multivariable logistic regression using SPSS.

Results:

Participants had a mean age of 54.3 ± 13.1 years. On bivariate analysis, age, male gender, BMI, neck circumference, and ischemic heart disease were significantly associated with high-risk OSA. However, multivariable analysis identified older age, male gender, and increased neck circumference as independent predictors.

Conclusion:

Older age, male gender, and larger neck circumference are independent determinants of high-risk OSA among hypertensive patients. The STOP-BANG questionnaire is a practical screening tool in resource-limited settings. Incorporating simple

anthropometric measures into routine hypertension care may facilitate early identification of OSA and reduce cardiovascular risk.

Keywords: Hypertension, Obstructive sleep apnea, STOP-BANG.

UG-VC-19-Modulating Tumor-Associated Macrophages in Solid Tumors: A Comparative Narrative Review of Csf1R Inhibition Versus Cd47Sirp± Axis Blockade

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Background & Objectives: The treatment of cancer has been revolutionized by immune checkpoint inhibitors; however, they still do not produce sufficient results in immunologically “cold” tumors, which are characterized by low T-cell infiltration and a highly immunosuppressive tumor microenvironment. Tumor-associated macrophages (TAMs), specifically the M2 phenotype, play a crucial role in immune evasion, resistance to therapy, and tumor progression in various solid cancers. Therefore, macrophage-targeted immunotherapeutic strategies have emerged as a possible approach to overcome innate immune suppression and modulate the tumor microenvironment.

Methods: This narrative review critically examines two major macrophage-directed

strategies, colony-stimulating factor-1 receptor (CSF1R) inhibition and CD47–signal regulatory protein alpha (CD47–SIRPα) axis blockade, concentrating on their biological mechanisms, preclinical and clinical evidence, safety profiles, resistance pathways, and translational potential in solid tumors. A thorough review of preclinical studies, translational research, and early-to-late phase clinical trials was carried out, with analysis emphasizing TAM modulation, therapeutic efficacy, resistance mechanisms, combination strategies, and emerging biomarker-guided approaches.

Results: CSF1R-targeted therapies primarily act through depletion or reprogramming of immunosuppressive TAMs, leading to transient tumor control and enhanced responsiveness to T-cell-based immunotherapies, particularly in combination regimens. In contrast, CD47–SIRPα blockade restores macrophage-mediated phagocytosis and antigen presentation, facilitating coordinated innate and adaptive immune activation, although its clinical application is frequently constrained by hematologic toxicity and compensatory immune checkpoint upregulation. Both strategies demonstrate tumor-type-specific efficacy and are susceptible to resistance driven by TAM plasticity, alternative myeloid recruitment pathways, and intratumoral heterogeneity. Biomarkers such as CSF1/IL-34 levels, CD47 expression gradients, Fcγ receptor polymorphisms, and single-cell or spatial transcriptomic signatures show promise for patient stratification.

Conclusion: Overall, CD47–SIRP α blockade demonstrates broader innate–adaptive immune engagement but faces greater toxicity barriers, whereas CSF1R inhibition appears best suited as a sensitizing backbone in combination regimens.

Keywords: tumor-associated macrophages, CSF1R inhibition, CD47–SIRP α , solid tumors, immunotherapy

UG-VC-20-Muointegration Around Dental Implants, A Clinical Approach To Prevent Periimplantitis

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Background & Objectives: Muointegration is a critical biological phenomenon governing the long-term stability and health of dental implants, particularly in the prevention of peri-implantitis. Unlike natural teeth, dental implants lack periodontal ligament attachment and exhibit reduced vascular supply, rendering peri-implant tissues more vulnerable to bacterial insult and inflammatory breakdown. The objective of this presentation is to highlight the clinical importance of muointegration and its role in establishing a stable soft-tissue seal that protects underlying osseointegration.

Methods: This oral presentation is supported by clinical cases demonstrating both

successful and compromised peri-implant soft-tissue outcomes. Case-based analysis focuses on key factors influencing muointegration, including soft-tissue thickness, width of keratinized mucosa, implant positioning, abutment design, emergence profile, and transmucosal healing protocols. Clinical methods emphasizing atraumatic surgical techniques, prosthetically driven implant placement, controlled provisionalization, and soft-tissue preservation were employed to optimize peri-implant mucosal stability.

Results: The observed outcomes indicate that implants surrounded by adequate keratinized tissue, proper emergence profile, and stable connective tissue attachment demonstrate reduced plaque accumulation, minimal inflammation, and improved resistance to peri-implant disease. Conversely, compromised muointegration was associated with increased peri-implant mucositis and early peri-implantitis changes.

Conclusion: The findings underscore the significance of muointegration as a preventive strategy rather than a secondary corrective measure. Clinically optimizing muointegration enhances peri-implant tissue health, facilitates maintenance, improves esthetic outcomes, and significantly reduces the risk of peri-implantitis. Understanding and integrating muointegration principles into routine implant therapy is essential for achieving predictable and long-term implant success.

Keywords: Muointegration, Dental

implants, Peri-implantitis, Soft tissue seal, Keratinized mucosa, Emergence profile

UG-VC-21-Outcomes Of Intrathecal/Intraventricular And Intravenous Colistin In Post-Surgical Meningitis And Ventriculitis Due To Carbapenem-Resistant Gram-Negative Bacteria: A Five-Year Retrospective Study At A Quaternary Care Hospital Of Pakistan

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Background & Objectives: Carbapenem-resistant Gram-negative bacilli (CR-GNB) central nervous system (CNS) infections are difficult to manage due to limited treatment options and poor outcomes. Colistin remains a last-resort therapy, but optimal use and safety data are scarce, necessitating real-world evidence to inform practice. To evaluate the effectiveness and safety of intravenous (IV) and intrathecal/intraventricular (ITH/IVT) colistin in the treatment of CR-GNB meningitis and ventriculitis at a quaternary care hospital.

Methods: This retrospective study at Shifa International Hospital (March 2020–June 2025) included patients with culture-confirmed CR-GNB meningitis/ventriculitis who received IV plus ITH/IVT colistin for ≥ 48 hours. Colistin doses ranged from 2–4.5 MIU/day IV (renal-adjusted as needed) and 125,000–250,000 IU/day

intrathecal/intraventricular. Outcomes assessed were clinical cure (symptom resolution with two negative CSF cultures), mortality, acute kidney injury (AKI; KDIGO criteria), adverse events, and 90-day readmissions. Statistical analyses included Chi-square/Fisher's exact test for categorical variables and independent t-test for continuous variables; significance was set at $p < 0.05$.

Results: A total of 41 patients were included. Clinical cure was achieved in 29 patients (70.7%, $\chi^2 p = 0.02$). The mean IV colistin duration was 27.9 ± 21.4 days, and ITH/IVT therapy averaged 20.8 ± 16.9 days. Four patients (9.8%) died within 14 days and six (14.6%) within 30 days; 5 (12.2%) were readmitted within 90 days. AKI occurred in 8 patients (19.5%), significantly associated with longer therapy (34.6 ± 18.2 vs. 25.3 ± 12.9 days, t-test $p = 0.03$) and higher mortality (37.5% vs. 9.1%, Fisher's exact $p = 0.02$). Dose optimization, particularly renal-adjusted regimens, showed a positive trend toward clinical cure, though logistic regression was limited by small sample size. Other adverse events included seizures ($n=2$, 4.9%) and chemical meningitis ($n=1$, 2.4%). The most common pathogens were *Acinetobacter baumannii* (21, 52%), *Klebsiella pneumoniae* (9, 22%), *Pseudomonas aeruginosa* (6, 15%), and *Escherichia coli* (5, 11%), with significantly different cure rates by organism ($p = 0.04$), lowest in *K. pneumoniae* infections.

Conclusion: IV and ITH/IVT colistin demonstrated reasonable cure rates and survival in CR-GNB CNS infections, though

nephrotoxicity and other adverse effects warrant close monitoring. Renal-adjusted dosing may improve outcomes, but findings should be interpreted with caution given the modest sample size. Larger prospective studies are needed to refine dosing strategies and enhance safety.

Keywords: Intrathecal/Intraventricular , Intravenous Colistin, Post-Surgical Meningitis, Ventriculitis, Carbapenem-Resistant UG-VC-22-Paediatric Psychiatry In Pakistan

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Background & Objectives:

Child mental health in Pakistan is a pressing concern yet often overlooked issue. There is a large youth population yet an alarming shortage of paediatric psychiatrists. Approximately 15–20% of children in Pakistan suffer from mental health conditions which often go undiagnosed and untreated resulting in significant distress and negative impact on functioning. Key challenges include severe shortage of paediatric psychiatrists, lack of awareness, stigma/cultural barriers, risk factors, adverse childhood experiences and gender disparities.

Methods: Addressing child mental health in Pakistan is an urgent and time-critical issue requiring a multifaceted approach including increased investment, community-based

initiatives and public awareness campaign. The future of children's mental health in Pakistan requires urgent, collective and collaborative action between paediatricians, psychiatrists, educators, government officials and community leaders.

Results: This is crucial to drive change and hinges on continued investment in healthcare infrastructure, mental health education and community engagement. By challenging societal stigma, expanding access to services, integrating mental health with physical healthcare, leveraging on existing setups and robust policies, Pakistan can create a supportive environment for its youth.

Conclusion: With these crucial steps and ongoing efforts, children's mental health must be prioritized alongside their physical health. In this way, Pakistan can begin to address the mental health needs of its younger population to improve the future for the children of Pakistan.

Keywords: paediatricians, psychiatrists, mental health

UG-VC-23-Paving Way for Antimicrobial Stewardship: Early Susceptibility of Testing Meropenem And Ceftriaxone Against Clinical Isolates Of Typhoidal Salmonella Among Patients Of A Tertiary Care Hospital

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Background & Objectives: Typhoid fever caused by *Salmonella enterica* remains a major public health concern in Asia, with rising multidrug-resistant and extensively drug-resistant strains. As a WHO priority pathogen, timely antimicrobial susceptibility testing is essential to guide therapy. Early initiation of appropriate therapy in bloodstream infections reduces morbidity, mortality, hospital stay, and resistance. This study checked for early susceptibility of meropenem and ceftriaxone against typhoidal *Salmonella* to support prompt therapeutic decisions.

Methods: This cross-sectional study was conducted at a Tertiary care hospital in Rawalpindi (MAY-OCT 2025). All blood cultures -positive for *Salmonella* Typhi and Paratyphi were included using non-probability convenience sampling, while duplicates were excluded. Positive blood cultures on Bactec or BHI broth detected by automated system were subcultured, and antimicrobial susceptibility testing was performed according to CLSI guidelines using the Kirby–Bauer disk diffusion method on Mueller–Hinton agar. Zone diameters for meropenem and ceftriaxone were recorded at 10 hours for early susceptibility assessment and compared with standard 24-hour readings. Categorical agreement and error rates between early and standard results were analyzed using SPSS version 27.

Results: Seventy-five *Salmonella* Typhi isolates were analyzed, predominantly male (72%) and aged 1–30 years (60%). Comparison of early (10-hour) and standard (24-hour) susceptibility results for

meropenem and ceftriaxone showed categorical agreement in 96 (64.0%) of 150 comparisons. No very major errors (VMEs) were observed. Major errors occurred in 51 (34.0%) and minor errors in 3 (2.0%) comparisons. Agreement was poor for meropenem ($\kappa=0.040$) and slight but statistically significant for ceftriaxone ($\kappa=0.226$, $p<0.001$).

Conclusion: Early susceptibility testing showed no very major errors, suggesting early reporting is unlikely to compromise patient safety. However, high major error rates limit its use as a standalone method. Early results may offer preliminary guidance in urgent cases, but standard testing remains essential to ensure accurate antimicrobial stewardship and optimal patient care.

Keywords: salmonella, antibiotic stewardship, susceptibility

UG-VC-24-Pharmacist Interventions In Clinical Practice: An Observational Analysis

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Background & Objective: Medication errors are a global concern, causing preventable harm, prolonged hospital stays, and increased healthcare costs. Pharmacist-led interventions are crucial in preventing these errors, ensuring safer prescribing, improving outcomes, and promoting cost-

effective care. Evaluating their impact is essential for optimizing patient safety practices.

Methods: A retrospective study was conducted at Shaukat Khanum Memorial Cancer Hospital and Research Centre, Peshawar, analyzing 13,651 pharmacist-led interventions from January to June 2025. Data on interventions addressing prescribing errors were collected by reviewing documented prescriptions.

Results: A total of **13,651** interventions were documented: 55% in females and 45% in males. Most occurred in outpatient (n=8,057; **59%**) and inpatient (n=5,594; **41%**) settings. Internal Medicine contributed the largest share (n=6,848; **50.2%**), followed by Medical Oncology (n=2,306; **16.9%**) and Pediatric Oncology (n=1,623; **11.9%**). Adults accounted for **86.5%**, pediatrics **13.5%**. The most frequent interventions were inappropriate dose (n=5,215; **38.2%**), inappropriate schedule (n=3,701; **27.1%**), and dosage calculation errors (n=807; **5.9%**), mostly in solid (**51%**), parenteral (26%), and liquid (**18%**) forms. Top drugs included paracetamol (**12%**), omeprazole (**7%**), and metoclopramide (**6%**). Acceptance was high (**93.4%**), with minimal rejection (**2.9%**). From an economic standpoint, the interventions resulted in an estimated **cost saving of about 4 million PKR over six months. 3.55 million PKR** saved from general overall interventions and **0.44 million PKR** saved from Pharmacist-Led IV-to-Oral Interventions. Chi-square tests confirmed significant associations across

specialties, patient groups, and intervention types (**p<0.001**).

Conclusion: Pharmacist-led interventions markedly improved prescribing safety, with high prescriber acceptance and substantial cost savings. By primarily targeting dose- and schedule-related errors, pharmacists played a pivotal role in optimizing therapy, preventing medication errors, and promoting safer, more cost-effective care in oncology and other complex clinical settings.

Keywords: Pharmacist interventions, Medication errors, Patient safety, Prescribing errors, Oncology.

UG-VC-25-Prevalence Of Impostor Syndrome Among Day Scholars And Boarders In Public And Private Medical Colleges Of Abbottabad, Pakistan

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Background & Objectives: Impostor Phenomenon (IP), commonly referred to as impostor syndrome, is a psychological pattern characterized by persistent self-doubt and fear of being exposed as intellectually fraudulent despite objective success. It is particularly prevalent in highly competitive academic environments such as medical colleges; however, limited data are available from Pakistan. This study aimed to determine the prevalence of impostor syndrome among medical students in Abbottabad and to

compare its occurrence between day scholars and boarders studying in public and private medical colleges.

Methods: A cross-sectional analytical study was conducted among 316 medical students enrolled in three institutions: Ayub Medical College (public), Women Medical College, and Abbottabad International Medical Institute (private). Data were collected using a structured questionnaire incorporating the Clance Impostor Phenomenon Scale (CIPS), with scores ≥ 62 indicating significant impostor syndrome. **Results:** Statistical analysis was performed using SPSS version 27, applying descriptive statistics, Chi-square tests, and one-way ANOVA where appropriate. Overall, 59.5% of participants demonstrated significant impostor syndrome. A significantly higher prevalence was observed among day scholars (65.7%) compared to boarders (52.1%) ($\chi^2 = 6.03$, $p = .014$). Students from the public medical college showed the highest prevalence (69.2%), followed by private institutions ($\chi^2 = 8.01$, $p = .018$). No significant gender-based differences were identified ($p = .836$). A borderline significant variation in mean CIPS scores across academic years was observed ($F = 2.40$, $p = .050$), with senior students exhibiting higher scores.

Conclusion: These findings indicate a high burden of impostor syndrome among medical students in Abbottabad, particularly among day scholars and those enrolled in public institutions, underscoring the need for institution-specific psychological support and stress-management interventions.

Keywords: Impostor syndrome, medical students, day scholars, CIPS, Pakistan

UG-VC-26-Relationship Between Oral Health and Breast Cancer: A Rarely Studied Link

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Background & Objectives: Breast cancer is a leading cause of morbidity among women often presenting with lumps, nipple discharge, skin dimpling and axillary node enlargement. Dental caries is a chronic, multifactorial disease caused by acid producing bacteria which leads to enamel demineralization. Reduced salivary flow, altered taste sensation, white spot lesions are commonly reported in medically compromised individuals including those with breast cancer. While there is a relationship between the oral cavity and systemic diseases, there is no direct relationship between breast cancer and oral health. The objective of this study is to assess oral manifestations after breast cancer diagnosis before treatment, perceived association with breast changes, awareness of oral- systemic health and to provide evidence for the need of preventative health programs in breast cancer patients.

Methods: This cross sectional study included 112 adults in which 44.6% were breast cancer patients. Oral health was examined via questionnaires and also clinical examination.

Results: Data was then analyzed to compare breast cancer and non breast cancer participants. Higher rates of breast cancer were reported among the middle aged and elderly. Fair to poor self reported oral health was more common among breast cancer patients. In addition to this, decayed, missing and filled teeth were more common among breast cancer patients meaning that the breast cancer patients had a higher DMFT index. Also, altered taste sensations, tooth pain, black or white spots were more common among the breast cancer group. Moreover, some participants reported an increase in dental caries after their breast cancer diagnosis. In summary, the study observed that breast cancer patients often reported fair to poor oral health, higher DMFTs as well as altered taste sensations.

Conclusion: Although this does suggest that oral health should be monitored in breast cancer patients, further analysis is needed to confirm any direct associations.

Key words: Breast cancer, Oral health, Oral-systemic, Dental caries

UG-VC-27-Sleep Deprivation and Burnout Among College Students

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Background & Objectives:

Sleep deprivation has become increasingly prevalent among college students due to academic workload, social media use, and lifestyle pressures, raising concerns about its impact

on academic performance and psychological well-being. This study aimed to examine the prevalence of sleep deprivation and its relationship with academic burnout and academic performance among undergraduate students.

Methods: A quantitative, cross-sectional correlational design was used, and data were collected from 524 undergraduate students across multiple colleges in Pakistan using a structured questionnaire distributed both online and physically through convenient sampling. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), and academic burnout was measured using the Maslach Burnout Inventory-Student Survey (MBI-SS). Academic performance was evaluated through self-reported GPA.

Results: Data were analyzed using SPSS version 26, employing descriptive statistics, Pearson correlation, and multiple regression analysis. Results indicated that 60% of students experienced poor sleep quality, highlighting the high prevalence of sleep deprivation. Poor sleep quality showed a significant positive correlation with emotional exhaustion ($r=0.45, p<0.001$) and a significant negative association with GPA ($\beta=-0.28, p<0.001$). Regression analysis further revealed that emotional exhaustion significantly predicted lower GPA ($\beta=-0.32, p<0.01$). Overall, sleep quality and burnout variables explained 22% of the variance in academic performance ($R^2 = 0.22$). These findings suggest that sleep deprivation contributes to academic burnout, particularly emotional exhaustion, which indirectly affects academic performance.

Conclusion: The study concludes that promoting healthy sleep habits and effective time management strategies may help reduce burnout and improve academic outcomes.

Keywords:

Sleep deprivation, academic burnout, GPA, college students, sleep quality, academic performance

UG-VC-28-Efficacy of Gentamicin Wound Irrigation for The Prevention of Surgical Site Infections in Neurosurgery: A Systematic Review and Meta-Analysis

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Background And Objectives: SSI remain a major postoperative complication in neurosurgery. This metaanalysis investigates the potential protective effects of gentamicin against SSI

Methods: A systemic literature review was carried out using databases like PubMed, Cochrane, and Embase to identify comparative studies (RCTs and observational cohort studies) evaluating the efficacy of gentamicin irrigation against SSI in both craniotomies and spinal surgeries. The primary outcome studied was the incidence of SSI. Secondary outcomes were depth of infection (superficial and deep) . Statistical analyses were done using a random effects model, and the pooled risk ratio of each outcome was reported with a 95% confidence interval.

Results: One RCT and two observational cohort studies comprising 620 patients with

evaluation of infection in 28 days were included in the analysis. Our pooled analysis demonstrate a 60% relative risk reduction in SSI in patients with gentamicin irrigation in contrast to standard normal saline irrigation. However, this trend does not achieve statistical significance and carries moderate heterogeneity ($I^2=54\%$). The observed non-significance ($p=0.11$) is primarily attributable to marked methodological heterogeneity(54%) and the inclusion of divergent study designs, which collectively shifted the pooled estimate toward the line of no effect.

Conclusion: Although there is a positive trend in a reduction of SSI in gentamicin irrigation, this does not achieve statistical significance. However, large multicenter prospective RCTs are required to clarify its clinical utility, particularly in neurosurgical procedures.

Keywords: Gentamicin, Normal saline, Surgical site infections, Neurosurgery, Meta analysis

UG-VC-29-Development And Evaluation Of A Polyherbal Antidiabetic Formulation In Streptozotocin-Induced Diabetic Rats

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Background & Objectives: Diabetes mellitus is a widespread metabolic disorder, and polyherbal formulations are increasingly explored due to their multitarget activity and reduced side effects. This study aimed to

develop a polyherbal tea bag formulation containing *Ichnocarpus frutescens*, *Ficus dalhousie*, *Crateva magna*, *Alpinia galangal*, and *Swertia chiraita*, and evaluate its antidiabetic potential in streptozotocin-nicotinamide-induced diabetic rats.

Methods: The formulation was standardized and administered orally at 200 mg/kg/day for 21 days. Blood glucose, serum insulin, and liver enzymes (SGOT and SGPT) were measured pre- and post-treatment. ADMET profiling and molecular docking were performed to predict pharmacokinetics, toxicity, and receptor interactions of key phytoconstituents. Results demonstrated a significant reduction in blood glucose ($p < 0.001$), improvement in insulin levels, and normalization of liver enzymes, indicating hepatoprotective effects.

Results: Molecular docking suggested strong binding of active compounds with α -glucosidase and PPAR- γ receptors, supporting the proposed mechanism of action. ADMET analysis revealed favorable absorption, distribution, metabolism, excretion, and low toxicity. In conclusion, the polyherbal formulation effectively improved glycemic control, enhanced metabolic markers, and demonstrated a promising safety profile, highlighting its potential as a complementary therapy for diabetes management.

Conclusion: These findings provide a basis for further clinical evaluation and integration of standardized polyherbal formulations in metabolic disease management.

Keywords: polyherbal formulation, antidiabetic activity, streptozotocin diabetes, phytochemicals, pharmacological evaluation

UG-VC-30-Direct Oral Anticoagulants Versus Warfarin For Prevention Of Venous Thromboembolism In Primary Nephrotic Syndrome: A Systematic Review

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Background and Objectives: to compare direct-acting oral anticoagulants with warfarin for the prevention of venous thromboembolism in adolescents and adults with nephrotic syndrome.

Methods: PubMed, Cochrane Library, and LIVIVO were searched on 29th June 2025. Randomized controlled trials and quasi-experimental studies comparing direct-acting anticoagulants with warfarin for the prevention of venous thromboembolism in adolescents and adults with nephrotic syndrome were selected. Exclusion criteria included case reports/ series, secondary nephrotic syndrome, and the use of additional anticoagulants. The incidence of venous thromboembolism, bleeding complications, and other adverse effects was compared between the two treatment options. Risk of bias assessment was through the Cochrane risk of bias tool.

Results: From the 55 records, only one study with nine participants met the inclusion

criteria. Meta-analysis was thus not possible. No VTE events or bleeding complications were observed in either treatment group during the study period. There were some concerns about the randomization process and the reporting of results.

Conclusion: Definite conclusions are difficult to draw because of limited data and a lack of VTE or bleeding events among the very few included patients. Till the time more evidence is available, the choice of anticoagulant therapy should be decided by clinicians based on an assessment of all individual risk factors.

Keywords: Nephrotic Syndrome, Venous Thromboembolism, Direct Oral Anticoagulants, Warfarin.

UG-VC-31-Adjunctive Vitamin D Supplementation In Tuberculosis Treatment: A Systematic Review And Meta-Analysis Of Sputum Conversion And Clinical Outcomes

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Background & Objectives: Tuberculosis remains a major global public health burden, particularly in low- and middle-income countries, despite the availability of effective antitubercular therapy. Treatment challenges such as delayed sputum conversion,

prolonged treatment duration, drug resistance, and poor adherence necessitate the exploration of adjunctive therapies. Vitamin D, known for its immunomodulatory properties, has been proposed as a low-cost and accessible intervention to enhance host immune response against Mycobacterium tuberculosis. This systematic review and meta-analysis aimed to evaluate the effectiveness and safety of adjunctive vitamin D supplementation in improving sputum conversion and clinical outcomes among patients with tuberculosis.

Methods: A comprehensive literature search was conducted across multiple electronic databases to identify randomized controlled trials evaluating vitamin D supplementation alongside standard antituberculosis therapy in adult patients. Fifteen eligible studies were included in the systematic review, of which eleven contributed data to the meta-analysis.

Results: Pooled analyses were performed using random- or fixed-effects models based on heterogeneity, and effect estimates were expressed as risk ratios and mean differences with 95% confidence intervals. Adjunctive vitamin D supplementation demonstrated a modest but consistent improvement in early sputum smear conversion, with low heterogeneity across studies. Culture conversion outcomes showed variable effects, while clinical symptom severity, assessed using tuberculosis scores, tended to improve during early follow-up. Vitamin D supplementation was generally well tolerated, with no serious adverse events attributable to its use. In conclusion, adjunctive vitamin D supplementation may

support earlier sputum conversion and symptom improvement in patients receiving antituberculosis therapy.

Conclusion: These findings suggest a potential role for vitamin D as a safe and affordable adjunct in tuberculosis management, although further large-scale trials are needed to define optimal dosing strategies and long-term benefits.

Keywords: Antituberculosis therapy, Tuberculosis, vitamin D.

UG-VC-32-Real-Time Dental Health Detection Using An Optimized Yolov11-Based Machine Learning Model

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Background & Objectives: This paper creates a real-time dental health detection system based on YOLOv11. Low understanding of early oral diseases in most emerging regions results in people depending on noticeable symptoms or irregular check-ups of the teeth. The suggested AI system will be capable of making a fast and precise assessment of the state of the teeth based on a single oral photograph. Its primary objective is to improve the accessibility, efficiency, and reliability of preliminary dental screening with the help of computer vision.

Methods: YOLOv11 is chosen due to the speed and high detection rate. The model

shall be trained with a labeled dataset of the most apparent dental indicators, such as the plaque, the state of the gums, tooth discoloration, quality of enamel, and the caries lesion stages. Preprocessing, augmentation, annotation, and optimization of data will result in an improved detection performance. The system will be tested to make sure that it is applicable in real-time by precision, recall, F1-score, and inference time. It should be possible to detect important dental signs with the help of reduced latency that YOLOv11 is anticipated to provide.

Results: The results will demonstrate the ability of the model to detect early pathological indicators that are usually overlooked in a non-clinical mode of observation. It is the first YOLOv11 that can be used to conduct the full-spectrum and real-time dental evaluation with standard images, providing fast, scalable, and inexpensive early diagnosis and preventative care, particularly in resource-constrained environments.

Conclusion: It is the first YOLOv11 that can be used to conduct the full-spectrum and real-time dental evaluation with standard images.

Keywords: Dental Health Detection, Artificial Intelligence (AI), Real-Time Screening, Oral Disease Diagnosis

UG-VC-33-Clinical Presentation Of Acute Leukaemia

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Background & Objective: To document the clinical presentation and epidemiology of various types of acute leukemia with their respective referral source at a tertiary level centre in Peshawar.

Methods: A total of 618 bone marrow biopsy reports were reviewed. All biopsy reports labeled as acute leukemia were reviewed for age, gender, address, referring unit, diagnosis on bone marrow examination, presenting complaints, duration of illness and findings of clinical examination.

Results: Ninety-two patients were diagnosed as suffering from acute leukemias (15%). ALL was most prevalent (46%), followed by AML (38%) and undifferentiated acute leukemia (16%). Males were affected more compared to females (60% vs. 40%). ALL and AML were predominant in pediatric (64%) and adults (77%) patients respectively. Patients from Afghanistan accounted for 33% of all cases followed by Peshawar (14%). Fever (77%), pallor (33%) and bleeding disorders (23%) were the main presenting complaints. Enlargement of liver, spleen and lymph nodes together was associated with ALL compared with AML ($p = 0.004$).

Conclusion: ALL-L1 and AML-M4 were the most common sub-types. Fever, pallor and bleeding disorders were the main presenting complaints. Enlargement of liver, spleen and lymph nodes was more frequently associated with ALL compared to AML.

Keywords: Bone marrow biopsy, lymph nodes, acute leukemias

UG-VC-34-Level Of Awareness And Understanding Of Ai In Healthcare Among Patients In Pakistan

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Background & Objectives: Artificial intelligence applications in healthcare currently encompass robotics, imaging studies, surgical assistance, and diagnostic chatbots which serve to analyze medical data and enhance patient care standards. In Pakistan, research has predominantly focused on healthcare professionals, leaving a critical gap regarding patient perspectives. This study aims to bridge that gap to assist policymakers and professionals in creating effective communication plans and educational materials.

Methods: A descriptive cross-sectional study was conducted among 280 inpatients and outpatients aged 13 to 60 years at Jinnah International and DHQ Hospital Abbottabad. Data was gathered through self-structured questionnaires using convenience sampling and analyzed via SPSS 27.

Results: Results revealed that while 59.3% of respondents had heard of artificial intelligence largely through social media, 47.9% could not identify specific applications. Patient trust appeared conditional and favored human oversight; although 48.2% agreed that artificial intelligence improves diagnostic accuracy and 49.6% felt comfortable with assisting

doctors, they were opposed to replacing human judgment entirely. The primary concern fueling hesitation was the risk of errors or misdiagnosis, cited by 30% of participants. The Chi square analysis confirmed that higher education is strongly associated with greater familiarity and willingness to use artificial intelligence tools, and a family background in technology or healthcare linked to higher trust. Conversely, no significant associations were found regarding age or gender.

Conclusion: To ethically integrate these technologies into the Pakistani healthcare system, stakeholders must prioritize awareness campaigns guided by credible medical experts, addressing patient doubts regarding feasibility while maintaining the central role of the human doctor.

Keywords: Artificial Intelligence, Patient Perception, Pakistan, Healthcare Technology, Medical Ethics

UG-VC-35-Predicting Patient Outcome In Critical Care Units Using Machine Learning: Enhancing Modified Early Warning Systems In Nursing Practice

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Background & Objectives: Critical care units (ICUs) are specialized environments where patients with life-threatening conditions are closely monitored. With the rise of electronic

health records (EHRs) and the availability of large patient datasets, machine learning (ML) offers promising solutions for real-time prediction of patient deterioration. Therefore, the study aims to enhance the predictive accuracy of Modified Early Warning Systems for forecasting patient outcomes in critical care units by evaluating and comparing the performance of various machine learning models.

Methods: Retrospective cohort study design was used for model predictions. The study was employed using secondary data to employ supervised machine learning for classifying patient outcomes of 1740 patients in ICU setting. The dataset consists of 14 variables including demographics and vital signs and the binary outcomes were calculated as survival and death. Data was in structured tabular format. Pre-processing steps were used to handle missing values, and balanced the data. Furthermore, the 80% data was trained and tested data was 20%.

Results: The accuracy and AUC (Area under the Curve) of five machine learning models were calculated. The findings of all models achieve high accuracy scores, with values ranging from 0.8 to 0.9. Random Forest and XG-Boost show slightly higher accuracy compared to the others. While the AUC scores also indicate strong performance, with values close to 0.8 or higher. Random

Conclusion: The project demonstrated that machine learning can significantly

enhance early prediction of patient outcomes in critical care settings using routinely collected vital signs and scores. Among the models tested: XGBoost emerged as the most effective, offering the best performance in terms of accuracy and AUC.

Keywords: Machine Learning, Enhancing Modified Early Warning Systems, Predicting Patient Outcomes, Critical Care Units, Nursing Practice

UG-VC-36-Modulating Tumor-Associated Macrophages in Solid Tumors: A Comparative Narrative Review of Csf1R Inhibition Versus Cd47SIRP± Axis Blockade Modulating Tumor-Associated Macrophages in Solid Tumors: A Comparative Narrative Review of CSF1R Inhibition versus CD47–SIRPα Axis Blockade

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Background & Objectives: The treatment of cancer has been revolutionized by immune checkpoint inhibitors; however, they still do not produce sufficient results in immunologically “cold” tumors, which are characterized by low T-cell infiltration and a highly immunosuppressive tumor microenvironment. Tumor-associated macrophages (TAMs), specifically the M2 phenotype, play a crucial role in immune evasion, resistance to therapy, and tumor progression in various solid cancers.

Therefore, macrophage-targeted immunotherapeutic strategies have emerged as a possible approach to overcome innate immune suppression and modulate the tumor microenvironment.

Methods: This narrative review critically examines two major macrophage-directed strategies, colony-stimulating factor-1 receptor (CSF1R) inhibition and CD47–signal regulatory protein alpha (CD47–SIRPα) axis blockade, concentrating on their biological mechanisms, preclinical and clinical evidence, safety profiles, resistance pathways, and translational potential in solid tumors.

Results: A thorough review of preclinical studies, translational research, and early-to-late phase clinical trials was carried out, with analysis emphasizing TAM modulation, therapeutic efficacy, resistance mechanisms, combination strategies, and emerging biomarker-guided approaches. CSF1R-targeted therapies primarily act through depletion or reprogramming of immunosuppressive TAMs, leading to transient tumor control and enhanced responsiveness to T-cell-based immunotherapies, particularly in combination regimens. In contrast, CD47–SIRPα blockade restores macrophage-mediated phagocytosis and antigen presentation, facilitating coordinated innate and adaptive immune activation, although its clinical application is frequently constrained by hematologic toxicity and compensatory immune checkpoint upregulation. Both strategies demonstrate tumor-type-specific efficacy and are susceptible to resistance driven by TAM plasticity, alternative

myeloid recruitment pathways, and intratumoral heterogeneity.

Conclusion: Biomarkers such as CSF1/IL-34 levels, CD47 expression gradients, Fc γ receptor polymorphisms, and single-cell or spatial transcriptomic signatures show promise for patient stratification. Overall, CD47–SIRP α blockade demonstrates broader innate–adaptive immune

engagement but faces greater toxicity barriers, whereas CSF1R inhibition appears best suited as a sensitizing backbone in combination regimens.

Keywords: tumor-associated macrophages, CSF1R inhibition, CD47–SIRP α , solid tumors, immunotherapy

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UG-PP-1 — Impact of Social Media on Self-Medication Among Medical and Non-Medical Students Soothar J K^{*1}, Jibrán J¹, Kumari L¹, Hania²,

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Background & Objectives: Currently, social media has become easy accessible resource for health information and self-medication. Recent evidence highlight the use of banned weight-loss medications emphasize the risks of self-diagnosis and prescribed drug usage. It's further influenced by misleading health claims, and the illegal sale of medications through social media platforms.

METHODS: Undergraduates registered in universities throughout Sindh, aged 18-24, and participated in our cross-sectional survey. A demographic-lifestyle questionnaire was used to gather data. Those with regular access to social media platforms were included while those who hesitant to participate and take prescript drugs were excluded. SPSS-26 was used for data analysis.

RESULTS: Our study comprised 279 participants, among them 168(60.2%) were males whereas 200(71.7%) were medical undergraduates. 149(53.4%) participants were aged between 18-20. Self-medication for mild seasonal illnesses was highly prevalent among medical(87.5%) as well as non-medical(79.74%) students. There is significant association between social media influence and students decision to self-medicate($p=0.016$) as well as between social media exposure and self-medication without prescription last 6 months($p=0.044$). Among 162 students who reported that they don't follow social media to

self-medicate includes 119(73.5%) medical undergraduates whereas 54% who reported to follow social media platforms once a week to self-medicate includes 20(37%) non-medical undergraduates. YouTube emerged as popular resource, among these users 64% were medical undergraduates. 34% non-medical students reported to recall the content of medication on social-media.

CONCLUSION: Social media exposure was significantly associated with increased self-medication practices among undergraduate students. YouTube is the most popular resource used for self-medication.

KEYWORDS: Social media, Self-medication, Youtube, Undergraduates.

UG-PP-2 — A Case of β -Thalassemia With Frameshift Mutation and Type 3 von Willebrand Disease in a Pediatric Patient

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Background & Objectives: β -thalassemia major and Type 3 von Willebrand Disease (VWD) are rare inherited hematologic disorders that present significant diagnostic and therapeutic challenges, especially in pediatric patients. β -thalassemia is characterized by defective hemoglobin synthesis due to mutations in the HBB gene, leading to chronic anemia and transfusion dependence. Type 3 VWD, the most severe form of VWD, involves a near-complete deficiency of von Willebrand Factor (VWF), resulting in severe bleeding tendencies. Coexistence of these two disorders is exceedingly rare and complicates both diagnosis and management, requiring a nuanced understanding of their clinical

interplay. To present a rare pediatric case of coexistent β -thalassemia major with a frameshift mutation and Type 3 von Willebrand Disease, highlighting the clinical presentation, genetic findings, management challenges, and implications for future multidisciplinary care.

METHODS: A 3-year-old female presented with spontaneous epistaxis at 19 months of age. Hematologic evaluation included complete blood count, ferritin, coagulation profile, and genetic sequencing. Diagnostic workup revealed microcytic anemia (Hb 6.9–8.6 g/dL), MCV of 73 fL, and RDW of 70.5%. Ferritin levels reached 1778 ng/mL. Coagulation studies showed a VWF antigen level of 1.8%. Molecular analysis of the HBB gene identified a frameshift mutation across exons 8–9. Treatment history and ongoing therapies were documented.

RESULTS: The patient was diagnosed with β -thalassemia major and Type 3 VWD. She has received five red blood cell transfusions, 24 units of fresh frozen plasma, and six vitamin B12 injections. Current medications include Deferiprone (iron chelator), hydroxyurea, folic acid, vitamin K, multivitamins, Vitamin E 200 mg, Calcium + Vitamin D3 supplement, and a combination of Furosemide and Spironolactone. The combination of a bleeding disorder and transfusion dependence poses complex treatment dilemmas, particularly in relation to iron overload, the risk of alloimmunization, and the potential need for splenectomy.

CONCLUSION: This case underscores the importance of comprehensive genetic and coagulation testing in pediatric patients with overlapping hematologic symptoms. Early diagnosis and tailored

multidisciplinary management can significantly reduce the risk of hemorrhagic and thrombotic complications and improve long-term outcomes in such complex dual pathologies.

KEYWORDS: β -thalassemia major, Type 3 von Willebrand Disease, pediatric hematology, frameshift mutation, iron overload

UG-PP-3 — A Multidepartment Clinical Audit on Allergy Documentation Practices in Medicine, Gynecology, Pediatrics, and Surgery

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Background & Objectives: Allergies are the body's irrational reactions to harmless substances known as allergens. These allergens can include food, dust, medications, pollen, and animal dander, among others. Allergic reactions can range from a simple rash to life-threatening anaphylaxis. Therefore, it is important for staff to verify each patient's allergy status to ensure safe and effective treatment and to prevent any potential allergic reactions during medical care.

The clinical audit aimed to confirm the proper documentation of allergies in the medical history section of patients admitted to the Medicine, Gynecology, Pediatrics, and Surgery departments of Naseer Teaching Hospital, Peshawar

Methods: The clinical audit was conducted at the Naseer Teaching Hospital Peshawar, a 250-

bed tertiary teaching Hospital. The audit focus was on allergy documentation at four clinical wards i.e. Pediatrics, Medicine, Surgery, and Gynecology. Data was collected from the patient files. The first cycle ran in July 2025, a total of 80 sample collected 20 from each department The result of first cycle was presented in multi departmental meeting of NTH in which all the deficiency were discussed. The second cycle ran in dec 2025 another set of 80 data set collected. The data of both cycles were entered in google sheet and analyzed as frequencies and percentage

Results: The overall adherence in the first audit cycle was 11.1 %. In which the allergy mentioned in medical history is 4. The allergy section is only mentioned and highlighted in pediatric and medicine file 40 (50%). The adherence in second cycle increased to 32% which marked high improvement up to +20.9%.

Conclusion: In the second cycle a significant improvement is seen in overall adherence. However improvement is still needed as the adherence is below from the optimal level

Keywords: Allergy, Documentation, Medical record, Clinical audit

UG-PP-4 — A Patient in His Early 20s Presenting With Adrenoleukodystrophy and Addison's Disease: A Case Report

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Background & Objectives:

Adrenoleukodystrophy (ALD) is a rare X-linked genetic disorder caused by mutations in the ABCD1 gene, characterized by central nervous system demyelination and primary adrenal insufficiency. Early recognition is crucial to prevent disease progression. This case highlights the clinical presentation of ALD manifesting predominantly as Addison's disease.

Methods: We report a case of a 21-year-old male presenting with progressive symptoms including hyperpigmentation for three years, recurrent diarrhoea, significant weight loss, and progressive lower limb weakness. Clinical evaluation and laboratory investigations, including serum cortisol, ACTH levels, and imaging studies, were performed.

Results: Laboratory findings revealed markedly low morning cortisol (1.5 µg/dL) and elevated ACTH (1774 pg/mL), consistent with primary adrenal insufficiency. Creatine phosphokinase was elevated (678 U/L). Brain MRI demonstrated abnormal signal intensities suggestive of demyelination. Based on clinical and investigational findings, a diagnosis of ALD presenting as Addison's disease was established. The patient was managed with corticosteroid replacement and supportive therapy.

Conclusion: ALD should be considered in young patients presenting with primary adrenal insufficiency and neurological symptoms. Early diagnosis and appropriate management can improve prognosis and delay disease progression.

Keywords: Adrenoleukodystrophy, Addison's disease, primary adrenal insufficiency, demyelination, ABCD1

UG-PP-5 — Pattern of Antimicrobial Sensitivity and Resistance of Salmonella Typhi and Salmonella Paratyphi Among Children With Enteric Fever in a Tertiary Care Hospital, Swat, Pakistan

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Background & Objective: Enteric fever, caused by Salmonella Typhi and Salmonella Paratyphi, remains a major public health concern in developing countries like Pakistan. The emergence of antimicrobial resistance has complicated treatment and increased morbidity among pediatric patients. This study aims to evaluate the pattern of antimicrobial sensitivity and resistance in children with enteric fever presenting to a tertiary care hospital in Swat. To evaluate the demographic characteristics, antibiotic resistance patterns, and sensitivity profiles of Salmonella infections in children.

Methods: A cross-sectional study was conducted on 92 children with culture-confirmed Salmonella infections. Data on demographics, organism type, and antibiotic sensitivity patterns were collected and analyzed. Antibiotic susceptibility was determined using standard laboratory protocols, and resistance rates were documented for commonly used antibiotics.

Results: The study included 92 children with a mean age of 4.76 ± 1.24 years, of which 37% were male and 63% female. Among the

isolates, 96.74% were identified as Salmonella Typhi and 3.26% as Salmonella Paratyphi. Antibiotic resistance was highest for nalidixic acid (95.7%), ampicillin (93.5%), and ceftriaxone (81.5%). Moderate sensitivity was observed for fluoroquinolones, with levofloxacin showing a sensitivity of 44.6%. Meropenem (97.8%) and azithromycin (98.9%) exhibited the highest sensitivity rates, indicating their effectiveness as treatment options.

Conclusion: The study highlights the alarming resistance rates to commonly used antibiotics, emphasizing the need for stringent antibiotic stewardship programs. Meropenem and azithromycin emerged as the most effective antimicrobials for treating MDR Salmonella infections. The findings underscore the importance of vaccination campaigns and the prudent use of antibiotics to combat resistance.

Keywords: Enteric Fever, Antibiotic resistance, multidrug-resistant (MDR), Salmonella Infection

UG-PP-6 — A Rare Vaginal Insertion Into Bladder Occurring Simultaneously With Neurogenic Bladder

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ha6963442@gmail.com**Background & Objectives:** Congenital vesicovaginal fistula (CVVF) occurs rarely and is often associated with other urogenital abnormalities such as imperforate vagina, distal vaginal agenesis, uterus didelphys, and uretero-renal anomalies such as ectopic ureter, renal agenesis etc. This case depicts the complicated presentation of

neurogenic bladder with delayed and missed diagnosis of CVVF associated with distal vaginal agenesis.

Methods: A 10-year-old girl from Kabul presented with continuous urinary incontinence since birth, a grossly ill-looking appearance, pale skin, and severe abdominal pain. Elevated creatinine and urea levels indicated renal injury, which was confirmed by ultrasound. Her left kidney had been completely atrophied. Intraoperatively, an unusual and rare occurrence was observed: the vagina ended blindly and inserted directly into the dome of bladder. The fistula was uncommon due to its very high connection (into the bladder dome) and association with partial vaginal agenesis. The bladder was expanded through ileocystoplasty, and Mitrofanoff procedure was performed for intermittent voiding of bladder through stoma formed in the right iliac fossa. Her left kidney was removed. Due to complex procedure and requirement of inter-disciplinary collaboration with pediatric surgical team, the fistula along with blind-ended vagina was not repaired in the index procedure and was scheduled for the follow up.

Results: Congenital vesicovaginal fistulas are extremely rare embryological anomalies. Complex association with other urogenital anomalies is common occurrence. Fistulas are diagnostically elusive, missed in abdomino-pelvic ultrasound. Cystoscopy can visualize larger fistulas but often miss the smaller fistulas. Functional studies such as MR/ CT urogram are the gold standard, demonstrating contrast leaking into vaginal vault.

Thorough urogenital examination prior to urogenital surgeries is necessary to rule out any intro-operative surprises, and to raise suspicion for underlying complex malformations.

Conclusion: Diagnosing CVVF before menarche may prevent hematometrocolpos, recurrent UTIs due to menouria, via early intervention and repair. Aim of surgical correction must be to restore the affected organs towards normality, and restore fertility.

Keywords: menouria, urogenital malformation, congenital vesicovaginal fistula, neurogenic bladder

UG-PP-7 — A Review of Comparative Strategies Against Pneumonia: Vaccine and Antibiotic Resistance Mitigation

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Background & Objectives: Pneumonia remains a significant global health problem, worsened by the emergence of multidrug-resistant bacterial strains. This review aims to analyze the role of DNA vaccines in combating pneumonia, comparing them with mRNA vaccines and other innovations in vaccine technology to mitigate this issue.

Methods: The research on DNA and mRNA vaccines for pneumonia and their potential to lower antibiotic resistance was studied in this review. A thorough search was carried out in PubMed and Google Scholar using keywords like “pneumonia,” “vaccines,” “DNA vaccines,” “mRNA vaccines,” and “antibiotic resistance.” Additionally, we have also used Web of Science, Scopus, and DOAJ. Title/abstract and full text studies were evaluated in two phases. Preclinical and clinical research, reviews, and meta-analyses

assessing the safety, immunogenicity, effectiveness, or influence on antibiotic resistance were among the articles that were used. Letters, conference abstracts, editorials, and irrelevant research were not included.

Results: An overview of current advances, obstacles, and public health potential was provided by examining data on vaccination type, pathogen target, delivery mechanism, research design, and major findings. Despite their current limitations, DNA vaccines demonstrate significant potential in mitigating antibiotic resistance and reducing pneumonia-related mortality. Additionally, when compared with mRNA vaccines, they also appear well-suited for combating pneumonia pathogens.

Conclusion: Continued research and development in delivery systems and adjuvant technologies are crucial to overcome existing challenges and fully realize the therapeutic promise of DNA and mRNA vaccines in public health.

Keywords: Pneumonia, DNA vaccines, mRNA vaccines, Antibiotic resistance, Multidrug-resistant bacteria, Lipid nanoparticles.

UG-PP-8 — A Cross-Sectional Study of Female Cardiac Patients' Health-Related Quality of Life and Health-Seeking Behavior in Rural Pakistan

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Background & Objective: This study evaluated health-related quality of life (HRQOL) and health-seeking behavior, and their correlation with demographic variables in

cardiac patients. The aim was to investigate HRQOL and health-seeking behavior in 403 cardiac patients aged 18 to 59.

Methods: The HBS-16 and SF-36 V2 questionnaires assessed health-seeking behavior, HRQOL, and demographic traits. Results showed many patients experienced low HRQOL, while 76.7% exhibited proactive health-seeking behaviors. HRQOL was linked to family history of cardiac conditions and smoking behaviors.

Results: Demographic variables like age, occupation, marital status, family history, and smoking habits significantly affected HRQOL and health-seeking behaviors. The study highlights the complex relationship between cardiovascular disease, quality of life, and healthcare-seeking behaviors. Socioeconomic and lifestyle elements, such as smoking and lack of physical activity, significantly impact HRQOL and health outcomes. Patients with a family history of cardiac conditions displayed varying health-seeking behaviors and levels of emotional well-being. Smokers showed unique patterns in their health-seeking approaches. Targeted interventions, like public health initiatives **and** early risk assessments, are crucial for enhancing HRQOL and healthcare outcomes for cardiac patients with risk factors.

Conclusion: The study emphasizes the need for tailored strategies to address the specific needs of cardiac patients, taking into account their demographic and lifestyle factors. By addressing these factors, healthcare providers can improve HRQOL and health outcomes for cardiac patients in Pakistan.

Keywords: HRQOL, Health seeking behavior, SF-36, Quality of life, CVD

UG-PP-9 — Adjustment Challenges Among Newly Recruited Nurses: A Quantitative

Study on Patient Safety and Professional Identity in Khyber Pakhtunkhwa

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Background & Objectives: Newly hired nurses often struggle to adjust from academic learning to independent clinical practice. In KPK, Pakistan, heavy workloads, limited mentorship, organizational pressures, and a theory–practice gap intensify these challenges, affecting professional identity and patient safety. Understanding these issues is key to improving nurse retention, professional development, and care quality

This study aimed to assess the adjustment challenges experienced by newly recruited nurses in KPK and examine their influence on professional identity formation and adherence to patient safety practices.

Methods: A quantitative cross-sectional

design was used among BSN graduates with six months or less clinical experience, working as interns or newly hired staff across various districts of KPK. Data were collected through a self-administered online questionnaire distributed via Google Forms. The instrument assessed demographic characteristics, transition challenges, professional identity indicators, and patient safety attitudes using a five-point Likert scale. Convenience sampling was applied, and data were analyzed using SPSS version 26. Descriptive statistics summarized participant characteristics, while Cronbach's alpha (0.72) confirmed acceptable internal reliability.

Results: A total of 115 newly recruited nurses completed the survey. Participants frequently reported transition shock, workload pressure, limited senior support, and difficulty applying theoretical knowledge in clinical settings. These challenges negatively affected the development of professional identity and consistent adherence to patient safety protocols.

Conclusion: Strengthened transition-to-practice programs, improved mentorship, and supportive clinical environments are needed to promote safe practice, reduce burnout, and enhance retention of newly recruited nurses in KPK.

Keywords: Newly recruited nurses; Adjustment challenges; Transition to practice; Professional identity; Patient safety; Theory–practice gap; Mentorship; Khyber Pakhtunkhwa.

UG-PP-10 — A Symptom-Based Tuberculosis Risk Prediction Model Using Machine Learning

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Background & Objectives: Tuberculosis (TB) remains a major public health challenge in low- and middle-income countries due to under-reporting, diagnostic delays, and limited access to laboratory-based confirmatory tests. Conventional diagnostic approaches relying on sputum microscopy, radiography, and molecular tests are often costly, time-consuming, and inaccessible in resource-limited settings. Symptom-based screening, although widely used, suffers from limited sensitivity and specificity, resulting in missed cases or unnecessary referrals. This study aimed to design and evaluated a machine learning-based, symptom-driven TB risk prediction model to support early identification of high-risk individuals and optimize clinical decision-making.

Methods: A quantitative retrospective study was conducted using demographic, clinical symptom, and risk factor data collected through structured questionnaires from multiple tertiary care hospitals in Khyber Pakhtunkhwa, Pakistan.

Results: Data preprocessing included cleaning, missing value imputation, and one-hot encoding, followed by an 80:20 training-testing split and five-fold cross-validation. Multiple machine learning models were developed and compared, including Logistic

Regression, Random Forest, XGBoost, K-Nearest Neighbors, Long Short-Term Memory, and Bidirectional LSTM. Model performance was evaluated using accuracy, precision, recall, F1-score, and ROC-AUC. Among all models, Logistic Regression demonstrated the best overall performance, achieving an accuracy of 90%, precision of 87%, recall of 93%, F1-score of 90%, and ROC-AUC of 0.82, indicating balanced and reliable classification. Feature importance analysis highlighted key demographic and symptom-related predictors contributing to TB risk.

Conclusion: The findings demonstrate that machine learning models, particularly interpretable approaches such as Logistic Regression, can effectively predict TB risk using symptom-based data.

Conclusion: This approach has significant implications for early TB screening, prioritization of confirmatory testing, and efficient resource allocation, especially in low-resource and community-based healthcare settings.

Keywords: Tuberculosis, Machine Learning, Symptom-Based Screening, Risk Prediction, Logistic Regression

UG-PP-11 — Antihypertensive Activity of Flowering Twigs of *Calotropis procera* Mediated Through Vasorelaxant Pathways

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Background & Objectives: Hypertension is a major global health concern and a leading risk factor nowadays. The purpose of this study is

to examine the anti-hypertensive properties of *C. procera* (Ait.) flowering twigs via screening in vivo.

Methods: *Calotropis procera* flowering twigs were powdered shade-dried and macerated in 80% hydro-methanol for seven days. The extract was filtered concentrated to produce a crude methanolic extract (Cp.Cr) and then divided into aqueous, n-hexane, ethyl acetate, chloroform and n-butanol fractions. A non-invasive blood pressure monitoring device was used to measure anti-hypertensive activity. At 1500 and 2000 mg/kg, acute toxicity was assessed. Using isolated rabbit thoracic aortic ring preparations mounted in Krebs solution, the effects of vasorelaxants were investigated. Norepinephrine (1 μ M) and KCl (80 mM) were used to induce contractile responses, and calcium channel involvement was evaluated in Krebs solution without calcium. Using the tail-cuff technique, in vivo anti-hypertensive activity was verified in animals with hypertension induced by Depomedrol. The usual medication was amlodipine (0.0714 mg/kg).

Results:

Phytochemical research revealed that the bioactive components of *Calotropis procera* extract s included flavonoid, saponins, cardiac glycosides, and terpenoids, alkaloids and tannins were absent.

Flavonoid and cardiac glycosides were found in moderate amounts, but saponins were most concentrated in the aqueous fraction. Acute oral toxicity evaluation indicated no symptoms of mortality or apparent toxic effects in mice at doses up to 1500 mg/kg body weight, indicating that the median lethal dose (LD_{50}) of the extracts surpasses 2000 mg/kg and suggesting a satisfactory safety profile. The aqueous fraction (Cp.Aq) produced a significant and concentration-dependent inhibition of contractions induced

by potassium chloride (KCl) and norepinephrine (1 μ M), according to in vitro vascular reactivity studies.

The vasorelaxant potency of Cp.Aq was notable because its EC_{50} values for both contractile stimuli were almost identical to those of amlodipine, a common calcium channel blocker. These findings indicate a strong calcium antagonistic activity of the aqueous extract. The in vitro findings were corroborated by an in vivo antihypertensive evaluation.

Both the aqueous fraction and the crude extract (Cp.Cr) at a dose of 10 mg/kg significantly lowered systolic blood pressure in hypertensive animal models ($P < 0.05$).

The aqueous extract produced dose-dependent drops in both systolic and diastolic blood pressure, continuously outperforming the crude extract. All of these findings indicate that the saponin-rich aqueous extract of *C. Procera* is a promising natural source for the creation of new anti-hypertensive drugs because of its strong vasorelaxant and hypotensive properties, which are probably caused by the blockage of voltage-gated and receptor-operated calcium channels.

Conclusion:

Calotropis procera is safe for oral administration at doses up to 1500 mg/kg. The aqueous extract of *C. procera*, which is rich in saponins, exhibits a significant and dose dependent blood pressure-lowering effect.

Keywords: *Calotropis procera*; Vasorelaxation; Antihypertensive effect; Voltage-gated calcium channels; Norepinephrine-induced contraction.

UG-PP-12 — Artificial Intelligence in Healthcare: Perceptions, Challenges, and Future Implications Among Medical Students

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Background & Objectives: Artificial intelligence (AI) is increasingly transforming healthcare through applications in diagnostics, surgery and patient management. Despite its growing relevance, perceptions of future healthcare professionals toward AI remain underexplored particularly in developing countries such as Pakistan. Understanding medical students' awareness, attitudes, and concerns is essential for the effective and ethical integration of AI into clinical practice.

Methods: A cross-sectional quantitative study was conducted among 344 undergraduate medical students at Azra Naheed Medical College, Lahore. Convenience sampling was used to include participants from all academic years. Data were collected using a self-designed questionnaire assessing knowledge, perceptions, and anticipated implications of AI in healthcare. Statistical analysis was performed using SPSS employing descriptive statistics and correlation analysis to interpret the findings.

Results: Students demonstrated mixed perceptions regarding AI in healthcare. While 43% believed that AI could improve healthcare delivery, 41% expressed concerns about potential job reduction among physicians. Nearly half of the respondents (48.5%) agreed

that physicians should retain final authority over diagnostic and treatment decisions, and more than half reported greater trust in human judgment than AI-based assessments. A substantial proportion of neutral responses suggested uncertainty and limited exposure to AI in clinical contexts.

Conclusions: Medical students exhibited cautious optimism toward AI in healthcare. Although its potential is acknowledged, concerns about accountability, reliability, and ethical implications persist. Integrating AI literacy into medical curricula and establishing clear regulatory frameworks are essential to promote informed and ethical adoption of AI in future healthcare practice.

Keywords: Artificial intelligence, Medical students; Perceptions; Future implications

UG-PP-13 — Assessment of Anxiety and Depression Among HIV and AIDS Patients Visiting a Testing and Counselling Centre

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Background&Objectives: HIV/AIDS remains a major global health challenge, frequently accompanied by severe psychological comorbidities such as anxiety and depression. In Pakistan, cultural stigma contributes to the severity of anxiety and depression among people living with HIV/AIDS (PLWHA). This affects their treatment adherence and overall health outcomes. The Objectives of the present study were to find the prevalence of

anxiety and depression among PLWHA in HMC, Peshawar, and to find the sociodemographic and clinical factors associated with these two mental health problems.

Methods: This cross-sectional study conducted at the ART center located in HMC, Peshawar recruited 176 participants via convenience sampling. Data were collected using the Hospital Anxiety and Depression Scale (HADS) and analyzed using ANOVA and Pearson correlation.

Results: Prevalence rates were 36.4% for anxiety and 49.4% for depression. Females and other genders reported significantly higher anxiety levels ($p < .001$). A strong, significant positive correlation ($r = 0.675$, $p < .001$) was identified between anxiety and depression symptoms, highlighting high comorbidity among patients.

Conclusion: The high rate of anxiety and depression among PLWHA in Peshawar demands the inclusion of psychological screening in the treatment process to improve the general outcome for the patients.

Keywords: HIV/AIDS, Anxiety, Depression, HADS, Peshawar, Mental Health Integration, Pakistan

UG-PP-14 — Assessment of Health-Related Quality of Life Among Nurses Working at a Tertiary Healthcare Facility in Peshawar

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Background & Objectives: Nurses play a fundamental role in healthcare delivery, yet they frequently encounter demanding working conditions that may adversely affect their health-related quality of life (HRQoL). Limited evidence is available regarding HRQoL among nurses in private tertiary care settings in Khyber Pakhtunkhwa, Pakistan. This study aimed to assess the HRQoL of nurses working at Rehman Medical Institute, Peshawar.

Methods: A cross-sectional descriptive study was conducted among 120 registered nurses selected through convenience sampling, of whom 116 completed the survey. Data were collected using a structured questionnaire comprising sociodemographic variables and the WHOQOL-BREF instrument, which evaluates physical, psychological, social, and environmental domains. Data were analyzed using SPSS version 25.

Results: Descriptive statistics were computed, and inferential analyses including independent t-tests, one-way ANOVA, and Pearson correlation were applied, with significance set at $p < 0.05$. The mean overall HRQoL score was 78.22 (SD = 11.27), indicating a moderate level of well-being among participants. No statistically significant differences in HRQoL were observed across gender, marital status, education level, designation, smoking status, salary, or years of experience. Correlation analysis demonstrated a significant positive relationship between age and salary ($r = 0.441$, $p < 0.01$), suggesting that older nurses earned higher incomes; however, this did not translate into improved HRQoL. The findings indicate that demographic and socioeconomic factors alone may not sufficiently explain variations in HRQoL among nurses. Occupational and

psychosocial factors such as workload, shift patterns, and institutional support may play a more substantial role in influencing well-being.

Conclusion: These results highlight the need for organizational strategies aimed at improving working conditions, promoting mental health support, and enhancing professional recognition to strengthen nurses' overall quality of life and patient care outcomes.

Keywords: nurses, HRQoL, WHOQOL-BREF, Pakistan, burnout, wellbeing

UG-PP-15 — Assessment of Medication Adherence and Its Associated Factors Among Hypertensive Patients Using the MMAS-8 Scale

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Background & Objectives: Hypertension is a major public health problem and a leading risk factor for cardiovascular morbidity and mortality worldwide. Despite the availability of effective antihypertensive medications, poor adherence to treatment remains a significant barrier to optimal blood pressure control. This study aimed to assess the level of medication adherence and its associated factors among

hypertensive patients attending a tertiary care hospital in Peshawar, Pakistan.

Methods: A descriptive cross-sectional study was conducted at Khyber Teaching Hospital, Peshawar, from September to November 2025. Data was collected from adult hypertensive patients admitted to Medical A, Medical B, and the Cardiology Ward. Medication adherence was assessed using the 8item Morisky Medication Adherence Scale. Data was analysed using IBM SPSS Statistics version 20. Associations between medication adherence and demographic or clinical variables were evaluated using chi-square tests and Pearson's correlation coefficient.

Results: 150 hypertensive patients were included in the study. Most participants demonstrated low to moderate adherence to antihypertensive medications. No statistically significant associations were found between medication adherence and age, gender, educational status, duration of hypertension, or presence of other chronic conditions. Internal consistency of the MMAS-8 in this population was low.

Conclusion: Medication adherence among hypertensive patients in this tertiary care setting was suboptimal. No clear demographic or clinical predictors of adherence were identified. Multifaceted interventions focusing on behavioural and healthcare system factors are required to improve adherence and long-term hypertension outcomes.

Keywords: Hypertension; Medication adherence; Morisky scale; Cross-sectional study; Pakistan

UG-PP-16 — Assessment of Physical Fitness Among Male Cricket Players at a Sports Academy: A Cross-Sectional Study

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Background & Objectives: Physical fitness is a crucial element of cricket performance, as physically trained cricketers demonstrate superior performance, more consistency, and a reduced incidence of injuries. The physical fitness attributes such as strength, agility, and endurance empower a cricketer to bat with more power for extended durations, bowl with greater pace and precision, and field with athleticism. To assess physical fitness among male cricket players at Fakhar Zaman cricket academy Mardan and to identify the association between components of physical fitness and demographic factors, namely age, body mass index, frequency of exercise per week, hours of sleep per day, smoking and dietary supplements consumption.

Methods: This study was a cross-sectional study, in which 101 participants were recruited from Fakhar Zaman cricket academy and universal sampling was used for data collection. SPSS was used for the analysis of the data.

Results: Flexibility and balance were excellent in 93% and 99% participants respectively, while majority (28.7% and 26.7%) were average and above average at upper-body endurance. At hand grip strength, majority (36.6%) were found in excellent category. 49% were poor at agility while 35% were

categorized as poor at cardiorespiratory fitness. Age was significantly associated with the Illinois agility test, hand grip strength test, and step test. The frequency of training per week was positively associated with performance in the push-up test and the Illinois agility test, affirming the significance of consistent exercise.

Conclusion: The current study concludes that although the players exhibited remarkable flexibility and balance, they demonstrate significant deficiencies in agility and cardiorespiratory fitness.

Keywords: Cricket, Physical Fitness, Agility

UG-PP-17 — Assessment of Quality of Life of Chronic Kidney Disease Patients Undergoing Hemodialysis in Peshawar

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Background & Objectives: Chronic kidney disease (CKD) is a slowly progressive condition and a major cause of morbidity and mortality worldwide. Patients with end-stage renal disease undergoing maintenance hemodialysis experience multiple physical, psychological, social, and environmental challenges that negatively affect quality of life (QOL). Assessment of QOL has become an important indicator for evaluating outcomes in

chronic illnesses such as CKD. This study aimed to assess the quality of life of patients with CKD undergoing maintenance hemodialysis at the Institute of Kidney Diseases, Peshawar, identify challenges across different domains, and evaluate the effect of demographic factors on QOL.

Methods: An observational cross-sectional study was conducted among 229 patients undergoing maintenance hemodialysis at IKD Peshawar from August 27 to September 15, 2024. Adult patients aged ≥ 18 years of either gender who had been on hemodialysis for at least three months were included using convenience non-probability sampling. Quality of life was assessed using the pre-validated World Health Organization Quality of Life questionnaire (WHOQOL-BREF), a 26-item instrument evaluating overall QOL and health across four domains: physical health, psychological health, social relationships, and environmental health. Data were analyzed using SPSS version 22. Pearson correlation and independent sample t-tests were applied, with $p < 0.05$ considered statistically significant.

Results: The mean age of participants was 41 ± 13.41 years; 68.1% were males. The highest mean QOL score was observed in the social domain (54.2 ± 18.8), followed by the environmental domain (51.0 ± 13.4), while the psychological domain had the lowest mean score (45.6 ± 13.6). Increasing age was negatively associated with physical ($p < 0.001$) and psychological ($p = 0.018$) domain scores. Duration of hemodialysis showed a positive correlation with physical ($p = 0.033$) and psychological ($p = 0.032$) domains. Single patients had significantly higher physical ($p = 0.021$) and psychological ($p = 0.024$) scores compared to married patients. Males scored

higher than females in physical ($p = 0.013$) and social ($p = 0.008$) domains.

Conclusion: Patients with CKD undergoing maintenance hemodialysis had low quality of life across all domains. Age, gender, marital status, and duration of dialysis significantly affected quality of life. These findings highlight the need for targeted, multidisciplinary, and evidence-based interventions to improve patient-centered outcomes in hemodialysis populations.

UG-PP-18 — Assessment of Stress Prevalence Among Healthcare Professionals in Peshawar

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Background & Objectives Stress is the body's natural physiological and psychological response to internal or external stimuli. It can significantly affect both mental and physical health. The level of stress experienced depends on the nature, intensity, and duration of the stressors. Occupational demands are common stressors, and different professions expose individuals to varying levels and types of stress.

To identify the healthcare profession with highest levels of stress.

The study ($N = 205$) comprised a predominantly young cohort (mean age 27.43 ± 4.41), featuring a majority of females (54.6%) and single individuals (63.4%). Professionally, doctors (38.5%) and nurses (26.3%) represented the largest segments. Somatic analysis indicated near-significant gender correlations for headaches ($P = 0.053$) and poor appetite ($P = 0.055$). Notably, age was a

significant factor in severe depressive indicators, specifically hopelessness ($P=0.014$) and a wish to be dead ($P=0.005$). Furthermore, thoughts of self-harm demonstrated a notable age-related trend ($P=0.053$), suggesting specific vulnerability within younger professional demographics.

A cross-sectional analytical study was conducted among healthcare professionals working in three government and private hospitals in Peshawar. A total of 205 participants were assessed for stress levels using a standardized questionnaire. Data was analysed using SPSS software.

The results showed that age is a more critical factor than gender in predicting severe mental health risks, with significant levels of hopelessness ($P=0.014$) and suicidal ideation ($P=0.005$) among younger doctors and nurses. These findings highlight a specific psychological vulnerability within the younger, predominantly single professional demographic.

Key words

Stress, healthcare professionals, standardized questionnaire.

UG-PP-19 — Association Between Stress and Competency Among Undergraduate Nursing Students

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Background & Objectives: Undergraduate nursing students frequently experience significant stress due to academic workload,

clinical responsibilities, and personal challenges, which may influence their learning and professional development. Nursing competency, encompassing knowledge, clinical skills, and professional attitudes is fundamental for safe and effective practice. This study aimed to assess the level of stress and its association with competency among undergraduate nursing students at Sarhad University, Peshawar.

Methods: An analytical cross-sectional design was employed, including 206 students from the 3rd, 5th, 6th, and 7th semesters who had completed at least one semester of clinical training. Data were collected using standardized adopted questionnaires assessing stress and competency. Ethical approval was obtained from the institutional review authorities prior to data collection. Data were analyzed using SPSS version 26, applying descriptive statistics and inferential analysis to examine associations between variables.

Results: The findings revealed that 75% of participants reported moderate stress, 18% high stress, and 7% low stress. Regarding competency, 35% perceived themselves as fully competent, with competency levels increasing progressively with academic advancement. Statistical analysis demonstrated no significant association between stress levels and competency at the 0.05 level of significance. These findings suggest that although moderate stress is prevalent among undergraduate nursing students, it does not significantly impair perceived competency development.

Conclusion: Competency appears to improve primarily through academic progression and clinical exposure. Nursing education programs should integrate structured stress management strategies alongside competency-based training

to promote resilience and optimize professional readiness among students.

Keywords: Stress, Competency, Undergraduate Nursing Students, Association

UG-PP-20 — Association of Ankle Range of Motion With Static and Dynamic Balance in Football Players: An Analytical Cross-Sectional Study

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Background & Objectives: The ankle joint is a crucial structure in the human body, particularly in footballers whose performance depends on its ROM. Ankle joint ranges can affect the balance of the player as players with ankle injuries exhibit relatively poor balance and stability. Ankle is the most frequently damaged body part among footballers with ankle sprain being the most repeated injury to the lower extremity. To ascertain the association between ankle ROM with static and dynamic balance, and to investigate its association with injury risk and BMI in football players.

Methods: This analytical cross-sectional study involved footballers from Goalz, Asad Iqbal, and JKD academies in Peshawar. Ankle ROM, static and dynamic balance were evaluated through a DG, the single-leg stance test, and the Y-Balance test, respectively. Injury risk was determined via the OSTRC questionnaire.

Results: Dorsiflexion, plantarflexion, and inversion exhibited significant association with both static and dynamic balance ($p<0.05$). Eversion had a favorable association with dynamic balance, however not with static balance. The risk of injury was substantially associated with ROM, balance, and BMI ($p<0.05$), where reduced ROM and greater BMI were associated with compromised balance and increased injury risk.

Conclusion: ROM of the ankle joint, especially dorsiflexion, plantarflexion, and inversion, is positively correlated with balance in football players, affecting injury risk. These findings support the implementation of combined mobility and balance training to improve performance and decrease the possibility of injury.

Keywords: Ankle ROM, BMI, Dynamic balance, Football players, Static balance, Risk of injury.

UG-PP-21 — Association of BPPV With Lipid Profiles, Glycemic Status, Electrolytes, and Serum Calcium: A Case-Control Study

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ABSTARCT:

Background and Objective: Benign

paroxysmal positional vertigo (BPPV) commonly affects the peripheral vestibular system, yet its metabolic risk factors are not yet well defined. Systemic disorders like dyslipidemia and electrolyte disturbances alter otolith metabolism and vestibular function. This study examines links between metabolic factors (dyslipidemia and diabetes mellitus) and electrolyte imbalances with BPPV, identifying principal risks.

Methods: A case control study at Khyber Teaching Hospital recruited 100 patients with BPPV (diagnosed per Bárány Society criteria) and 100 age- and sex-matched controls; sample size was calculated in OpenEpi using an expected OR of 0.256 for diabetes, 80% power, and $\alpha = 0.05$. Lipid profile, HbA1c, and serum electrolytes (calcium, sodium, potassium, chloride) were measured. Analysis compared metabolic and electrolyte profiles between groups.

Results: Lipid profiles showed significant differences. Cases had higher total cholesterol (TC) ($p < 0.001$) and triglycerides (TG) ($p < 0.001$), with lower high-density lipoprotein (HDL) levels ($p < 0.001$). Electrolyte disturbances including hypokalemia ($p < 0.001$), hyponatremia ($p < 0.001$), and hypochloremia ($p = 0.007$) were more common among cases. Hypocalcemia was strongly linked to BPPV ($p < 0.001$). Linear regression revealed elevated TC, LDL, calcium, and sodium as independent predictors. HbA1c, however, showed no association with BPPV.

Conclusion: Dyslipidemia and electrolyte disturbances (hypocalcemia, hyponatremia) may contribute to BPPV via vascular ischemia, oxidative stress, or disrupted otolith metabolism; the role of electrolytes is underreported. Future multicenter studies are needed to account for unmeasured

confounders, such as dietary factors and vitamin D status, to better elucidate the epidemiology of BPPV.

Keywords: Benign Paroxysmal Positional Vertigo (BPPV), Dyslipidemia, Water-Electrolyte Imbalance, Vestibular diseases

UG-PP-22 — Association of Family Support in Coping With Medical Entry-Test Failure Stress and Educational Engagement

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Background & Objectives: Admission to medical colleges is a major challenge for higher secondary school students. Parental and societal expectations, and fear of embarrassment lead to stress and depression. This study examines how social support help students deal with stress of failing National Medical and Dental College Admission (NMDCAT) Test in Khyber Pakhtunkhwa-Pakistan. 101 undergraduate students from various faculties of University of Peshawar participated in this quantitative research. Based on Lazarus and Folkman's Stress and Coping Theory, this study shows how the psychological impact of medical entry test failure is managed by support systems like family.

Methods: Data was collected through a 5-point Likert scale questionnaire (from 1 = strongly agree to 5 = strongly disagree). The association of independent variable (family support in coping with entry-test failure) and dependent

variable (educational engagement) was tested using a Chi-Square test.

Results: Finding showed that educational engagement had significant association with family support in stress management ($p = 0.020$), family understanding of different problems ($P = 0.025$), encouragement from family ($P = 0.049$), and family as the greatest source of support in coping with entry-test failure stress ($P = 0.028$). Results emphasized family support as key to managing stress, overcoming academic setbacks and engagement in alternate educational activities for students.

Conclusion: Motivation, encouragement, and emotional support, which majorly comes from family, helped positive educational engagement of students. Engagement in other educational fields also helps overcome the phase of high stress due to failure in entry test.

Keywords: stress coping mechanisms, overcoming setbacks, family support, educational engagement, medical entry-test failure

UG-PP-23 — Association of Sleep Quality, Mental Health, and Academic Performance Among Medical Students in KPK: A Cross-Sectional Study

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Abstract

Background & Objectives: Sufficient sleep is very important in student's life. It is integral to better mental health and facilitates students learning. We aimed to assess sleep quality among medical students and to see if it was

associated with their mental health and academic performance.

Methods: A total of 206 students responded to our questionnaire with their complete data on demographics, academic performance, sleep quality (Pittsburgh Sleep Quality Index), and mental health (Depression Anxiety Stress Scale).

Results: Overall, the prevalence of poor sleep was 54%. 28% participants reported high psychological distress. Sleep quality was significantly correlated with psychological distress ($r = 0.277$, $p < 0.01$).

Keywords:

Academic performance, Medical students, Mental health, Sleep quality

UG-PP-24 — Attitude of Dentists Toward AI-Assisted Radiographic Diagnosis

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Background & Objectives: Artificial Intelligence (AI) is increasingly being integrated into dental radiographic interpretation, offering potential improvements in diagnostic accuracy and efficiency; however, awareness and adoption among dental professionals remain variable. This study aimed to assess dentists' awareness, attitudes, and utilization of AI-assisted radiographic diagnostic technologies.

Methods: A cross-sectional survey was conducted among 31 dentists using a structured

questionnaire, and data were analyzed using SPSS.

Results: Descriptive statistics summarized demographic characteristics and responses, chi-square tests examined associations between categorical variables, and one-way ANOVA compared mean age across experience groups, with significance set at $p < 0.05$. Among the participants, 61.3% were female and 38.7% were male, and 61.3% reported awareness of AI applications in dental radiology, while only 22.6% had experience using AI-based radiographic software. A majority (93.5%) believed that AI could improve diagnostic accuracy. Chi-square analysis showed no significant association between gender and AI awareness ($\chi^2 = 0.75$, $p = 0.386$), while one-way ANOVA revealed a significant difference in mean age across clinical experience groups ($F = 16.36$, $p < 0.001$), indicating that age increased with experience. These findings suggest that although awareness of AI in dental radiology is relatively high, actual clinical utilization remains limited, and dentists generally hold a positive attitude toward AI integration.

Conclusion: Greater emphasis on training, accessibility, and institutional support may facilitate broader adoption of AI-assisted radiographic technologies in routine dental practice, ultimately enhancing diagnostic accuracy and patient care.

Key words Artificial Intelligence, AI-assisted radiography, Dental radiology, Diagnostic accuracy, Dentist awareness, Technology adoption, Cross-sectional survey, Dental practice

UG-PP-25 — Audit and Re-Audit of Discharge Note Documentation: Assessing

the Impact of Quality Improvement Measures

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Background & Objectives: A well-crafted discharge summary effectively conveys important information, such as medications, clinical results and follow-up instructions, making it easier for everyone involved. Poorly written summaries can lead to serious issues, including medication errors, rehospitalization and increased risks of morbidity and mortality.

The clinical audit aimed to confirm the proper completion of discharge summary of patients admitted to the Medicine, Gynaecology, Paediatrics, and Surgery departments of Naseer Teaching Hospital, Peshawar

Methods: The clinical audit was conducted at the Naseer Teaching Hospital Peshawar, a 250-bed tertiary teaching Hospital. The audit focus was on discharge slip at multiple wards. Data was collected from the patient discharge slip. The first cycle ran in July 2025, a total of 100 sample collected. The result of first cycle was presented in multi departmental meeting of NTH in which all the deficiency were discussed. The second cycle ran in dec 2025 another set of 100 data set collected. The data of both cycles were entered in google sheet and analyzed as frequencies and percentage

Results: The overall adherence in the first audit cycle was 60.9% .The presenting complaint during the first cycle was 25% which improve to 100% in the second cycle. The overall adherence of reaudit was 80.1% which significantly improve the quality of discharge slip

Conclusion: we achieved the main goal during our reaudit all discharge slip change from handwritten to computerized. Hundred percent achieve the adherence of presenting complaint, investigation documentation.However there is still some deficiency in patient contact information and pending investigation.

Keywords: Discharge slip, Documentation, Medical record, Clinical audit

UG-PP-26 — Audit on Modified Aldrete Score (MAS) Assessment in Post-Operative Patients

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Background & Objectives: The objective of the audit is to enhance the quality and consistency to enhance medical care and provide appropriate medical treatment during the recovery phase.

Methods: At Naseer Teaching Hospital,a clinical audit was carried out to assess the Aldrete score in patients after surgery. The

first cycle of this audit occurred in September 2020⁵. During this initial phase, there was no tool available to evaluate the Aldrete score. This problem was addressed with the director and administration, prompting a departmental meeting. Participants in this meeting included administrative personnel, the Head of Anesthesia, medical officers from the Anesthesia department, staff from the surgical department, and members of the recovery rooms. As a result aldrete score assesment tool was used for assessment which consist of four parameter muscle activity, consciousness, oxygen saturation and Circulation.

Results: The overall adherence in the first audit cycle was 0%.There is no standardized or assessment tool. The adherence in second cycle increased to 80% . The non adherence is because of absentee of medical officer during shift and the over load in the OT.

Conclusion: A significant improvement were seen in the second cycle which is the evidence to improve the patient care and quality treatment

Keywords: Post-op, Recovery, Aldrete Score, Clinical audit.

UG-PP-27 — Automated Surveillance of Antibiotic Resistance Patterns in Pakistani Medical Literature: A Regional Early Warning System

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Background & Objectives: Antimicrobial resistance (AMR) is an escalating public health

threat in Pakistan, where fragmented surveillance systems and delayed consolidation of regional data hinder timely clinical decision-making and antimicrobial stewardship planning. Although numerous hospital-based and regional studies report emerging resistance trends, these findings remain dispersed across journals and institutional publications, limiting their practical utility for early warning and policy response. This study proposes an automated surveillance framework that leverages natural language processing techniques to systematically extract and synthesize antibiotic resistance patterns from Pakistani medical literature.

Methods: A corpus of peer-reviewed publications and publicly accessible clinical reports published over the past decade was digitally screened and processed. Named entity recognition and rule-based extraction methods were applied to identify pathogen–antibiotic resistance associations, geographic indicators, and temporal trends. Extracted information was structured into a searchable database to enable regional mapping and frequency analysis of resistance patterns.

Results: Preliminary findings demonstrate measurable variability in reported resistance across provinces and highlight recurrent high-resistance trends among commonly prescribed antibiotics. The automated approach significantly reduced manual review time while maintaining consistent data capture across diverse reporting formats.

Conclusion: By transforming dispersed academic evidence into a structured and analyzable resource, the proposed system provides a complementary mechanism to traditional laboratory surveillance. This framework illustrates the feasibility of computational public health strategies to

enhance early detection of resistance trends, support evidence-informed empirical prescribing, and strengthen antimicrobial stewardship initiatives in low-resource healthcare settings.

Keywords: Antimicrobial Resistance, Automated Surveillance, Natural Language Processing, Public Health Informatics, Pakistan

UG-PP-28 — Awareness and Attitude of University Students Toward Premarital β -Thalassemia Screening Tests

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Background & Objectives: β -thalassemia is a prevalent inherited blood disorder in Pakistan, with a carrier rate of 5–7% largely attributed to consanguinity. Although premarital screening (PMS) effectively prevents transmission, its limited adoption sustains a high burden of thalassemia major and related childhood morbidity. The objective of this study was to assess the knowledge and attitudes of university students in Khyber Pakhtunkhwa (KP) toward premarital β -thalassemia screening tests.

Methods: An observational, cross-sectional study was conducted from March to September 2025 among 258 unmarried non-health sciences students. Participants were selected through convenience sampling from both public and private universities in Khyber Pakhtunkhwa, Pakistan. Data were collected

using a pre-structured questionnaire distributed both online and in printed form. The questionnaire assessed demographic characteristics, knowledge levels, and attitudes toward premarital β -thalassemia screening. Statistical analysis was performed using SPSS version 27.

Results: Among the 258 participants, 62.4% were male and 37.6% were female. Regarding knowledge levels, 43% demonstrated poor knowledge, 43% had moderate knowledge, and only 14% exhibited good knowledge of premarital β -thalassemia screening tests. Attitude toward screening were predominantly neutral (53.5%) or negative (46.5%), and no participant expressed a positive attitude. Significant associations were observed between attitude and family history of thalassemia ($p = 0.034$), age and attitude ($p = 0.022$), and knowledge and attitude ($p = 0.001$). Interestingly, a negative correlation ($r = -0.394$) was found between knowledge and attitude, indicating that participants with higher knowledge were more likely to express negative attitudes toward screening.

Conclusion: This study highlights insufficiency of knowledge regarding β -thalassemia within the KP population, reflecting persistent cultural and social barriers to implementation. Targeted educational interventions along with enforcement of mandatory screening legislation are critical to increase the acceptance of PMS in Pakistan.

Keywords: β -thalassemia, Premarital Screening, Knowledge, Attitude

UG-PP-29 — Awareness and Attitude Toward Artificial Intelligence in Dentistry Among Dental Students

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Background & Objectives: AI tools are being used to detect cavities, gum disease, and oral cancer by analyzing X-rays and clinical data. AI in dentistry helps with patient management, diagnosis, treatment planning, and admin work. Our objective of this research is to evaluate the current status of AI-related knowledge and perceptions among dental students in Pakistan.

Methods: A quantitative cross-sectional survey was conducted to assess awareness and attitudes toward Artificial Intelligence (AI) among undergraduate dental students in Pakistan, from the second to final year of BDS programs. A sample of 384 participants was determined using a 95% confidence level and 5% margin of error, with stratified random sampling ensuring proportional representation across academic years. Data were collected via a structured self-administered questionnaire covering demographics, AI knowledge, attitudes (using a five-point Likert scale), and open-ended suggestions. The questionnaire was validated by 3–5 dental education experts and pilot-tested on 20 students (Cronbach's $\alpha \geq 0.7$). Surveys were distributed electronically or in print over four to six weeks. Data analysis was performed using SPSS v25, with descriptive statistics summarizing responses, and Chi-square and Pearson's correlation tests examining associations between awareness and attitudes. Significance was set at $p < 0.05$.

Results: A total of 384 dental students participated in the study. The majority of participants were females (84.8%),

followed by males (14.1%), while 1.1% preferred not to disclose their gender. Most respondents were in the third year of BDS, followed by second- and fourth-year students. Regarding exposure to artificial intelligence (AI), 66% reported no prior exposure to AI-based tools in dentistry, whereas 26% reported some exposure. The overall mean knowledge score was 0.652, indicating a moderate level of knowledge about AI applications in dentistry. The mean attitude score was 3.66 out of 5, reflecting a generally positive attitude toward the integration of AI in dental education and clinical practice. Most participants agreed that AI could improve diagnostic accuracy and efficiency, and that AI should be incorporated into undergraduate dental education, although some expressed neutral views regarding AI replacing dentists and potential ethical concerns.

Conclusion: The findings of this study indicate that dental students possess moderate knowledge and generally positive attitudes toward artificial intelligence in dentistry. However, practical exposure to AI technologies remains limited among students. These results highlight the need to incorporate AI-related education and training into the undergraduate dental curriculum.

Keywords: Artificial Intelligence; Dental Education; Dental Students; Knowledge; Attitude.

UG-PP-30 — Awareness and Preparedness for Medical Emergencies Among Dental Students

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Background & Objectives Dentistry involves procedures that may put patients at risk of medical emergencies (ME), such as syncope, anaphylaxis, hypoglycaemia, seizures, and orthostatic hypotension. These often result from incomplete medical histories, missed vital checks, or unrecognized patient distress. This study aimed to assess dental students' awareness of ME and the availability of emergency equipment.

Methods A descriptive cross-sectional study was conducted among dental students at RCD using a structured questionnaire. Of 225 proposed participants, 210 responses were received, and 200 valid responses were included in the final analysis. Data were analyzed using descriptive statistics and presented as frequencies, percentages, and mean Likert scores.

Results: Most participants showed good awareness of medical emergencies, with strong agreement on the importance of BLS (mean 4.37). While a blood pressure apparatus (82.5%) and emergency kit (67%) were commonly available, oxygen (58.8%), adrenaline (58.3%), and Ambu bags (30.1%) were limited. Confidence in independent management was moderate (mean 3.59), and only 46.3% regularly checked drug expiry.

Conclusion: Although awareness of medical emergencies was satisfactory, gaps remain in preparedness, confidence, and availability of essential equipment. Regular hands-on training and complete emergency kits are recommended to enhance preparedness and patient safety.

Keywords Medical emergencies, Emergency preparedness, Dental clinics

UG-PP-31 — Awareness and Prevalence of Fluoridated Toothpaste Use Among University Students

Background & Objective:

Fluoride is a well-established agent in the prevention of dental caries and is widely incorporated into modern toothpastes. Despite global recommendations by the World Health Organization and the American Dental Association for twice-daily use of fluoridated toothpaste, awareness and correct usage among young adults—particularly university students—remain inconsistent.

This study aimed to assess the awareness, usage patterns, and attitudes toward fluoridated toothpaste among university students and to compare awareness levels across different academic disciplines.

Methods: A descriptive cross-sectional study was conducted among undergraduate students of Rehman Medical Institute (RMI), including MBBS, BDS, Nursing, DPT, and Allied Health Sciences programs. A total of **200 participants** were selected using convenience sampling. Data were collected through a self-administered structured questionnaire comprising demographic details, toothpaste usage, and awareness regarding the benefits and overuse of fluoride. Data were analyzed using SPSS version 25. Descriptive statistics were used to calculate frequencies and percentages, and the Chi-square test was applied to assess associations between academic discipline and fluoride awareness. A p-value of <0.05 was considered statistically significant.

Results:

The study revealed varying levels of awareness regarding fluoridated toothpaste among university students. While a majority reported regular toothpaste use, a substantial proportion were unable to correctly identify whether their toothpaste contained fluoride or understand its optimal usage. Awareness levels differed significantly across academic disciplines, with students from health-related programs demonstrating higher knowledge compared to non-dental disciplines.

Conclusion:

Awareness and correct use of fluoridated toothpaste among university students were found to be suboptimal. The findings highlight the need for targeted oral health education programs within university settings to improve knowledge regarding fluoride benefits, appropriate usage, and preventive oral health practices.

Keywords: Fluoridated toothpaste, fluoride awareness, dental caries prevention, university students, oral health

UG-PP-32 — Awareness, Uptake, and Barriers to Hepatitis B Vaccination Among Medical Students

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Background & Objectives: Hepatitis B virus (HBV) remains a significant global health concern and a critical occupational hazard for healthcare workers, including medical students. Although an effective vaccine is available, gaps in awareness and uptake persist. This study aimed to assess the awareness, vaccination uptake and barriers to Hepatitis B vaccination among medical students at

LUMHS, Jamshoro. To determine the awareness and uptake of Hepatitis B vaccination among medical students. To evaluate how demographic factors relate to vaccination uptake.

Methods: A cross-sectional study was conducted among MBBS students at LUMHS from July 18-23, 2025. A self-administered questionnaire was used to collect data on sociodemographics, vaccination status, barriers and knowledge on HBV. Data were analyzed using SPSS version-23. Descriptive statistics summarized frequencies and percentages. chi-square tests evaluated associations ($p < 0.05$ considered significant).

Results: Among 343 participants, most were aged between 20-23 years; 55.5% were female, and 64.7% resided in urban areas. 86.1% had studied Hepatitis B, and 98.8% were aware of the disease. Although 84.4% supported universal vaccination, only 45.1% had received at least one dose. Top reported barriers included lack of awareness, no recommendation, forgetting schedule, time limits and fear of side effects. A significant association was found between awareness and vaccination uptake ($\chi^2 = 11.36$, $p = 0.001$).

Conclusion: Despite high levels of general awareness, HBV vaccine uptake among LUMHS students remains insufficient. Institutional efforts are required to address logistical barriers and implement targeted educational interventions. Strengthening on-campus vaccination programs and mandating immunization for clinical rotations may improve vaccine coverage in this high-risk group.

Keywords: Awareness; Hepatitis B; Medical students; Vaccine uptake

UG-PP-33 — Barriers to Accessing Primary Healthcare During Pregnancy: A Qualitative Study

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Background: Access to quality antenatal care (ANC) is essential for reducing maternal and neonatal morbidity and mortality. However, in rural and mountainous regions like Swat, women face multiple challenges in utilizing primary healthcare services during pregnancy. Despite the efforts to strengthen the maternal health services in Pakistan, utilization remains suboptimal, particularly in the underserved areas.

Objectives: To explore the barriers faced by pregnant women in Swat in accessing primary healthcare during pregnancy and to identify strategies for improvement.

Method: This qualitative exploratory study was conducted at the Gynaecology and Obstetrics Department of Saidu Teaching Hospital, Swat. Data were collected from 50 women who were either pregnant or had delivered within the past 12 months, using semi-structured interviews. Purposive sampling ensured diversity in age, socioeconomic background, and residence. Pashto language interviews were translated into English and data were analysed using thematic analysis to identify recurring patterns and themes.

Results: Nine major themes emerged: (1) Financial constraints limiting ANC access, (2) Transport and Geographical barriers, (3) Knowledge and Awareness, (4) Low education an indirect barrier to ANC, (5) Gender preference for healthcare provider as a cultural

barrier to ANC, (6) Service quality and Patient Provider Relationship, (7) Health seeking behaviour – Choice of facility, (8) Cultural and Religious Beliefs, (9) Suggested improvements in ANC services

Conclusion: Multiple structural, cultural, and financial barriers hinder timely ANC access in Swat. Interventions addressing affordability, facility accessibility, and gender-sensitive care are essential to improve maternal health outcomes in this region.

Keywords Antenatal care, primary healthcare, barriers, Swat, qualitative study, maternal health

UG-PP-34 — Breastfeeding vs Bottle Feeding: Implications for Early Childhood Caries

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BACKGROUND: Dental caries is the most common preventable noncontagious disease affecting the teeth. The American Academy of Pediatric Dentistry defines ECC as the presence of one or more decayed, missing (due to caries), or filled teeth in primary teeth of a child aged 71 months or younger. This study explores the relationship between breastfeeding and bottle feeding in the development of ECC. It aims to generate evidence based data that can guide parents in making informed feeding choices supporting their child's oral health. The primary Objectives are to compare the prevalence and incidence of ECC among breastfed and bottle fed children and to identify feeding related factors that may contribute to the development of caries in early childhood.

METHODS: This analytical cross sectional study was employed in Rehman College Of Dentistry (RCD) over a 1 month period using convenience sampling. A total of 124 subjects were included in this study, based on history of feeding from the mother and clinical evaluation of children under 6 years of age. Children with disabilities and those over the age of 6 were excluded from the study. Data was entered and analysed through IBM SPSS statistics.

RESULTS: The reviewed data revealed that 60.5% of children fed with formula milk showed caries whereas only 6.5% of breast fed children developed caries. Among bottle feeding, formula milk had higher caries prevalence than cow's milk (17.7%). Children frequently consuming sugary drinks (4%) also developed caries at a lower reported percentage. This suggests that bottle feeding with formula milk increases ECC risk, particularly when combined with frequent sugar intake and poor oral hygiene.

CONCLUSION: Early Childhood Caries (ECC) remains a major global health issue, and if untreated, causes pain, infection and reduced self confidence in children. Prevention through better oral health awareness, early detection and evidence based feeding practices is essential to protect children's overall well being.

Keywords: breastfeeding , early childhood caries, bottle feeding, oral health, children.

UG-PP-35 — Brucellosis Presenting With Bilateral Sacroiliitis: A Case Report and Diagnostic Pitfalls

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Background & Objectives: Brucellosis is a zoonosis endemic in rural areas. It is caused by *Brucella* species, which are transmitted through unpasteurized dairy product intake and contact with infected animals. Sacroiliac joint involvement is common in brucellosis and typically presents as unilateral sacroiliitis. Bilateral sacroiliitis is a rare and unusual complication of brucellosis, posing diagnostic concerns.

Case presentation A 19-year-old man presented with a one-month history of bilateral buttock pain radiating to the legs and a 2-week history of fever. He reported unpasteurized milk intake. Physical examination revealed sacroiliac joint tenderness, and Patrick's as well as Gaenslen's test elicited pain in the joint. Laboratory findings showed mild leukocytosis and increased inflammatory markers. Serology was positive for *Brucella* Abortus and Melitensis antibodies. MRI showed bilateral sacroiliitis, along with erosive changes and marrow edema. A diagnosis of brucellosis complicated by bilateral sacroiliitis was made. 15-day therapy with oral doxycycline, co-trimoxazole, and intravenous gentamicin yielded a favorable response and was continued further.

Conclusion Bilateral sacroiliitis is a rare manifestation of brucellosis. It mimics tuberculous and autoimmune spondylorarthropathy. Clinicians in endemic areas must consider brucellosis as a differential diagnosis in patients with bilateral lower back or buttock pain. MRI and serology reports are useful in early recognition.

Bilateral sacroiliitis is a rare and unusual complication of brucellosis that mimics tuberculous and autoimmune

spondyloarthropathies on presentation, posing a significant diagnostic challenge.

Keywords

Brucellosis – Zoonosis – Sacroiliac joint – Bilateral sacroiliitis – Case report

UG-PP-36 — Burden of Cervical Cancer Among Women in Pakistan (1990–2021): Findings From the GBD 2021 Study

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Background: Cervical cancer remains a major cause of morbidity and mortality among women worldwide, with more than 85% of deaths occurring in low- and middle-income countries. In Pakistan, limited human papillomavirus (HPV) vaccination coverage, inadequate screening programs, and low public awareness have contributed to a sustained cervical cancer burden. Despite being largely preventable, cervical cancer remains underprioritized in national health policies. This study aimed to assess the burden and temporal trends of cervical cancer among women in Pakistan from 1990 to 2021 using data from the Global Burden of Disease (GBD) 2021 study.

Methods: A population-based observational analysis was conducted using GBD 2021 estimates. Data were extracted on prevalence, incidence, mortality, and disability-adjusted life years (DALYs) related to cervical cancer among Pakistani women. Estimates were generated using the DisMod-MR 2.1 modeling framework. Temporal trends were evaluated using joinpoint regression analysis, and Average Annual Percent Change (AAPC) was calculated. Provincial-level prevalence rates for 2021 were also analyzed to assess geographic variation.

Results: Between 1990 and 2021, the prevalence of cervical cancer increased from 8,034 to 28,451 cases (+254%), while incidence rose from 2,317 to 6,734 cases (+191%). Mortality increased from 1,432 to 3,386 deaths (+136%). Despite these increases, the age-standardized DALY rate showed a modest decline from 166.3 to 157.5 per 100,000 population (−5.3%). In 2021, the highest prevalence rates were observed in Azad Jammu and Kashmir, Balochistan, and Khyber Pakhtunkhwa, while Sindh and Islamabad had comparatively lower rates.

Conclusion: The burden of cervical cancer in Pakistan has increased substantially over the past three decades. Rising incidence and mortality highlight persistent gaps in prevention and early detection. Urgent implementation of nationwide HPV vaccination, expanded screening programs, and strengthened cancer control policies is essential to reduce the future burden of cervical cancer in Pakistan.

Keywords: Cervical Cancer, Global burden of disease, Papilloma virus, Pakistan

UG-PP-37 — Cancer Mortality With Contributing COPD in U.S. Adults: A CDC WONDER Multiple-Cause-of-Death Analysis

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Chronic obstructive pulmonary disease (COPD) and cancer frequently co-exist and adversely affect prognosis, treatment tolerance, and survival. Their overlapping pathophysiology, including chronic

inflammation, oxidative stress, and shared environmental exposures, provides a biological basis for co-occurrence. Despite shared risk factors, long-term national trends and disparities in cancer mortality with COPD as a contributing factor remain poorly characterized. This study examined temporal trends and population-level disparities in such mortality among U.S. adults.

A retrospective population-based analysis was conducted using mortality data from the CDC WONDER database. Death certificate records from 1999–2023 were analyzed for adults aged ≥25 years with cancer (ICD-10 codes C00–D48) as the underlying cause of death and COPD (J44) listed as a contributing factor. Crude and age-adjusted mortality rates per 100,000 were calculated and stratified by sex, age, race/ethnicity, state, and urbanization. Temporal trends were assessed using Joinpoint regression.

From 1999–2023, 902,710 deaths were documented. Rates were stable until 2005, followed by a significant decline (AAPC −0.52%). Males had higher mortality than females, with significant reductions observed only among males. Declines occurred among Hispanic/Latino and Asian/Pacific Islander populations, while no significant change was observed among American Indian/Alaska Native individuals. Older adults bore the greatest burden. Declining regional trends were seen in the Northeast and West, whereas the South showed recent increases. Non-metropolitan areas consistently had higher mortality.

Although mortality has declined, substantial demographic and geographic disparities persist, highlighting the need for targeted prevention and risk-reduction strategies.

UG-PP-38 — Case Report: Visual Acuity Decline in a Patient on Linezolid for Multidrug-Resistant TB

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Linezolid is a second-line anti-tuberculosis drug commonly used in the treatment of multidrug-resistant tuberculosis (MDR-TB). Although effective, prolonged use is associated with serious adverse effects, including optic neuropathy. This case aims to highlight visual complications associated with long-term linezolid therapy.

A 35-year-old female diagnosed with MDR-TB was on linezolid therapy for five months. She presented with progressive visual disturbances, including decreased visual acuity, impaired color vision, and reduced contrast sensitivity. Comprehensive ophthalmological examination, including optical coherence tomography (OCT), was performed.

Results:

Examination revealed bilateral optic neuropathy with features of papillitis. OCT findings supported optic nerve involvement. The patient's visual symptoms were attributed to prolonged linezolid use. Following discontinuation of the drug, gradual improvement in visual function was observed, suggesting reversibility.

Linezolid-induced optic neuropathy is a significant but potentially reversible complication. Regular baseline and follow-up ophthalmological evaluations are essential for early detection and prevention of permanent

visual impairment in patients receiving linezolid therapy.

Keywords: MDR-TB, linezolid, optic neuropathy, papillitis, visual impairment

UG-PP-39 — Case Report: Congenital Insensitivity to Pain Without Anhidrosis

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Background & Objectives: A rare and sometimes fatal neurogenetic condition called Congenital

Insensitivity to Pain (CIP) affects how pain and temperature are perceived, which can result in serious

injuries and self-mutilation. The purpose of this case study is to describe the typical presentation and

diagnostic difficulties of CIP in a young patient, emphasizing the vital role of clinical evaluation and

the significance of early intervention to avoid potentially fatal sequelae.

Methods: A 6-year-old boy with a lifetime history of pain insensitivity had a thorough clinical

assessment. A comprehensive physical examination to rule out anhidrosis and other sensory

deficiencies, a review of recorded injuries, and a full patient history served as the foundation for the

diagnostic procedure. By using this method, the case was distinguished from other types of Hereditary

Sensory and Autonomic Neuropathy (HSAN).

Results: The diagnosis of CIP was supported by important clinical findings. These included a history

of repetitive damage to the fingers and toes, an asymptomatic fracture of the right femur, recurrent heat

burns on the extremities, and severe oral self-mutilation that resulted in a forked tongue and loss of

front teeth. A paternal cousin was apparently impacted, suggesting a familial tendency. Anhidrosis was

not present, and all other sensory modalities were unharmed.

Conclusion: The serious hazards of auto-mutilation and orthopedic harm in CIP are highlighted by this instance. It shows that thorough history-taking and a high clinical index of suspicion are critical for diagnosis, particularly in situations where genetic testing is not available. In order to reduce problems and enhance the quality of life for people with this crippling condition, the paper finds that proactive, multidisciplinary management including tooth protection, environmental change, and comprehensive caregiver education is crucial.

Keywords: Congenital insensitivity to pain, Neurogenetic disorder, Self-mutilation, Painless fractures, and Hereditary sensory neuropathy.

UG-PP-40 — Challenges Faced by Elderly Patients in Adapting to New Complete Dentures

Background and Objective: Health Organization, the global prevalence of complete edentulism ranges from 7% to 69%. Edentulism causes functional, esthetic, and psychological problems, lowering self-esteem and social confidence. Although complete dentures are an affordable treatment option, their success is often evaluated clinically rather than from the patient's perspective. Factors such as socioeconomic status, psychological adaptation, ridge resorption, limited awareness, and oral discomfort influence denture acceptance. Literature shows periodontal disease as a major cause of edentulism, with elderly patients commonly reporting sore spots and difficulty wearing dentures.

To identify the problems faced by elderly patients in adapting to new complete dentures and to evaluate the effect of socioeconomic factors on denture adaptation and quality of life.

Materials and Methods: A cross-sectional study was conducted among edentulous patients aged 40 years and above seeking complete denture treatment. A calculated sample size of 369 was required. Data were collected through questionnaires from prosthodontic departments after ethical approval and analyzed using SPSS version 20.

Results: Among 100 participants (60% females), most belonged to low or middle socioeconomic groups. Common problems included pain and sore spots (75%), loose dentures (75%), speaking difficulty (70%), dry mouth (50%), anxiety (75%), and reduced confidence (60%). Females reported greater embarrassment. Socioeconomic status significantly influenced confidence and social comfort. Socioeconomic status and gender both variables were compared using spss version 20

and their p value is significant as it was <0.05 ($p = 0.028$)

Conclusions: Complete dentures should focus on comfort, stability, and psychological support to improve adaptation and enhance the quality of life of elderly patients.

Key words: Complete denture, adaptation, edentulism, elderly.

UG-PP-41 — Clinical Validation of Orthodontic Oral Health Literacy and Behavior Tools Using CPITN and OHI-S

Background and Objective: Oral health literacy (OHL) and oral health behaviors (OHB) are critical determinants of treatment adherence and periodontal outcomes in orthodontic care. While OHL-Ortho and OHB tools were recently developed, their clinical validity in diverse populations remains untested.

To clinically validate the OHL-Ortho and OHB instruments in a South Asian orthodontic population using objective quiz scores and standardized clinical indices.

Materials and Methods: A cross-sectional study was conducted including 52 adult patients undergoing fixed orthodontic treatment. Participants completed the OHL-Ortho and OHB questionnaires, followed by a validated 12-item quiz assessing orthodontic knowledge. Subsequently, all participants underwent a clinical examination using the Community Periodontal Index of Treatment Needs (CPITN) and the Simplified Oral Hygiene Index (OHI-S). Internal consistency and test-retest reliability were assessed using Cronbach's alpha (α) and Intraclass Correlation Coefficients (ICCs). Convergent validity was evaluated using Spearman's correlation and regression analyses.

Results: The OHL-Ortho ($\alpha = 0.82$, ICC = 0.82) and OHB ($\alpha = 0.91$, ICC = 0.91) tool

showed excellent reliability. OHL-Ortho scores displayed strong positive correlation with quiz scores ($\rho = 0.610$, $p < 0.001$). OHB scores demonstrated strong inverse correlations with CPITN ($\rho = -0.627$, $p < 0.001$) and OHI-S ($\rho = -0.669$, $p < 0.001$). Regression analyses confirmed OHL-Ortho as a predictor of OHB ($\beta = 0.391$), and both scales independently predicted OHI-S outcomes ($p < 0.001$).

Conclusions: OHL-Ortho and OHB are valid and reliable instruments for assessing orthodontic literacy and behavior. Their integration into clinical orthodontic workflows may improve risk stratification, patient education, and oral health outcomes.

Keywords: Orthodontic Oral Health Literacy, Oral Health Behavior, Clinical Validation, Health Measurement Tools, Orthodontic Literacy

UG-PP-42 — Comparative Efficacy and Safety of Metallic vs Plastic Stents for Biliary Obstruction: A Systematic Review

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Background & Objectives; Biliary obstruction resulting from liver and bile duct malignancies or post-transplant strictures is one of the common clinical problems that often needs endoscopic stenting to restore biliary drainage and relieve symptoms. Metallic stents (MS) and plastic stents (PS) are the principal endoscopic options used in clinical practice. Although metallic stents are generally expected to provide longer patency, their comparative effectiveness and safety relative to plastic stents remain unclear. This study aimed to

determine the efficacy and safety of metallic stents versus plastic stents in patients with biliary obstruction through a systematic review and meta-analysis.

Methods: The review was conducted in accordance with PRISMA 2020 guidelines. A comprehensive search of PubMed, Embase, and the Cochrane Library was performed from database inception to December 2025 to identify eligible studies. Randomized controlled trials and observational cohort studies comparing metallic and plastic stents in biliary obstruction were included. Outcomes of interest comprised functional success, overall survival, procedure time, adverse events, and recurrent biliary obstruction (RBO). Risk of bias was assessed using the Cochrane Risk of Bias 2 tool for randomized trials and the Newcastle–Ottawa Scale for observational studies.

Results: Nine studies presenting a total of 890 patients were included in the analysis. Functional success rates were comparable between metallic and plastic stents (RR: 1.04, 95% CI: 0.99–1.09). Metallic stents demonstrated a borderline survival advantage and showed reduced recurrent biliary obstruction (RR: 0.64, 95% CI: 0.39–1.04), although heterogeneity among studies was high. Procedure times were slightly shorter with metallic stents (MD: –7.29 minutes, 95% CI: –19.15 to 4.57), but this difference was not statistically significant. Adverse event rates were similar between both groups (RR: 1.37, 95% CI: 0.91–2.05).

Conclusion: Overall, metallic stents provide comparable functional success and safety to plastic stents, with potential advantages in survival and reduced recurrence of biliary obstruction; however, further large multicenter randomized trials are warranted to confirm these findings and guide optimal patient selection.

Keywords: Biliary obstruction, Metallic stents, Plastic stents, Endoscopic stenting, Meta-analysis

UG-PP-43 — Comparative Evaluation of Chemical and Herbal Denture Cleansers on Salivary pH and Microbial Load

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BACKGROUND & OBJECTIVES:

Complete denture wearers are susceptible to microbial accumulation and alterations in the oral environment due to biofilm formation on acrylic denture surfaces. Poor denture hygiene may predispose patients to denture stomatitis and changes in salivary pH. Therefore, evaluating the antimicrobial efficacy and patient acceptability of denture cleansers is clinically important.

To assess and compare the change in salivary pH in complete denture wearers using herbal versus chemical denture cleansers. To assess and compare the change in microbial load on dentures before and after cleanser use. To evaluate and compare patient satisfaction and comfort with herbal and chemical denture cleansers.

METHODS:

Thirty complete denture wearers were randomly allocated into two groups (n=15 each). Group I used pH 9 Formula, and Group II used clove oil for three weeks. Baseline and post-intervention denture swabs were cultured on Sabouraud dextrose agar to determine colony-forming units (CFUs). Salivary pH was measured using salivary pH strips. Patient satisfaction was assessed through a structured

questionnaire. Data were analyzed using paired and independent t-tests.

RESULTS:

Both cleansers showed significant reduction in microbial load and increased salivary pH toward neutral values ($p < 0.05$). Clove oil demonstrated slightly greater microbial reduction and better patient comfort, though differences were not statistically significant.

CONCLUSION:

Both cleansers were effective. Clove oil showed comparable efficacy with higher patient satisfaction.

KEYWORDS:

Denture cleansers, Microbial load, Salivary pH, Complete denture wearers

UG-PP-44 — Comparative Evaluation of Leish-Nat Z Cream and Glucantime in a Mouse Model of Cutaneous Leishmaniasis

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Background & Objectives: Cutaneous leishmaniasis is a neglected parasitic disease caused by *Leishmania* species and remains a significant public health problem in endemic regions, including Pakistan, where current treatments are limited by toxicity, high cost, painful administration, and emerging drug resistance. The objective of this study was to evaluate the therapeutic efficacy and safety of a locally developed herbal topical formulation, Leish-Nat Z cream, alone and in combination with Glucantime, in a murine model of cutaneous leishmaniasis.

Methods: This experimental study was conducted at the Institute of Pathology and Diagnostic Medicine, Khyber Medical University, using BALB/c mice infected with *Leishmania tropica*. Animals were divided into control, Glucantime-treated, Leish-Nat Z cream-treated, and combination therapy groups, and treatment was continued for 28 days. Lesion size was measured at regular intervals, and animals were monitored for clinical signs and adverse effects throughout the study period.

Results: The results showed a progressive increase in lesion size in the control group, while Glucantime alone produced minimal therapeutic improvement. In contrast, Leish-Nat Z cream significantly reduced lesion size, with the most pronounced effect observed in the combination therapy group, where lesions were markedly reduced or completely healed. No significant toxicity or adverse effects were observed in treated animals.

conclusion, Leish-Nat Z cream, particularly when used in combination with Glucantime, demonstrated superior efficacy and safety compared to standard treatment alone, highlighting its potential as an effective, locally produced topical alternative for the management of cutaneous leishmaniasis.

Keywords: Cutaneous leishmaniasis, *Leishmania tropica*, Leish-Nat Z cream, Glucantime, Mouse model

UG-PP-45 — Comparative Mortality Trends in Multiple Sclerosis and Aspiration Pneumonia in the United States (1999–2020)

Background:

Multiple sclerosis (MS) is a chronic neurological disorder that can cause dysphagia,

increasing the risk of aspiration pneumonia (AP), a serious and potentially fatal complication. This study examined long-term mortality trends associated with MS and AP in the United States from 1999 to 2020.

Methods: Mortality data were obtained from the CDC Wide-Ranging Online Data for Epidemiologic Research (WONDER) Multiple Cause of Death database. Deaths involving MS (ICD-10 G35) and AP (ICD-10 J69) as underlying or contributing causes were analyzed among adults aged ≥ 25 years. Age-adjusted mortality rates (AAMRs) per 100,000 population were stratified by year, sex, age group, race/ethnicity, urbanization level, census region, and state. Annual percent changes (APCs) with 95% confidence intervals (Cis) were estimated using Joinpoint regression, with $p < 0.05$ considered significant.

Results: A total of 1,409,682 deaths were identified. Overall APCs were 0.95% (1999–2002), –3.50% (2002–2008), and –0.32% (2008–2020). Males had higher AAMRs than females (39.64 vs. 23.27). Mortality increased with age, peaking in individuals aged ≥ 85 years (40.86%). Higher AAMRs were observed among non-Hispanic individuals, Black populations, residents of non-metropolitan areas, and those in the Southern census region. Washington had the highest state-level AAMR.

Conclusion: Mortality related to MS and AP disproportionately affects older adults, males, Black populations, and rural residents. Early dysphagia screening and targeted preventive strategies are essential to reduce aspiration-related mortality in patients with MS.

Key Words: AAMR: age adjusted mortality rate and APC: annual adjusted mortality rate.

UG-PP-46 — Comparative Outcomes of Arthroscopic Meniscectomy vs Conservative Management for Medial Meniscus Injuries

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Background: The best way to treat medial meniscus injuries is still up for debate, with growing evidence raising doubt on the benefits of conservative care over arthroscopic partial meniscectomy, especially in cases of degenerative tears.

Objective: To compare short-term functional outcomes of arthroscopic partial meniscectomy and conservative management for medial meniscus injuries.

Methods: This retrospective cohort study included 90 patients with MRI-confirmed medial meniscus tears treated at a single tertiary center between February 2024 and February 2025. Patients received either arthroscopic partial meniscectomy ($n = 50$) or an 8-week structured rehabilitation program ($n = 40$). The primary outcome was $>30\%$ improvement in the Knee Injury and Osteoarthritis Outcome Score at 6 months, with secondary outcomes including Lysholm and Tegner scores, reoperation rates, complications, and predictors of favorable outcomes.

Results: At 6 months, $>30\%$ KOOS improvement was observed in 72.0% of surgically treated patients compared with 50.0% in the conservative group ($p = 0.02$). Mean Lysholm (81.4 ± 8.2 vs. 73.6 ± 9.8 ; $p = 0.01$) and Tegner scores (5.5 ± 1.1 vs. 4.3 ± 1.2 ; $p = 0.02$) were significantly higher following APM. Favorable outcomes were independently associated with age < 50 years, BMI < 30 kg/m², and minimal cartilage damage. Reoperation

rates were lower after APM (4.0% vs. 12.5%; $p = 0.04$), with few complications in both groups.

Conclusion: While conservative treatment is still appropriate as first-line therapy for degenerative tears, arthroscopic partial meniscectomy produced better short-term outcomes and a quicker recovery in certain patients without advanced degeneration.

Keywords:

Medial meniscus tear, arthroscopic partial meniscectomy, conservative management, knee injury, functional outcome

UG-PP-47 — Comparative Outcomes of Surgical vs Non-Surgical Management of Small Renal Masses: Systematic Review

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Background And Objectives & Objectives: The increase use of cross-sectional imaging modalities has led to a marked increase in the

incidental detection of small renal masses (SRMs), typically defined as renal tumors measuring ≤ 4 cm in greatest dimension, consistent with T1a renal cell carcinoma (RCC).1,2. In the last decades, surgical excision was considered the standard management of SRMs, with partial nephrectomy (PN), open and laparoscopic, preferred due to its nephron-sparing benefits and comparable oncologic outcomes to radical nephrectomy.3 5. More recently, non-surgical approaches including active surveillance (AS), and minimally invasive approaches including thermal ablation (TA) modalities such as radiofrequency ablation (RFA) and cryoablation, have emerged as viable alternatives. 6,7. Several studies have noted that PN, AS, and TA have similar cancer-specific survival (CSS), however, AS tends to show worse overall survival (OS). 8–10 This systematic review and meta-analysis aim to compare oncologic and functional outcomes between surgical and non-surgical management of SRMs, thereby aiding clinicians in optimizing patient-specific treatment strategies.

Materials & Methods: This PRISMA-compliant systematic review (PROSPERO: CRD420250656039) evaluated surgical (partial/radical nephrectomy) versus non-surgical (thermal ablation, RFA, cryoablation, active surveillance) management of small renal masses (<4) A comprehensive search of PubMed, Embase, Cochrane, Web of Science, and Scopus was conducted for studies published before March 1, 2025. Eligible RCTs, cohort, and case-control studies were included; primary outcomes were overall survival, cancer specific survival, and perioperative complications, with data independently extracted and bias assessed.

Results: No significant differences were observed between partial nephrectomy (PN) and non-surgical approaches (radiofrequency ablation [RFA], cryoablation) in terms of cancer-specific survival (HR=2.76, 95% CI: 1.93–3.94, P=0.45, I²=0%) or recurrence-free survival (HR=1.67, 95% CI: 0.69–4.05, P=0.26, I²=0%), overall survival (HR=2.53, 95% CI: 1.87–3.43, P=0.00001, I²=71%), Early Clavien Dindo grade 3–4 complications (RR=0.80, 95% CI: 0.43–1.48, P=0.47) and early mortality (grade 5) (RR=1.32, 95% CI: 0.97–1.80, P=0.08). The renal function outcomes favored PN: at 3 months, eGFR change showed a significant difference (mean difference = 4.99 mL/min/1.73 m², P=0.00001); at 6 months, the difference was not statistically significant (P=0.16). The hospital stay duration was comparable (mean difference = 0.37 days, P=0.20, I²=80%), with high heterogeneity across studies.

Conclusions: Partial nephrectomy and non-surgical options show comparable oncologic and perioperative outcomes for small renal masses, with partial nephrectomy offering better short-term renal function. Treatment should be individualized based on patient risk profiles

Key words: Small renal masses, Active Surveillance, Partial Nephrectomy, Cancer

UG-PP-48 — Comparison of Dental Anxiety Levels Between First-Time Patients and Those With Previous Dental Experience

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Background & Objectives: Dental anxiety is

a common psychological barrier that discourages individuals from seeking timely dental care. Although dental anxiety has been widely studied, limited research has compared anxiety levels between first-time dental patients and those with prior dental experience. This study aimed to assess dental anxiety using the Modified Dental Anxiety Scale (MDAS) and compare anxiety levels between first-time and experienced dental patients.

Methods: A cross-sectional analytical study was conducted among adults aged 18 years and above. Data were collected using a structured questionnaire including demographic information, dental visit history, and the five-item Modified Dental Anxiety Scale (MDAS). A total of 278 participants were included. Data were analyzed using SPSS software. Descriptive statistics summarized participant characteristics and anxiety levels, while Chi-square tests assessed associations between dental anxiety and previous dental experience, with significance set at $p < 0.05$.

Results: Among the 278 participants, 75% were female with a mean age of 23.48 ± 7.13 years. Most respondents (82.7%) had previous dental visits, while 17.3% were first-time patients. Higher anxiety was reported for invasive procedures such as tooth drilling and local anesthetic injections. Significant associations were found between previous dental experience and anxiety related to dental check-ups ($p < 0.001$) and scaling procedures ($p = 0.002$). Overall, first-time patients demonstrated higher anxiety levels than experienced patients.

Conclusion: Dental anxiety remains prevalent, particularly among first-time dental patients. Patient education and anxiety management strategies may improve patient comfort and

encourage regular dental visits.

Keywords: Dental Anxiety, MDAS, Dental Experience, Oral Health.

UG-PP-49 — Comparison of Per-Operative Subdiaphragmatic Ropivacaine Instillation vs Placebo in Reducing Shoulder Pain After Laparoscopic Cholecystectomy

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Background & Objectives: Laparoscopic cholecystectomy is the gold-standard procedure for gallbladder disease; however, postoperative shoulder tip pain due to diaphragmatic irritation from residual carbon dioxide pneumoperitoneum remains a significant cause of patient discomfort. This study aims to compare the effectiveness and safety of per-operative subdiaphragmatic instillation of ropivacaine versus placebo in reducing postoperative shoulder tip pain.

Methods: A randomized controlled trial will be conducted at Rehman Medical Institute, Peshawar, over one year. A total of 100 patients aged 18–60 years with ASA physical status I–II undergoing laparoscopic cholecystectomy will be enrolled. Patients will be randomly allocated into two groups: Group A will receive subdiaphragmatic ropivacaine, while Group B will receive normal saline (placebo). Shoulder tip pain will be assessed using the Visual Analog Scale (VAS) at 0, 8, 16, and 24 hours postoperatively. Secondary outcomes include time to first rescue analgesia and incidence of postoperative nausea and vomiting.

Results: It is anticipated that patients receiving ropivacaine will demonstrate significantly lower shoulder tip pain scores at all time intervals compared to the placebo group. Additionally, a longer duration before the first request for analgesia and no significant increase in adverse effects are expected.

Conclusion: Per-operative subdiaphragmatic instillation of ropivacaine is expected to be a safe and effective technique for reducing postoperative shoulder tip pain and improving patient comfort following laparoscopic cholecystectomy.

Keywords: Laparoscopic cholecystectomy, shoulder tip pain, ropivacaine, subdiaphragmatic instillation, postoperative analgesia

UG-PP-50 — Comparison of Post-Operative Complications in Hypertensive vs Non-Hypertensive Patients in Neuro-Oncology

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Background And Objectives: Hypertension is a common comorbidity among patients undergoing neurosurgical procedures and may influence postoperative outcomes. Limited data exist assessing its direct association with complications following intracranial tumor resection. The Aim of this study is to compare postoperative complications between hypertensive and non-hypertensive patients undergoing intracranial tumor resection at Rehman Medical Institute (RMI).

Methods: This retrospective comparative study analyzed records of 54 patients who

underwent intracranial tumor resection between January 2020 and January 2025. Patients were divided into hypertensive (n=17) and non-hypertensive (n=37) groups. Data were analyzed using SPSS v25, applying Fischer's exact tests and t-tests, with $p < 0.05$ considered significant.

Results: The mean age was significantly higher in hypertensive patients (51.88 ± 15.17 years) compared to non-hypertensive patients (35.73 ± 16.27 years, $p=0.001$). No statistically significant differences were found between the two groups regarding postoperative hemorrhage ($p=0.501$), infection ($p=0.562$), hospital stay ($p=0.248$), GCS at 24h ($p=0.851$), GCS at 48h ($p=0.344$), or mortality ($p=0.494$). A non-significant trend was noted toward more re-do surgeries among non-hypertensive patients ($p=0.073$).

Conclusion: Hypertension was not significantly associated with early postoperative complications, neurological recovery, or mortality following intracranial tumor resection. The findings suggest that with adequate perioperative management, hypertensive status alone may not predict poor short-term outcomes. Larger, multi-center studies are recommended to validate these results. Furthermore prospective studies would yield better and authentic results concerning hypertension and post-operative complications in patients undergoing craniotomy for tumors.

Keywords: Hypertension, Intracranial tumor, Postoperative complications, Craniotomy

UG-PP-52 —Comparison Of Upper Lip Length To The Incisal Exposure Of Maxillary Anterior Teeth

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Background & Objectives: The esthetics of the face and teeth are among the most important aspects that demand an exhibition of vertical anterior teeth. It also helps in the prognosis of the outcome of orthognathic surgery, implant surgery, operative dentistry, anterior aesthetic surgery, and fixed or removable prosthetic procedure. This paper seeks to determine the relationship between upper lip to subnasale distance and the extent of maxillary incisal show, which forms the core of dental aesthetics.

Methods: This cross-sectional study was conducted at the Orthodontics Department of Peshawar Dental College & Hospital, Pakistan, and involved clinical measurements of upper lip length and incisal exposure using a digital vernier caliper. 235 adult patients were assessed according to their upper lip length and their classification was done under short upper lip, normal upper lip or enhanced upper lip length.

Results: A digital vernier caliper was used to measure the amount of incisal exposure during the resting position as well as during the smiling phase. The study included 235 participants, comprising of 112 (47.7%) males

and 123 (52.3%) females, with a mean age of 32.4 $\pm$ SD years and an age range of 20-45 years. Normal lip length participants had the largest exposure with a mean of 8.19 mm $\pm$ 1.87 SD (p value <0.001) as shown by the outcome whereby different lip length groups presented significant differences in incisal exposures. The angular depth of the incisal edges was less exposed than that analyzed by the observers with increased or decreased labial lip lengths.

Conclusion: These findings underline the importance of adopting the parameter of upper lip length in some dental cosmetic procedures and suggest that individualized therapeutic protocols have the potential to enhance the patients aesthetic outcomes. Therefore, the present research provides valuable information concerning lip morphology and its relation to dental appearance and can function as foundation of further investigations and practical experiences in the field of aesthetic dentistry.

Keywords: Maxillary Anterior Teeth, Incisal Exposure, Upper Lip Length, Dental Aesthetics.

UG-PP-53-Correlation of Assertiveness with Academic Performance Of Undergraduate Students Of Public Nursing Colleges Peshawar Kpk

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Background & Objectives: Assertiveness is the students' ability to speak honestly, freely, and clearly about their needs, interests, and opinions on issues that affect them, including defending their rights without compromising the rights of others. Assertiveness is crucial for

nurses to preserve the rights of themselves and the patients to whom they provide care. Assertiveness also affects the students' performance at clinical and academic horizontally. Therefore it is very important that assertiveness levels and its correlation with academic performance should be investigated. The aim/objective of the study is to assess the level of assertiveness among nursing students and its correlation with academic performance
Methods: A correlation study design was used which was an effective design for finding the correlation between variables. The study was conducted on undergraduate nursing students of the 3rd and 4th years at public nursing colleges of Peshawar under Provisional Health Service Academy (PHSA). The sample size was 240, and the sample was taken through a multi-stage sampling technique. The study approval was obtained from the Board of Advanced Study and Research (BOASAR) of the Sarhad University.

Results: The result showed that the majority of the students 78% (n=187), were with high level of assertiveness, and 22% (n = 53), of the students were with a low level of assertiveness. Moreover, there was a significant Positive moderate correlation ($r=0.594$) between assertiveness and academic performance of nursing students, with a p-value < 0.005 (p < 0.001)
Conclusion: The study concluded that majority of the nursing students in Public Nursing Colleges were with high level of assertiveness. The academic performance of the student was positively correlated with level of assertiveness. Workshops and seminars should be arranged in the future, and interventional studies should be conducted using assertiveness training interventions in order to improve students' assertiveness and academic performance.

Keywords: Assertiveness, Academic

Performance, Undergraduate Nursing students, Public nursing colleges, Correlation

UG-PP-54 — Courtesy Stigma Towards Psychiatrists Among Undergraduate Medical Students And House Officers: Implications For Career Choice

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Background & Objectives: Mental health disorders are common worldwide, yet stigma remains a major barrier to care. While stigma towards mentally ill individuals is well-explored, psychiatrists may also experience courtesy stigma due to their association with psychiatric patients, which can discourage medical students from pursuing psychiatry as a career. To investigate the phenomenon of courtesy stigma towards psychiatrists among undergraduate medical students and house officers in Peshawar, Pakistan, and its impact on career choices. To investigate the phenomenon of courtesy stigma towards psychiatrists among undergraduate medical students and house officers in Peshawar, Pakistan, and its impact on career choices.

Methods: This cross-sectional study including 254 participants, undergraduate medical students and house officers from various public and private institutions in Peshawar was conducted in March 2025. A demographic questionnaire and the ATP-30 scale, along with two customized questions, were used to assess courtesy stigma towards psychiatrists and

career interest in psychiatry. Data was analyzed using SPSS version 22.

Results: Of all 254 participants recruited 133 were females and 121 males with a mean age of 22.20 ± 2.17 years (range: 18–27 years). The mean ATP-30 score was 98.55 ± 10.23 , indicating neutral to slightly positive attitudes. House officers scored significantly higher overall ATP scores than other categories ($p < 0.01$). Seminar attendances and psychiatry rotations were significantly associated with improved attitudes ($p < 0.05$). In contrast only 10% of participants expressed interest in psychiatry as a career. Paradoxically, house officers, despite higher ATP scores, more frequently endorsed negative stereotypes towards psychiatrists. One-third anticipated discouragement from family or friends, and 10.2% were hesitant being identified as psychiatrist in social settings.

Conclusion: Despite slightly positive attitudes toward psychiatry as a field, courtesy stigma toward psychiatrists persists, especially among house officers and male participants. Targeted interventions like seminars and awareness campaigns are needed to reduce stigma and encourage recruitment into this vital specialty.

Keywords: Courtesy stigma, psychiatrists, medical students, Interns, Peshawar, ATP-30 Scale

UG-PP-55 — Daily Screen Time and Sleep Quality Among Generation Z Students of Azra Naheed Medical College: A Device-Logged, Cross-Sectional Study

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Background & Objectives: Generation Z high reported increased screen time through self-reported data with potential bias. This study determined device logged screen time and sleep quality

Methods: This cross-sectional study was conducted among 222 Gen Z medical college students who provided 30 consecutive days of smartphone-logged screen time. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI), with scores >5 indicating poor sleep. Data were analyzed using SPSS

Results: Analysis of digital logs indicated an approximate average daily screen time of 8 hours and 44 seconds, with significant daily fluctuations ranging from 7 to 9 hours. Subjective reports showed substantial proportion of respondents indicating usage exceeding 7 hours daily. Sleep quality was markedly poor; analysis of the PSQI components demonstrated that 71.1% of the student population suffers from sleep impairment (Global PSQI > 5), characterized by prolonged sleep latency (>30 minutes) and fragmented sleep duration (<6 hours). A strong positive correlation was observed between screen time and Global PSQI scores ($r=0.75$, $p<0.01$), indicating that higher screen engagement is predictive of poorer sleep quality. Demographic variables significantly modulated these outcomes: female students exhibited higher PSQI scores compared to

males despite similar screen times, and a "U-shaped" vulnerability curve was observed across academic years with First and Final Year students showing the highest rates of sleep disturbance. Hostel residents also reported significantly worse sleep hygiene compared to day scholars.

Conclusions: Among Generation Z medical students, objectively logged daily screen time was associated with poor sleep quality, despite widespread poor sleep.

Keywords: Generation Z; screen time; sleep quality; PSQI; smartphone use

UG-PP-56 — Dental Myths And Misconceptions Among Dental And Non Dental Students

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Background and Objectives: Dental myths persist globally, influencing oral-health behaviors and treatment-seeking patterns. While health-science students are expected to possess evidence-based knowledge, limited research examines misconceptions among Pakistani undergraduates across different disciplines. Understanding myth prevalence among future healthcare providers is crucial for curriculum development and public-health initiatives. This research will estimate and analyze the prevalence of common dental myths among dental (BDS) and non-dental students, and their correlation with demographic variables and the resilience of

these myths despite previous professional education.

Methods: A cross-sectional survey was conducted among 278 undergraduate students (BDS, MBBS, Pharm-D, DPT) aged 18–30 years during April–May 2025. A validated 15-item questionnaire assessed five myth categories using five-point Likert scales. Data were analyzed using SPSS v26, employing descriptive statistics, t-tests, ANOVA, and correlation analysis. Cronbach's alpha confirmed internal consistency. Statistical significance was set at $p < 0.05$.

Results: Response rate was 93.8%. Major myths included extraction-induced blindness (61%), hard-bristled brushing for whitening (59%), and smokeless tobacco safety (54%). BDS students demonstrated significantly lower myth endorsement (mean score 45.2 ± 6.4) than non-dental students (39.8 ± 7.6 , $p < 0.001$). Strong positive correlations existed between myth categories ($r = 0.26$ – 0.46 , $p < 0.001$). Age correlated negatively with myth acceptance ($r = -0.18$, $p = 0.004$).

Conclusion:

Substantial dental misconceptions persist among health-science undergraduates, with non-dental students showing greater susceptibility. Integrated myth-busting curricula and targeted educational interventions are essential for all health programs to improve future healthcare providers' knowledge

Keywords: dental myths, health science students, oral health misconceptions, undergraduate education.

UG-PP-57 — Dental Quackery as a Public Health Concern: A Cross-Sectional Study of Student and House Officer Perspectives in Peshawar

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Background and Objectives: Dental quackery is critical oral health concern in many regions of Pakistan including Peshawar, where unqualified individuals continue to practice dental services without formal education. It leads to serious health complications like dry sockets, infection spread, jaw fracture, nerve injury etc. The aim of this study was to assess awareness level of future dental health professionals regarding this issue and to address the gap between public education and quality dental care delivery in Peshawar.

Methods: A cross-sectional study was conducted among undergraduate students and house officers of the four dental colleges in Peshawar using stratified convenience sampling method ($n = 400$; 100 per college, 20 per academic year and house officer batch). Efforts were made to maintain equal distribution of gender where it was applicable; one college comprised only female participants. Questionnaires were distributed to collect data. SPSS version 31.00 was used to analyse the data.

Results: SPSS-based analysis showed no significant difference in concern level towards dental quackery among different academic years (ANOVA, $p < 0.05$). On descriptive analysis, 81.9% participants agreed that quackery is common in Peshawar, unethical and cause infection spread. Mean attitude score was 4.1 ± 0.8 , showing significant negative perspective towards dental quackery.

Conclusion: All participants demonstrated strong negative attitude and high awareness towards dental quackery. Concerns are constant across academic years and majority of the respondents agreed that it is dental quackery in Peshawar is unethical, common and harmful to patients. These findings highlight need of stricter measures to prevent dental quackery.

Key words: dental quackery, public health, malpractice, frauds.

UG-PP-58 — Dentists' Perceptions And Participation In Industry-Sponsored Versus Investigator-Initiated Clinical Trials: A Cross-Sectional Survey

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Background & Objectives: Clinical trials are essential for advancing evidence-based dental practice; however, participation of dentists in clinical research remains limited, particularly among early-career practitioners. Industry-sponsored trials (ISTs) and investigator-initiated trials (IITs) differ in funding structure, administrative workload, and available resources, which may influence clinicians' perceptions and willingness to participate. This study aimed to compare dentists' perceptions, barriers, facilitators, and willingness to participate in ISTs versus IITs.

Methods: A cross-sectional questionnaire-based survey was conducted among recently graduated dentists at a dental institution.

Results: Data were collected using a structured self-administered questionnaire distributed through an online platform. Descriptive statistics were used to summarize demographic characteristics and perception scores, while paired comparisons were conducted to assess differences between IST and IIT perceptions. A total of 29 dentists participated in the study. The mean perception score for ISTs was slightly higher (3.42 ± 0.84) compared to IITs (3.36 ± 0.78), although the difference was not statistically significant. Participants reported that ISTs provided better financial support and infrastructure, whereas IITs were perceived to offer similar professional development opportunities. The most commonly reported barriers to participation in clinical trials were lack of research training (mean = 3.90) and lack of time (mean = 3.76). Key facilitators identified by respondents included training workshops, mentorship opportunities, and financial incentives. Despite these challenges, most participants expressed willingness to participate in future clinical trials and showed interest in leading research projects.

Conclusion: These findings highlight the need for improved research training, mentorship programs, and institutional support to enhance dentist participation in clinical research. Strengthening these factors may help bridge the gap between clinical practice and research involvement among early-career dentists.

Keywords: clinical trials, dentist perception, industry-sponsored trials, investigator-initiated trials, research participation, dental research

UG-PP-59 — Determinants Of Surgical Site Infections In Emergency Versus Elective Surgeries In Peshawar

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Background & Objectives: Surgical site infections (SSIs) are infections that appear at or near a surgical incision 30 days after the procedure (90 days if implants are used) (1). SSIs account for over one-fifth of all hospital-acquired infections, ranking among the most common healthcare-associated diseases (1). The global incidence of SSI varies substantially (between 1-30% depending on location and procedure) (1). For example, the World Health Organization estimates 1.2-23.6 SSIs per 100 surgical procedures worldwide (2). A recent meta-analysis discovered a pooled global SSI incidence of approximately 2.5% (3), with rates substantially higher in low- and middle-income countries (LMICs) due to resource and infection-control restrictions (4). To identify the causes of surgical site infections in emergency versus elective surgeries in Peshawar

Methods: This will be a hospital-based analytical cross-sectional study to determine the causes of surgical site infections in patients undergoing emergency and elective surgeries at Peshawar's tertiary care facilities. The study included adult patients (above 18) and those who were undergoing emergency or major surgeries. Data was not collected from those who were not willing to participate.

Results: The study comprised 384 patients undergoing surgical procedures. Of these, 172 (44.8%) received elective procedures, while 212 (55.2%) required emergency surgery. The individuals' average age was 41.6 ± 14.2 years. Overall, 72 patients (18.8%) contracted surgery site infections.

Conclusion: These findings, which are among the first of their kind for local data, offer meaningful recommendations. We encourage thorough adherence to prophylactic antimicrobial regimens and perioperative optimization (particularly glycemic management and smoking cessation). Surgeons and hospitals should also establish routine SSI surveillance and feedback procedures.

Keywords: Surgical Site Infections (SSIs), Emergency Surgery, Elective Surgery, Risk Factors

UG-PP-60 — Diagnostic And Prognostic Value Of Degree Of Slr In The Treatment Of Monoradicular Siactica

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Background & Objectives: Sciatica caused by lumbar disc herniation is a common cause of lower back and radicular leg pain. The Straight Leg Raise (SLR) test is widely used as a clinical tool for diagnosing lumbosacral radiculopathy, but its diagnostic accuracy remains debated compared with magnetic resonance imaging (MRI). The objective of our study is to determine the diagnostic accuracy of the traditional Straight Leg Raise (SLR) test for monoradicular sciatica using MRI as the reference standard.

Methods: A total of 100 patients presenting with lower back pain and

radicular symptoms were enrolled. The SLR test was performed with the patient in the supine position and considered positive if it reproduced characteristic radicular pain at $\leq 80^\circ$ of hip flexion. Pain intensity was quantified using a Visual Analogue Scale (VAS). All participants underwent lumbosacral MRI for confirmation of nerve root compression. Diagnostic parameters, including sensitivity, specificity, and overall accuracy, were calculated using a 2×2 contingency table with MRI findings as the gold standard.

Results: The mean age of participants was 44.76 years, with a female predominance (54%). The S1 nerve root was the most frequently affected (36%). The SLR test demonstrated a sensitivity of 79.31%, specificity of 69.23%, and an overall diagnostic accuracy of 78.0%.

Conclusion: The traditional Straight Leg Raise test remains a practical, simple, and reliable clinical tool for the diagnosis of monoradicular sciatica, demonstrating moderate sensitivity and specificity when compared with MRI.

Keywords: Straight Leg Raise Test, Diagnostic Accuracy, Sciatica, Lumbar Disc Herniation, Magnetic Resonance Imaging, Sensitivity, Specificity

UG-PP-61 — Digital Literacy and Academic Performance among Undergraduate Nursing Students at Sarhad University of Science and Information Technology, Peshawar: A Correlational Study

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Background & Objectives: Digital literacy has become a crucial competency for nursing students, influencing not only their learning outcomes but also their preparedness for professional practice in a progressively digital healthcare environment. The study aimed to assess the level of digital literacy among undergraduate nursing students at the Institute of Nursing Sciences, Sarhad University, Peshawar, and to measure its correlation with Academic Performance.

Methods: A correlational study design was used to determine the correlation between digital literacy and academic performance. A total of 207 participants were included in the study from the Institute of Nursing Sciences, Sarhad University, Peshawar. The study was approved by the ethical research committee of the university, and consents were granted from all participants. The Digital Literacy Scale was used to collect the data from the participants.

Results: The results revealed that among 207 students, 87.9% of the participants were male, while 12.1% were female. The mean age of the participants was 21.9 years. The majority (54%) of the participants have moderate digital literacy, followed by high digital literacy (52%) and low digital literacy (4%). No association was found between socio-demographic factors and digital literacy, while an association was found between digital literacy and prior training in digital skills ($P=0.015$). Moreover, a weak positive correlation was found between digital literacy and Academic Performance.

Conclusion: The study concludes that a moderate level of digital literacy was found with a weak positive correlation with academic performance. The study recommends integrating digital literacy training into nursing curricula, supported by workshops and faculty development programs to strengthen digital learning practices.

Keywords: Digital Literacy, Academic Performance, Digital Skills,

UG-PP-62 — Disturbances In Embodiment In Schizotypy Spectrum Disorders: A Narrative Review

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Background & Objectives: Schizotypy spectrum disorders include a range of personality traits, such as unusual perceptual experiences, eccentric behavior, and social and emotional difficulties that are present along a continuum of schizophrenia-related features. Embodiment demonstrates experience and awareness of one's own body as the focal point of self-perception. Individuals with schizophrenia spectrum disorders exhibit disembodiment and unusual bodily sensations. However, the relation between disembodiment and schizophrenia spectrum disorders is not well understood. This narrative review aimed to summarize the existing data on embodiment-related changes in people with high schizotypal traits.

Methods: The PubMed database was searched for ten relevant pieces of research published

within the last ten years. The studies were chosen based on population, study design, and recency. Healthy individuals with high or low schizotypal traits were included, and clinical schizophrenia patients were excluded. The research design consisted of empirical, peer-reviewed studies, including both behavioral experiences and phenomenological studies on bodily experiences.

Results: The selected papers were examined qualitatively to find patterns and trends in embodiment associated with schizotypy. Qualitative analysis of findings indicated that people with higher schizotypal traits have unusual bodily sensations, blurred self-boundaries, impaired audiovisual integration, tactile touch, proprioceptive signals, and body space integration. Schizotypy scores were high in those who struggle to understand exteroception. Within the schizophrenia spectrum, an early marker of self-disorder was disturbances in bodily representation and bodily perception.

Conclusion: The overall findings highlight early alterations in bodily self experience within the schizophrenia spectrum disorders in relation to schizotypy. The neurological and behavioral processes of altered embodiment in individuals with schizotypy require further investigation.

Keywords: Embodiment, schizotypal personality disorder, schizotypy spectrum, psychosomatic, schizophrenia.

UG-PP-63 — Does Self-Reported Physical Activity Influences Glycemic Control and Diabetes Related Complications

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Background: Physical inactivity is a major contributor to poor metabolic control and increased diabetes complications. Understanding the effects of self-reported physical activity on glycemic and vascular outcomes among people with T2DM would be important for the purpose of preventive management. It was, therefore, necessary to find out whether self-reported physical activity influences glycemic control and diabetes-related micro-vascular and macro-vascular complications in adults with T2DM.

Methods: This is a cross-sectional study conducted at Northwest General Hospital and Research Centre, Peshawar, from January to June 2024, enrolling 1,255 adults aged ≥ 24 years with established T2DM. Participants with ≥ 150 minutes of moderate-intensity activity per week were considered physically active,

while the others were classified as inactive. Socio-demographic, clinical, and biochemical data were collected. For statistical analysis, SPSS version 26.0 was used, and t-test, chi-square test, and binary logistic regression were applied, while $p < 0.05$ was considered significant.

Results: Physically active participants exhibited significantly lower mean total cholesterol (176.27 ± 41.21 mg/dL) and triglyceride levels (208.74 ± 117.80 mg/dL) compared to inactive individuals (191.85 ± 51.45 mg/dL and 249.32 ± 148.60 mg/dL, respectively; $p < 0.05$). Nephropathy (12.6% vs 22.0%, $p < 0.001$) and dyslipidemia (32.8% vs 40.2%, $p = 0.022$) were less prevalent among walkers. Logistic regression identified **duration of diabetes** (OR = 1.144, $p = 0.027$) and **systolic blood pressure** (OR = 1.040, $p = 0.005$) as independent predictors of micro-vascular complications, while **male gender** (OR = 3.448, $p = 0.012$) predicted macro-vascular outcomes. No significant association was found between self-reported walking and HbA1c levels ($p > 0.05$).

Conclusion: Regular walking improves lipid profile and reduces nephropathy and dyslipidemia among individuals with T2DM, supporting physical activity as an effective, low-cost strategy for mitigating vascular risk.

Keywords: Type 2 Diabetes Mellitus, Physical Activity, Glycemic Control, Lipid Profile, Micro-vascular Complications, Macro-vascular Complications

UG-PP-64 —Driving OA Patients from Impairment to Independence: Comparative Efficacy of MET vs. Static Stretching on Functional Outcomes-A Single-Blind Randomized Controlled Trial

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Background and Objectives: Knee osteoarthritis (KOA) affects approximately 606.9 million people worldwide, with a reported prevalence of 28% in rural and 25% in urban populations in Pakistan. Although international guidelines recommend non-pharmacological interventions as first-line management, limited comparative evidence exists regarding manual therapy techniques in Pakistan. This study aimed to compare the effects of Muscle Energy Technique (MET) and static stretching of the gastrocnemius on pain, disability, and quality of life in patients with Grade 2 KOA, including residual effects.

Methods: A single-blind randomized controlled trial was conducted at Dr. Ziauddin Hospital, Karachi. A total of 120 patients aged 40–69 years with Grade 2 KOA were randomly allocated into two groups (n=60 each) using sealed envelope randomization. Group A received post-isometric relaxation (MET), while Group B received static stretching. Both groups underwent 12 treatment sessions over four weeks, followed by residual assessment. Outcomes were measured using the Visual Analogue Scale (VAS) and the Knee Injury and Osteoarthritis Outcome Score (KOOS) at baseline, post-intervention, and follow-up. Data were analyzed using paired and independent t-tests.

Results: Significant within-group improvements were observed in both groups ($p < 0.001$). However, MET demonstrated superior outcomes with larger effect sizes for pain ($d = 1.72$), activities of daily living

($d = 2.08$), and quality of life ($d = 2.07$). At follow-up, MET showed more sustained benefits. Additionally, 93.3% of participants in the MET group achieved the minimal clinically important difference (MCID), compared to 43.3% in the stretching group.

Conclusion: MET provides greater and more durable improvements in pain, function, and quality of life in Grade 2 KOA patients. These findings support its use as a preferred manual therapy approach in Pakistani physiotherapy practice.

Keywords: Knee Osteoarthritis, Muscle Energy Technique, Pain, Disability, Quality of Life, Physiotherapy.

UG-PP-65 — Drug Use Severity And Psychological Distress As Predictors Of Intentional Burn Injuries: Evidence From A Tertiary Hospital Cohort In Peshawar, Pakistan

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Background and objective: The contribution of substance abuse to intentional burn injuries and associated psychological distress in South Asia remains critically understudied, limiting effective prevention strategies. This study compared drug use severity and depressive symptoms between intentional and unintentional burn patients and evaluated their associations with burn intentionality.

Methods: We conducted a six-month prospective, cross-sectional study at two tertiary burn centers in Peshawar, Pakistan, enrolling 150 adult burn patients (≥ 18 years). Substance use severity and depression were assessed using DAST-10 and PHQ-9. Burn intentionality was determined via patient report, clinician assessment, and adjudication within 48–72 hours. Statistical analyses included non-parametric tests, chi-square, and correlations.

Results: Intentional burns accounted for 12.7% ($n=19$) of cases and were associated with significantly higher drug use severity (DAST-10: $U=773.0$, $p<0.001$) and depressive symptoms (PHQ-9: $U=8.0$, $p<0.001$) than unintentional burns (87.3%, $n=131$). Substances including cannabis, benzodiazepines, opioids, and methamphetamines were disproportionately represented. Drug use severity correlated positively with depression ($\rho=0.270$, $p=0.001$). Flame burns predominated in intentional cases, with clinician suspicion showing high specificity (88.5%) and moderate sensitivity (73.7%). Logistic regression indicated higher depressive symptoms significantly predicted intentional burns (OR = 2.54, 95% CI: 1.18–5.49, $p = 0.017$), while drug use severity showed a positive but non-significant association.

Conclusion: Drug use severity is a strong predictor of intentional burn injuries and associated psychological distress. These findings highlight the urgent need for integrated substance abuse and mental health screening protocols in burn units to enable timely interventions, improve patient outcomes, and reduce morbidity, particularly in resource-limited settings.

Keywords: Burn injuries, intentional burns, drug abuse severity, DAST-10, PHQ-9, psychological distress

UG-PP-66 — Early Susceptibility Testing Of Meropenem, Cotrimoxazole And Amikacin Against Clinical Isolates Of Gram-Negative Organisms From Critically Ill Patients Of Tertiary Care Hospital

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Background & Objectives: Rapid antibiotic susceptibility testing is essential for managing Gram-negative sepsis to optimize intensive care outcomes. Reducing turnaround time is crucial for prompt initiation of appropriate antibiotics, potentially decreasing mortality rates, shortening hospital stays, and mitigating the development of antimicrobial resistance. This study evaluates the early susceptibility of meropenem, septran, and amikacin against clinical Gram-negative isolates to expedite targeted therapy and minimize hospital stays.

Methods: This study is a cross-sectional comparative study. It included all blood cultures from medical and surgical ICUs, NICU, and ALTU that tested positive for gram-negative organisms over a six-month period from January to June 2025 at the

Military Hospital, Rawalpindi. Only positive samples were included, with duplicate specimens from the same patients were excluded. Blood cultures were evaluated using Bactec and Brain Heart Infusion (BHI) broth, with positive growth identified by an automated system. Subculturing and drug susceptibility testing was done following CLSI guidelines. Zone sizes at 10 and 24 hours (standard) were measured for early susceptibility assessment. Data was analyzed with SPSS version 27, including descriptive analysis and the kappa test for concordance between the two reading intervals.

Results: Of 85 non-lactose fermenting isolates recovered, Enterobacteriaceae predominated (74.1%), primarily *Escherichia coli* (30.58%). Comparison between 10-hour early susceptibility assessments and 24-hour standard tests (n=204) demonstrated 82.8% categorical agreement. No Very Major Errors were observed, while Major and Minor errors occurred in 2.9% and 14.2% of cases, respectively. Significant statistical correlation was noted for Meropenem, Trimethoprim-sulfamethoxazole, and Amikacin, with kappa scores (0.643–0.715, $P < 0.001$) indicating substantial agreement and supporting the reliability of accelerated diagnostic reporting.

Conclusion: Early disc diffusion testing provides a reliable, stratified protocol for rapid antimicrobial selection in critical care. While effective for most isolates, selective application is advised due to organism-specific errors.

Keywords: Antimicrobial susceptibility, gram negative organisms, Antibiotic therapy

UG-PP-67 — Early vs. Late initiation of long acting basal insulin during IV insulin in pediatric diabetic ketoacidosis

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Background & Objectives: The effectiveness of starting long-acting basal insulin during the IV phase of pediatric diabetic ketoacidosis (DKA) remains debated. We evaluated whether it improves outcomes without harm.

Methods: We conducted a PRISMA-guided systematic review and random-effects meta-analysis of studies including DKA patients <18 years. “Early basal” was defined as starting subcutaneous glargine or detemir during IV insulin with ≥ 4 h planned overlap. Comparators started basal insulin at or after stopping IV insulin or with <4 h overlap. The primary outcome was time to DKA/acidosis resolution; secondary outcomes were IV insulin duration, hospital length of stay (LOS), hypoglycemia, and hypokalemia.

Results: Risk of bias was assessed using RoB-2 and NOS, and evidence certainty with GRADE. Eight studies (3 RCTs, 5 cohorts; n = 1325) met criteria (695 early-basal, 630 comparator). Early basal reduced time to DKA/acidosis resolution (4 studies; n = 445) with a mean difference (MD) of -3.58 h (95% CI -6.13 to -1.03 ; $p = 0.006$; $I^2 = 76\%$). Sensitivity analysis excluding one heterogeneous study showed MD -4.78 h (95% CI -6.53 to -3.03 ; $I^2 = 31\%$). IV insulin duration showed no significant difference (5 studies; n = 1009), MD -2.63 h (95% CI -7.96 to 2.70 ; $p = 0.33$; $I^2 = 92\%$), though one RCT reported benefit (MD -12.0 h). Hospital LOS

was similar (3 studies; $n = 363$), MD -0.17 days (95% CI -0.53 to 0.19 ; $p = 0.35$; $I^2 = 0\%$). Safety outcomes were neutral: hypoglycemia (7 studies; $n = 1277$) OR 0.95 (95% CI $0.58-1.56$; $p = 0.84$; $I^2 = 54\%$); hypokalemia (6 studies; $n = 731$) OR 1.19 (95% CI $0.67-2.11$; $p = 0.55$; $I^2 = 67\%$). GRADE rated certainty high for time-to-resolution in RCTs, moderate for hypoglycemia, and low to very low for some observational outcomes due to heterogeneity and imprecision.

Conclusions: In pediatric DKA, starting long-acting basal insulin during IV insulin (≥ 4 -hour overlap) speeds metabolic recovery by $\sim 3-5$ hours without increasing hypoglycemia or hypokalemia. Effects on IV insulin duration and length of stay are inconsistent. Early basal insulin appears safe for transition, but multicenter RCTs with standardized overlap definitions are needed.

Keywords: Early basal overlap; Insulin detemir; Insulin glargine; Meta-analysis; Pediatric diabetic ketoacidosis; Systematic review.

UG-PP-68 — Effect Of Influenza Vaccination On Major Cardiovascular Events And Mortality: A Systematic Review And Meta-Analysis Of Randomized Controlled Trials

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Background & Objectives: Cardiovascular disease remains the leading global cause of mortality despite advances in preventive therapies. Influenza infection is increasingly recognized as a trigger for acute cardiovascular events, prompting interest in influenza vaccination as a potential cardioprotective intervention in high-risk patients. We aimed to conduct a systematic review and meta-analysis to evaluate the effect of influenza vaccination on cardiovascular outcomes in adults with established cardiovascular disease.

Methods: PubMed, Embase, and Cochrane databases were systematically searched using relevant keywords from inception until October 2025. Seven studies were included

after the final screening. Outcomes were reported as all-cause mortality, myocardial infarction, major adverse cardiovascular events and heart failure related hospitalization.

Results: Interstudy heterogeneity was assessed using I^2 and X^2 statistics. Statistical calculations were performed using Review Manager 5.4.1, with a p-value of < 0.05 indicating statistical significance. Seven randomized controlled trials including 12,224 participants were analyzed. Influenza vaccination significantly reduced major adverse cardiovascular events and cardiovascular mortality. A borderline reduction was observed for myocardial infarction and all-cause mortality. No significant differences were found for stroke, coronary revascularization, or heart failure-related hospitalization. Heterogeneity was low for most primary outcomes.

Conclusion: The routine use of influenza vaccination as an effective adjunctive strategy in secondary cardiovascular prevention is supported by the fact that it significantly lowers cardiovascular mortality and major cardiovascular events in patients with established heart disease.

Keywords

Influenza vaccination, Cardiovascular disease, Major adverse cardiovascular events, Cardiovascular mortality, Secondary Prevention, Meta-Analysis.

UG-PP-69 — Effect Of Water Intake, Dietary Habits And Genetics On Gingival Color And Dental Caries

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Background & Objective: Oral health is often taken for granted until problems arise but it is profoundly shaped by what we eat and drink every single day. Water is essential component of life and one of the important factors that influence oral health. . Genetic variations and dietary habits can also affect an individual's susceptibility to dental caries and can influence gingival color. Objective of current research was to increase awareness about the importance of water intake and healthy eating for maintaining healthy teeth and gingival aesthetics . The aim was to investigate the impact of genetics on gingival color and dental caries.

methods :A descriptive cross sectional study was carried out on a general population . A convenience sample strategy was employed in conjugation with a questionnaire to acquire the data .

Results :Participants who consumed an adequate amount of water had a lower DMFT score (7.5%) and exhibited coral pink gingiva (5.0%). Out of the 58 participants who reported a family history of light gingiva, 54 presented with coral pink (light) gingiva. 54 participants with a family history of frequent dental caries showed a higher mean caries experience (2.54). Participants who consumed higher amounts of carbohydrates exhibited coral pink gingiva (50.0%)

∴ Adequate water intake was associated with lower DMFT scores and healthier gingiva. Family history showed a strong relationship with gingival color and caries experience. Overall, both dietary habits and genetics appear to influence oral health status.

Key words :DMFT score, carbohydrates, genetics

UG-PP-70— Effectiveness Of Core Stability Exercises On Energy Expenditure During Gait In Stroke Patients; A Randomized Controlled Trial

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Background & Objectives: Stroke is the second leading cause of disability worldwide. Energy expenditure during gait in stroke patients is greater than normal people. There is limited evidence on the effects of core stability exercises on energy expenditure during gait. The objective of this study to see the effectiveness of core stability exercises on energy expenditure during gait in stroke patients.

Methods: A RCT was conducted in the physical therapy department of RMI Peshawar. Data was collected from stroke patients having age between 30 to 55 years. 47 patients completed this study, 23 in the experimental group and 24 in the control group. Experimental group received core stability exercises along with conventional physical therapy and the control received only conventional physical therapy. It was a 6 week treatment regimen, 5 days a week, 20 minutes per session. 10MWT is used to determine speed, and Physiologic cost index formula to determine energy expenditure during gait.

Results: Among 47 participants, 28(59.6%) were females while 19(40.4%) were males, 36(76.6%) were left side affected and

11(23.4%) have right side affected, 6(12.8%) of the population were presented with hemorrhagic stroke while 41(87.2%) were presented with ischemic stroke. Shapiro Wilk Test shows that the data is not normally distributed. So, Mann Whitney U test and Wilcoxon test is used, which shows no significant difference between and within groups ($p>0.05$).

Conclusion: Core stability exercises along with conventional physical therapy are not effective in improving energy expenditure and gait speed

Keywords: Stroke, core stability exercises, Gait.

UG-PP-71 — Effectiveness Of Misoprostol Combined With Foley Catheter During The Second Trimester For Termination Of Pregnancy

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Background & Objective: To determine the effectiveness of misoprostol combined with Foley catheter for second-trimester termination of pregnancy.

Methods: This descriptive study was conducted at the Department of Obstetrics and Gynaecology, Lady Reading Hospital, Peshawar, over six months. A total of 139 women aged 15–45 years with 13–24 weeks of gestation were enrolled consecutively, excluding those with trauma, bleeding disorders, or prostaglandin hypersensitivity. After informed consent, all participants received a Foley catheter (balloon inflated to 30 mL) and 200 µg of misoprostol in the posterior fornix, repeated every six hours. Effectiveness was defined as complete expulsion of products

of conception with no residual on ultrasonography within 20 hours

Results: The mean age of participants was 29.47 ± 4.62 years, with a mean BMI of 26.69 ± 3.26 kg/m². Most women were aged 18–30 years (53.2%) and multigravida (77.7%). Overall, the combined regimen was effective in 126 women (90.6%), with 13 cases (9.4%) showing treatment failure. Effectiveness was consistent across age, BMI, residence, parity, and gestational age groups, with no statistically significant associations (all $p > 0.05$).

Conclusion: Misoprostol combined with Foley catheter is a highly effective method for second-trimester termination of pregnancy, demonstrating consistent success across diverse demographic and obstetric subgroups.

Keywords: misoprostol, foley catheter, induction, second trimester.

UG-PP-72 — Self-Medication And Health Literacy; Examining Knowledge, Attitudes And Practices Among Medical Students At Azra Naheed Medical College,Lahore

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Background & Objectives: Self-medication, defined as the use of medicines without professional consultation, is increasingly prevalent among university students due to easy access to over-the-counter medications.

This behavior raises significant concerns due to the potential risks associated with misdiagnosis, drug interactions, and antibiotic resistance. Among medical students, partial pharmacological knowledge and increased confidence in self-treatment may further encourage this practice. This study aimed to assess the association between health literacy and self-medication practices among medical students

Methods: A cross-sectional study was conducted at Azra Naheed Medical College, Lahore. A total of 344 medical students were recruited using convenience sampling. Data were collected using a structured Self-Medication Scale and the Health Literacy Instrument for Adults (HELIA). Sample size was calculated using Cochran's formula with a 95% confidence level and 5% margin of error. Data were analyzed using SPSS version 26. Independent samples t-test, one-way ANOVA, and Pearson correlation were applied. Ethical approval was obtained prior to data collection.

Results: Among the participants, 66% were female and 65.4% belonged to nuclear families. No statistically significant differences in health literacy scores were observed by gender ($p = 0.440$), family system ($p = 0.083$), or residence status ($p = 0.864$). One-way ANOVA showed no significant variation in self-medication practices across academic years ($F(4,339) = 0.982$, $p = 0.417$). Pearson correlation analysis demonstrated a weak, non-significant negative association between health literacy and self-medication practices ($r = -0.050$, $p = 0.355$).

Conclusion: Health literacy was not significantly associated with self-medication practices among medical students. These findings suggest that factors beyond general health literacy, such as behavioral norms, perceived competence, and access to

medications, may play a greater role. Further multi-center and qualitative studies are recommended to explore these determinants.

Keywords: Self-medication; Health literacy; Medical students; Over-the-counter medicines

UG-PP-73 — Effects of Sensor-Assisted Neuromuscular Exercises Compared to Electrical Stimulation on Biomechanical and Functional Parameters in Patients with Grade II–III Knee Osteoarthritis: A Systematic Review and Meta-Analysis

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Background & Objectives: Knee osteoarthritis (KOA) remains one of the leading causes of musculoskeletal disability globally, with Grade II and Grade III classifications representing clinically significant stages characterized by progressive cartilage degradation, impaired proprioception, quadriceps inhibition, and measurable functional decline. This systematic review and meta-analysis aimed to evaluate the comparative effectiveness of sensor-assisted neuromuscular exercises versus electrical stimulation on biomechanical parameters (knee joint kinematics, proprioceptive acuity, muscle activation, and ground reaction forces) and functional outcomes (pain, physical function, range of motion, and quality of life) in patients diagnosed with Grade II–III KOA.

METHOD: This review was conducted and reported in strict accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines.

Two independent reviewers performed title/abstract screening, full-text eligibility assessment, and data extraction using a pre-piloted standardized form. Eligibility criteria followed the PICO framework: Population — adults (≥ 40 years) with radiographically or clinically confirmed Grade II–III KOA (Kellgren–Lawrence scale); Intervention — SA-NME using sensor-based or biofeedback-guided protocols; Comparison — electrical stimulation (NMES, TENS, or interferential current); Outcomes — biomechanical parameters (joint angles) and functional parameters (KOOS, VAS/NRS pain scores and 6-Minute Walk Test [6MWT]). Only randomized controlled trials (RCTs) were included. Methodological quality of each included study was independently appraised using the Cochrane Risk of Bias 2 (RoB 2) tool across five domains: randomization process, deviations from intended interventions, missing outcome data, measurement of outcomes, and selection of reported results, with overall judgments categorized as low risk, some concerns, or high risk.

RESULTS: The systematic search yielded 1132 records after duplicate removal, of which 214 full-texts were assessed for eligibility. A total of 10 RCTs ($n = 1,946$ participants; mean age 58.3 ± 7.4 years; 61.2% female) met the inclusion criteria and were included in the meta-analysis. Follow-up durations ranged from 4 to 24 weeks. RoB 2 appraisal classified 11 studies (39.3%) as low risk, 13 (46.4%) as presenting some concerns primarily in the blinding of participants and outcome assessors and 4 (14.3%) as high risk, predominantly due to incomplete outcome reporting and attrition bias. Biomechanical Outcomes: SA-NME demonstrated significantly superior improvements over electrical stimulation in proprioceptive joint position sense error (SMD

= -0.74; 95% CI: -1.02 to -0.46; $I^2 = 38\%$; $p < 0.001$), and knee flexion-extension kinematics during gait (SMD = 0.61; 95% CI: 0.33 to 0.89; $I^2 = 51\%$; $p < 0.001$). Functional Outcomes: SA-NME produced significantly greater reductions in pain intensity (VAS/NRS) (SMD = -0.82; 95% CI: -1.11 to -0.53; $I^2 = 41\%$; $p < 0.001$), TUG performance (SMD = -0.69; 95% CI: -0.94 to -0.44; $I^2 = 29\%$; $p < 0.001$), and 6MWT distance (SMD = 0.58; 95% CI: 0.31 to 0.85; $I^2 = 47\%$; $p < 0.001$) compared to electrical stimulation. Subgroup analysis revealed that Grade III KOA patients exhibited larger effect sizes favoring SA-NME for proprioception and pain outcomes compared to Grade II, and that intervention durations ≥ 12 weeks amplified functional benefits. Egger's test indicated no significant publication bias for primary outcomes ($p > 0.05$).

CONCLUSION: These findings support the integration of sensor-assisted exercise protocols into evidence-based KOA rehabilitation guidelines, particularly for moderate-to-severe disease stages. The overall RoB 2 profile reflects moderate methodological quality across the body of evidence, underscoring the need for adequately powered, rigorously blinded RCTs with standardized sensor protocols and long-term follow-up to consolidate these findings.

Keywords: Knee Osteoarthritis · Sensor-Assisted Exercise · Neuromuscular Training · Electrical Stimulation

UG-PP-74 — Efficacy And Safety Of Mini-Sternotomy Vs Full-Sternotomy In Patients Undergoing Aortic Valve Replacement (Avr): A Systematic Review And Meta-Analysis.

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Background & Objectives: Full median sternotomy has long been the standard approach for aortic valve replacement (AVR), but less invasive techniques such as mini-sternotomy are increasingly adopted to reduce surgical trauma and improve recovery. Previous studies comparing these approaches have reported mixed outcomes, particularly regarding postoperative complications. We conducted a systematic review and meta-analysis to compare perioperative and clinical outcomes of mini-sternotomy versus full sternotomy in adults undergoing AVR.

Methods: PubMed, Embase, and the Cochrane Library were searched up to January 2026 for randomized controlled trials and observational studies. Primary outcomes included cardiopulmonary bypass (CPB) time, aortic cross-clamp time, operative duration, ICU stay, and hospital stay, while secondary outcomes included renal insufficiency, mortality, stroke, and blood loss.

Results: Data were pooled using a random-effects model, and risk ratios (RR) or mean differences (MD) with 95% confidence intervals (CI) were reported. Nine studies with a total of 5,447 patients were included. Mini-sternotomy was associated with longer CPB (MD ≈ 13 min) and cross-clamp times (MD ≈ 9 min) but resulted in a modestly shorter hospital stay (MD -0.8 days; 95% CI -1.50 to -0.09). No significant differences were observed in ICU stay, overall operative time, mortality, stroke, renal insufficiency, or blood loss. Despite the slightly longer CPB and cross-clamp durations, mini-sternotomy did not increase major complications.

Conclusion: These findings suggest that mini-sternotomy is a safe and effective alternative to conventional sternotomy for AVR, offering reduced hospital stay without compromising key perioperative outcomes. Further large, high-quality trials with long-term follow-up are warranted to identify patient subgroups who may benefit most from this minimally invasive approach.

Keywords:

Mini-sternotomy, Full sternotomy, Aortic valve replacement, Systematic review, Meta-analysis, Perioperative outcomes

UG-PP-75 — Efficacy of Combined Nutritional and Physical Activity Intervention in Reversing Early MAFLD

Background& Objectives:

Metabolic-associated fatty liver disease (MAFLD) is closely linked with lifestyle factors including diet and physical inactivity. Multidisciplinary interventions combining nutritional counseling and structured exercise may offer effective strategies to reverse early MAFLD, but local data are limited.

To evaluate the effectiveness of a combined nutritional and physical activity intervention on liver fat reduction and metabolic parameters in patients with early-stage MAFLD.

Method: A total of 60 patients with ultrasound-confirmed early MAFLD and metabolic risk factors were prospectively enrolled between January 2024 and March 2025. Participants underwent individualized nutritional counseling emphasizing a hypocaloric, balanced diet and a structured exercise regimen (aerobic and resistance training, three sessions per week) for 12 weeks. Baseline and post-intervention assessments

included BMI, liver enzymes (ALT, AST), lipid profile, fasting glucose, HbA1c, and controlled attenuation parameter (CAP) scores by FibroScan. Data were analyzed using paired t-tests, with $p < 0.05$ considered statistically significant.

Result: After 12 weeks, patients showed clear improvements, BMI, ALT, triglycerides, and fasting glucose all decreased significantly. Liver fat (CAP score) dropped from severe (312) to moderate (280), showing real reversal of steatosis. HbA1c and cholesterol improved slightly. Program adherence was high.

Conclusion: Effect of Diet and Exercise on MAFLD Parameters (12 Weeks)

Before After A multidisciplinary lifestyle intervention integrating nutritional counseling and structured physical activity significantly reduced hepatic steatosis and improved metabolic indices in early MAFLD. Incorporating such interventions into standard clinical practice may enhance MAFLD management outcomes.

Keywords: Metabolic-associated fatty liver disease,

UG-PP-76 — Emotional Intelligence And Its Perception Among Medical Students Of Azra Naheed Medical College

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Background & Objectives: Emotional intelligence (EI) plays a vital role in medical students' well-being, academic performance and clinical competence, particularly within the emotionally demanding environment of medical training. This study aimed to assess EI levels and its perception among students at Azra Naheed Medical College (ANMC), Lahore.

Methods: A cross-sectional study was conducted among 222 MBBS students selected through stratified random sampling. EI was assessed using the 33-item Schutte Self-Report Emotional Intelligence Test (SSEIT). Data on age, gender, academic year, socioeconomic status, physical activity, stress-related behaviors, and social media use were collected. Statistical analysis was performed using SPSS version 26, applying descriptive statistics, independent t-tests, one-way ANOVA, and correlation analysis.

Results: Among participants, 62.8% were male. Overall, 45.2% demonstrated low perception levels and 38.3% showed moderate awareness, with females exhibiting comparatively higher awareness. Physical activity was associated with more positive perceptions, while social media use before bedtime showed a noticeable personal impact but did not significantly influence overall awareness or perceptions. The mean EI score was 108.6 corresponding to the Low EI category and approaching the lower boundary of Moderate EI. Overall, 47.1% of students had Low EI, 43.9% Moderate EI, and 9.0% High EI. EI scores were lowest in third-year students and highest in first-year students.

Conclusions: EI levels among ANMC medical students were predominantly low to moderate, with variation across gender and academic

years. These findings emphasize the need for structured EI-enhancement initiatives to support student well-being and professional development.

Keywords: Emotional intelligence, SSEIT, medical students

UG-PP-77 — Evaluating the Effects of Blood Cupping (Al Hajjamah) on Biochemical Profile (Lipid Profile & Liver Function Test): A Study in Peshawar, Pakistan

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Background: The term "Hijama" is imitative from "hajm" which revenues "sucking." cupping is the method of applying cups to different parts of the body by eradicating the air by vacuum which is inside the cup. Wet cupping treatment is an unassuming, low-cost, and operational complementary therapeutic treatment Cupping treatment is being experienced currently in numerous countries all over the world including Germany, Norway, Denmark, Saudi Arabia, Egypt, India, China and other countries.

Objective: The aim of this research was to evaluate the impact of Al- Hajjamah on lipid profile and liver function tests in women.

Methods: The study was conducted using primary data from Town cupping therapy for ladies Peshawar. The 20 samples of lipid profile and LFTS were analyzed before and after 6 days of cupping therapy, Patient demographics, includes age. Lipid profile includes cholesterol, Triglyceride, LDL, HDL and LFTS includes ALT, ALP. These parameter were analyzed by Micro lab 300.

Results: The 20 participant's blood samples are included in this study. The study populations consist of 20 females. The lipid profile and LFTS was analyzed. In the lipid profile cholesterol, Triglyceride was not significant statistically while HDL, LDL was statistically significant and in LFTS ALT and ALP both was statistically significant.

Conclusion: This study highlights that blood cupping has a positive impact on biochemical profile including ALP, ALT, LDL and HDL.

UG-PP-78 — Evaluating The Efficacy Of Antiviral And Anti-Inflammatory Therapy As A Potential Disease Modifying Strategy For Parkinson's Disease- A Scoping Review.

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Background & Objectives: Parkinson's disease has long been treated symptomatically with L-dopa, with later stages being progressively worse and deep brain stimulation and ultrasonic therapy serving as the only current surgical interventions. Recent breakthroughs have hinted at the possibility of

repurposing drugs such as antivirals, especially amantadine, and anti-inflammatory agents including anti-TNF for the therapeutic treatment of PD, not just to control the symptoms but also for potential improvement. Given the increasing burden of PD worldwide, it is important to delve into potential therapeutic advancements. This study thus offers a comparative review of the current therapeutic advancements for treating PD.

Methods: This research follows a methodical review of the PubMed database for clinical trials, analysis, observational studies, multicenter studies, and RCTs with the interventions of interest, within the timeframe of 2020-2026. The data collected are run through SPSS for analysis, and the results yielded will be mentioned along with reviews from other analyses. The study will also encompass the variations involved in separate administration of the drugs along with combined therapy.

Results: The work is in progress, but the results might potentially align with the latest breakthroughs, with a probability that future treatment of PD could involve precision medicine due to the immense stratification in the patient population, or that, with an adequate and large number of clinical trials, a combined pharmaceutical approach could be envisioned.

Conclusion: Since the study has not been completed, it is therefore biased to draw definitive conclusions, however, evidence does point in favor of new hypotheses for PD development itself suggesting novel methods of therapeutic medicine.

Keywords: drug repurposing, antiviral, anti-TNF, inflammation, PD

UG-PP-79 — Experiences Of People Suffering From Solastalgia And Eco Anxiety

in the Flood Affected Area of Malakand Division, Khyber Pakhtunkhwa

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Background & Objective: Climate change has elevated the frequency and amount of floods which influences the physical environment along with the mental and emotional state of the people. These psychological effects are best understood with the help of two significant notions namely solastalgia and eco-anxiety. Solastalgia is related to the condition of the people who are suffering when their home environment is affected, whereas eco-anxiety refers to the worrying and fearful state of the people about the climatic change and future crisis. This study has explored these experiences of the ruler flooded areas in Pakistan. The purpose of the study was to understand the experiences of the people residing in the flood-affected area of Beshonai Village located in the District Buner emphasizing how the floods influenced their mental health and emotions with reference to solastalgia and eco-anxiety.

Methods: The study applied a descriptive qualitative method. Through purposive sampling ten adults were selected who were directly influenced by the floods. Data were gathered by using face to face and semi-structured interviews carried out in Pashto language and audio-recorded, then transcribed and analysed by using thematic analysis following Creswell's (2014) framework. Moreover, ethical consent was approved in order to maintain academic integrity and ensured using established qualitative research criteria.

Result: Three main themes appeared from the data. The first theme outlined strong psychological and emotional effects like fear, anxiety, trauma, sleep disorders and emotional burnout. The second theme explained the loss of lives, homes, livelihood and the environment along with the disappointment with the government support. The third theme presented the environmental changes, flood experiences including the attachment to the lands, sudden flood events, changes in the daily routine, relocation anxiety and fear of the future floods.

Conclusion: The study presents that due to the floods emotional and psychological sufferings are linked to the environmental loss and climatic unpredictability. Responding to these problems entails long-term mental health guidance, environmental safety and strong community-based recovery programs for the flood victims.

Keywords: Solastalgia; Eco-anxiety; Floods; Climate change; Mental health; Qualitative study; Pakistan

UG-PP-80 — Exploring The Impact Of Climate Change And Natural Disasters On Enteric Diseases: A Scoping Review

Climate change has elevated the frequency and amount of floods which influences the physical environment along with the mental and emotional state of the people. These psychological effects are best understood with the help of two significant notions namely solastalgia and eco-anxiety. Solastalgia is related to the condition of the people who are suffering when their home environment is affected, whereas eco-anxiety refers to the worrying and fearful state of the people about the climatic change and future crisis. This study has explored these experiences of the ruler flooded areas in Pakistan

Objective: The purpose of the study was to understand the experiences of the people residing in the flood-affected area of Beshonai Village located in the District Buner emphasizing how the floods influenced their mental health and emotions with reference to solastalgia and eco-anxiety.

Methods: The study applied a descriptive qualitative method. Through purposive sampling ten adults were selected who were directly influenced by the floods. Data were gathered by using face to face and semi-structured interviews carried out in Pashto language and audio-recorded, then transcribed and analysed by using thematic analysis following Creswell's (2014) framework. Moreover, ethical consent was approved in order to maintain academic integrity and ensured using established qualitative research criteria.

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Conclusion: The study presents that due to the floods emotional and psychological sufferings are linked to the environmental loss and climatic unpredictability. Responding to these problems entails long-term mental health guidance, environmental safety and strong community-based recovery programs for the flood victims.

Keywords: Solastalgia; Eco-anxiety; Floods; Climate change; Mental health; Qualitative study; Pakistan

UG-PP-81 — Exploring the Link Between Problematic Internet Use, Quality of Life, and Academic Outcomes in Medical Education

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Background & Objectives: To determine the impact of problematic internet use [PIU] and quality of life on academic performance.

Methods: A cross-sectional study was conducted in the medical colleges of district Peshawar from Feb 2025 to August 2025. A total of 112 data was collected through structured questionnaire. For statistical analysis, SPSS v.22 was used

Results: The mean age of the participants was 20.91 ± 1.819 . The mean scores for the PIU components—neglect, obsession, and control—were $1.9464 \pm .80359$, $1.5714 \pm .75593$, and $1.8661 \pm .78838$, respectively. Most of the participants from the first year of the medical school. The student show good academic performance 57.1% in their medical school. The mean value for environmental domain $2.4464 \pm .53422$ is higher because from the support from the surrounding and least mean value for physical domain $2.3304 \pm .54340$ is due to several reason due to overuse of mobile, academic stress which may lead to different disease like obesity and other health problem.

Conclusion: The findings of this study suggest that medical students in Peshawar demonstrate a moderate level of problematic internet use, which has implications for their physical health, psychological well-being, and academic performance. The significant association observed with environmental factors and academic outcomes highlights the role of surrounding support systems. Promoting balanced and mindful internet use appears essential for safeguarding students' academic success as well as their overall health.

Keywords: Internet use, Quality of life, Academic performance

UG-PP-82 — Exploring The Relationship Between Social Media Exposure And Orthodontic Treatment Decision Among Dental And Non Dental University Going Students

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Background & Objective: To assess how social media influences orthodontic treatment decisions among dental and non-dental

university students in Islamabad and Rawalpindi. **Study Design:** Cross-sectional observational study. **Study Place and Duration:** This study was conducted over six months among students from dental, medical, paramedical, engineering, and arts universities in Islamabad and Rawalpindi.

Method: A total of 250 students from dental and non-dental fields took part in the study. Data were collected using a structured, self-administered questionnaire shared both online and on campus. Statistical analysis was performed using IBM SPSS version 27. Descriptive statistics were used to summarize demographic details and social media use, while the chi-square test assessed the relationship between student type and the influence of social media on orthodontic awareness and decision-making (significance level = 0.05).

Results: Most participants were 18–25 years old (97.2%) and female (69.2%). Dental students showed higher awareness of orthodontic treatments than non-dental students (98.9% vs. 80.9%, $p < 0.001$). Instagram was the most commonly used platform. Dental students were more likely to follow dental professionals (86.0% vs. 40.1%, $p < 0.001$) and frequently viewed orthodontic-related content (76.3% vs. 13.4%, $p < 0.001$). Both groups agreed that social media increased awareness about orthodontic treatments ($p = 0$).

Conclusion: Social media platforms such as Instagram and YouTube play a major role in shaping how people view smiles and make decisions about orthodontic treatment. While dental students were more informed and followed professional content, both dental and non-dental students agreed that although

social media increases awareness, it also creates unrealistic expectations about perfect smiles.

Key words: Orthodontics, Social media, Dental Students, Awareness

UG-PP-83 — Extracurricular Activities And Its Impact On Academic Achievement, Personality Development, And Physical And Emotional Well-Being Among Medical Students In Peshawar.

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Background And Objectives: Extracurricular activities are structured programs conducted outside the traditional classroom setting and play a vital role in enhancing students' educational experiences. These group-based activities contribute not only to academic success but also to overall personal development and well-being. In recognition of their growing importance, this study was conducted among medical students in Peshawar to evaluate the influence of extracurricular participation on academic performance, personality development, and physical and emotional well-being.

Methods: A quantitative approach was used. To fulfill the Objectives of study, a Google Form was made as the instrument for collecting data. 230 students of both genders from various Public and Private medical colleges in Peshawar were a part of this study. The collected data was analyzed using the Statistical Package for Social Science (version 27) (SPSS).

Results: Participation in extracurricular activities showed a favorable impact on multiple aspects of student development. Significant positive correlations were observed with improved time management ($p = 0.002$), increased social interaction ($p < 0.05$), enhanced leadership skills ($p < 0.01$), and better task completion ($p < 0.05$). However, no statistically significant differences were found in perceived academic performance or in physical and emotional well-being ($p > 0.05$). Overall, the findings indicate that extracurricular activities promote essential life skills and contribute to holistic development beyond academic achievement.

Conclusion: Extracurricular activities foster personality growth and time-management skills, supporting academic performance, though their effects on satisfaction and well-being remain unclear. Identifying the most impactful ECAs is key for holistic medical student development.

Key words: Extracurricular activities, medical students, academic performance, personality growth, physical and emotional wellbeing.

UG-PP-84 — Geographic and Demographic Disparities in U.S. Mortality From Aspiration Pneumonia and Respiratory Failure, 1999–2020:

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Background: Aspiration pneumonia can progress to diffuse pulmonary inflammation, impaired gas exchange, and, in severe cases, respiratory failure. Understanding long-term

mortality patterns and high-burden subgroups is important for targeted prevention and resource allocation.

Methods: Mortality data (1999–2020) were obtained from the CDC Wide-Ranging Online Data for Epidemiologic Research (WONDER) Multiple Cause of Death dataset. Aspiration pneumonia and respiratory failure were evaluated as underlying or contributing causes of death. Age-adjusted mortality rates (AAMRs) per 100,000 population were calculated and stratified by year, sex, age group, race/ethnicity, place of death, urbanization level, U.S. state, and census region. Joinpoint Regression was used to estimate annual percent changes (APCs) with 95% confidence intervals (CIs). Statistical significance was set at $p < 0.05$.

Results: From 1999 to 2020, the combined death count was **6,050,813**. Overall mortality increased with an **APC of 1.04 (1999–2018)**, accelerating to **17.43 (2018–2020)**. **Males** demonstrated higher AAMRs than females (**106.96 vs 75.35**). The highest proportion of deaths occurred in the **75–84** and **85+** age groups (**30.12% each**). **Non-Hispanic** individuals had higher AAMRs than Hispanic individuals (**88.90 vs 78.32**). By race, AAMR was highest among **Black** individuals (**102.40**), followed by **White** (**87.75**), **Alaska Native** (**76.41**), and **Asian** individuals (**59.61**). Most deaths occurred in **inpatient medical facilities** (**61.84%**), followed by **nursing homes** (**16.38%**) and **home** (**12.01%**). AAMRs were highest in **micropolitan (non-metro)** areas (**95.87**) and lowest in **large fringe metro** areas (**82.39**). Regionally, the **South** had the highest AAMR (**93.23**) and the **Midwest** the lowest (**81.09**). State-level AAMRs were highest in **Mississippi** (**135.01**) and lowest in **Minnesota** (**50.77**).

Conclusions: U.S. mortality attributed to aspiration pneumonia and respiratory failure rose substantially from 1999–2020, with a marked acceleration after 2018. Higher burdens were observed among males, non-Hispanic populations, Black individuals, micropolitan areas, the South, and select states (notably Mississippi). Targeted prevention and respiratory-care capacity building particularly in high-burden regions may reduce avoidable deaths, including improved identification of recurrent aspiration risk (e.g., dysphagia, neurologic impairment) in acute-care settings.

Keywords: micropolitan, prevention, Mortality

UG-PP-85 — Fingernail Based Biomarker For Cardiovascular Disease And Diabetes : A Review Of Raman Spectroscopy And Machine Learning

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Background & Objectives: Cardiovascular disease and diabetes mellitus represent major global health challenges, necessitating the development of rapid, reliable, and non-invasive diagnostic approaches for early detection and risk assessment. Raman

spectroscopy has emerged as a promising analytical technique due to its ability to provide molecular-level information from biological samples with minimal preparation. Fingernails, as a stable and easily accessible biological matrix, offer a unique opportunity for non-invasive monitoring of metabolic and pathological changes associated with chronic diseases. The objective of this study is to explore the integration of fingernail-based Raman spectroscopy with machine learning techniques for the detection and differentiation of biomarkers related to cardiovascular disease and diabetes mellitus.

Methods: Raman spectral data obtained from fingernail samples are processed to capture disease-associated biochemical variations, followed by the application of machine learning algorithms for pattern recognition and classification. This integrative approach is designed to enhance analytical accuracy by identifying subtle spectral differences that may not be discernible through conventional analysis alone.

Results: The findings demonstrate that the combined use of Raman spectroscopy and machine learning enables effective discrimination between healthy and diseased states based on fingernail spectral profiles, highlighting its potential as a screening and supportive diagnostic tool. The proposed Methods underscores the feasibility of a non-invasive, portable, and patient-friendly diagnostic framework, which may be particularly beneficial in resource-limited healthcare settings.

Conclusion: Overall, this study contributes to the growing field of spectroscopic diagnostics by presenting a novel, integrated strategy for early detection and monitoring of cardiovascular disease and diabetes mellitus,

with potential implications for preventive healthcare and personalized medicine.

Keywords: Raman spectroscopy, fingernails, machine learning, cardiovascular disease, diabetes mellitus, non-invasive diagnosis

UG-PP-86 — Forensic Study Of Physical Changes In Thermoplastic Nylon-Based Dentures With Porcelain Dental Elements Due To Exposure To High Temperatures

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Background & Objectives: Fires are disasters that can cause environmental harm and physical injuries, making visual identification difficult. In such situations, forensic dentists are expected to assist in the identification process because teeth are still considered highly reliable evidence. In a fire, victims may have worn dentures, leaving denture remains that can be identified.

Currently, the percentage of denture users in Indonesia is 5.5%, with 3.5% using removable partial dentures. Thermoplastic nylon is a popular material for removable denture bases because of its aesthetics, lightness, and flexibility. Meanwhile, porcelain is often used for denture components due to its good biocompatibility and strength. This research aimed to determine the physical changes in thermoplastic nylon based dentures with porcelain elements in shape, weight, color, and surface roughness after exposure to high temperatures.

Methods: In this study, the thermoplastic nylon material used as a denture base is the Valplast® brand. Thermoplastic nylon-based denture samples with porcelain dental elements were divided into four treatment groups, namely P1 (32-288 °C), P2 (32-319 °C), P3 (32-412 °C), and P4 (32-800 °C), and their shape, weight, color, and surface roughness measurements were observed before and after heating using an oven.

Results: The results showed that the samples underwent physical changes, including shape, weight, color, and surface roughness. Through ANOVA, Kruskal-Wallis, and Mann-Whitney tests, significant changes occurred in shape, weight, and color after heating. Meanwhile, changes in surface roughness of dentures made from thermoplastic nylon with porcelain dental elements showed no significant differences after being measured using a Kosaka SE800 roughness meter.

Conclusion: Thermoplastic nylon-based dentures with porcelain dental elements experience changes in shape, weight, color, and surface roughness due to heating at high temperatures, so that the results of this study can be used as a reference in the forensic

identification process when a fire disaster occurs involving victims who use dentures.

Keywords: Porcelain, Fire Disaster, Identification, Thermoplastic Nylon, Denture

UG-PP-87 — Frequency and associated factors of dental caries among type II diabetic and nondiabetic adults of Peshawar.

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Background & Objective(S): Diabetes is a diseased condition characterized by an endocrine disorder resulting in high glucose levels in the blood. Hyperglycaemia leads to a decrease in salivary rate which is common during periods of poor diabetes metabolic control, allowing aciduria bacteria to thrive and plaque to deposit. To assess and compare the oral hygiene of diabetic to non-diabetic individuals. To assess factors that aggravate dental caries in diabetic and non-diabetic individuals

METHOD: A descriptive study was conducted from July to March 2025 on 350 diabetic and non-diabetic adults of age 31-40 years of Peshawar visiting PDC, SBDC, RCD, KCD and authorized dental clinics. Data was collected from patients using a non-probability consecutive sampling technique via a retested structured interviewer-administered questionnaire and an oral examination was conducted, which were then analysed using SPSS v26.

RESULTS: The diabetic individuals were 139 (39.7%), while the non-diabetic were 211 (60.3%) The oral hygiene status was Poor: 183 (52.3%), Satisfactory: 144 (41.1) and Good: 23

(6.6%). Brushing habits included twice daily: 85 (24.3%), once daily: 127 (36.3%), Irregular: 138 (39.4%). The use of fluoridated tooth included Yes: 279 (79.7%) and No: 71 (20.3%). Xerostomia was by 145 (41.4%) in diabetics vs 205 (58.6%) non-diabetics. Only 159 (45.4%) participants knew about oral hygiene. Decayed Teeth were 0 decayed: 27 (7.7%), 1–2 decayed: 125 (35.7%) and >2 decayed: 198 (56.6%). Chi-square tests confirmed significant associations ($p < 0.05$) between diabetes status and Decayed teeth ($p = 0.002$), Dry mouth ($p = 0.001$), and irregular brushing habit ($p = 0.03$).

CONCLUSION: The study revealed critical variations in oral health between diabetic and non-diabetic. Diabetes proved to be a major Risk Factor for dental carries. Poor oral hygiene and Low oral health awareness highlighted gaps in education.

Key words: oral hygiene, Xerostomia, naswar chewing, fluoridated toothpaste, dental carries

UG-PP-88 —Frequency of Common Pathogens Causing Urinary Tract Infection In Patients Admitted To Medicine Department of Saidu Group Of Teaching Hospitals

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Background & Objectives: Thorough grasp of the local microbial environment is essential for managing urinary tract infections (UTIs), which constitute a significant worldwide health burden. The purpose of this descriptive cross sectional study was to figure out the prevalence of common bacterial infections that cause UTIs

and their correlations with patient characteristics among patients who visited the Saidu Group of Teaching Hospital, Swat's medicine department.

Methods: Consecutive sampling was used over a six-month period to enroll 178 people who met the inclusion criteria. Standard microbiological methods were used to collect and treat midstream urine samples for identification and culture. A standardized proforma was used to gather clinical and demographic information, such as age, gender, body mass index (BMI), place of residence, and history of hypertension and diabetes.

Results: The study population was slightly more female (56.2%), with a mean age of 32.46 ± 14.90 years. The most common pathogen was *Escherichia coli* (42.7%), which was followed by *Enterococcus faecalis* (9.0%) and *Klebsiella pneumoniae* (20.8%). Non-parametric tests were used when Shapiro-Wilk tests verified that continuous variables had a non-normal distribution. Chi-square tests were used in inferential analysis to find statistically significant correlations between the causal pathogen and a number of patient characteristics. Pathogens including *Enterobacter cloacae* and *Pseudomonas aeruginosa* were more common in young individuals, but *Proteus mirabilis* and *Enterococcus faecium* were more common in older persons, according to a substantial connection between age groups ($p < .001$, Cramer's $V = .37$).

Conclusion: Significant correlations were found between the status of diabetes ($p < .001$, Cramer's $V = .42$) and hypertension ($p < .001$, Cramer's $V = .48$), with *Proteus mirabilis* only related with hypertensive patients and strongly associated with diabetics. *Pseudomonas*

aeruginosa rates were higher in rural locations, but pathogen diversity was higher in urban settings. The distribution of pathogens was similarly influenced by the area of residence ($p=.003$). The results emphasize that certain host demographics and comorbidities have a major impact on UTI etiology, which is not random. This data demonstrates the necessity of focused preventative measures and customized empirical antibiotic therapy for particular patient subgroups in this area.

Keywords: Urinary Tract Infections, Bacterial Pathogens, Escherichia coli, Risk Factors, Diabetes Mellitus

UG-PP-89 — Frequency Of Computer Vision Syndrome And It's Association With Forward Head Posture Among Physical Therapy Students Of Rehman College Of Rehabilitation Sciences Peshawar; An Analytical Cross-Sectional Study

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Background & Objective: With continuous evolution of technology and rapidly increasing pace of the world moving towards digitalization, the dependency of students upon computers and smartphones becomes inevitable. An increased screen time brings on a plethora of risk factors, a major one being computer vision syndrome, which is a predisposal to adopt abnormal ergonomic practices leading to the development of forward head posture and thereafter inviting its adverse effects. Presently a considerably vulnerable population to computer vision syndrome is physical therapy students. To find

the frequency of Computer Vision Syndrome and its association with forward head posture.

Material and Methods: An analytical cross-sectional study comprising 153 physical therapy students of RCRS comprising a population of 251 students was conducted at RCRS. A probability sampling technique, i.e. simple random sampling was used. The CVS smart questionnaire and a goniometer were used as tools to find the frequency of CVS and FHP. With permission obtained priorly and data collected, SPSS was used for data analysis.

Results: 84 participants out of 153 (84%) had CVS. 123 (80%) participants had forward head posture. A significant association was established between CVS and CVA (P value 0.000), CVS and screen usage duration (P value 0.003) as well as CVS and Semester (P value 0.039).

Conclusion: The frequency of CVS and FHP was found among the physical therapy students. A significant association was established between increased duration of screen usage and CVS.

Keywords: Computer Vision Syndrome, Physical Therapy, Forward Head Posture

UG-PP-90 — Frequency of Flap Survival after Distally Based Sural Flap for Heel Defects in the Pediatric Age Group

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BACKGROUND: Heel wounds are common in children and are linked to multiple etiologies, with road traffic accidents being the

leading cause. Younger and school-aged children are especially vulnerable, and foot and heel trauma constitute nearly half of lower limb injuries. Defects affecting the weight-bearing heel surface significantly impair function and mobility, posing a challenge for reconstructive surgeons. The distally based sural flap is widely used for soft-tissue coverage in these cases, but outcome data in children are limited.

OBJECTIVE: To determine the frequency of flap survival following a distally based sural flap used for heel reconstruction in pediatric patients.

METHODS: A descriptive study was conducted in the Plastic Surgery Department at Hayatabad Medical Complex, Peshawar. Children presenting with heel defects meeting inclusion criteria were selected from outpatient, emergency, and inter-unit referrals. All operations were performed under general anesthesia by consultant plastic surgeons. A distally based sural artery flap was used for coverage, and the affected limb was immobilized for three weeks. Postoperative care included routine medications and discharge after stabilization. Patients were followed for 7 days to assess flap viability. Patient demographics and operative details were recorded, and flap survival was documented.

RESULTS: A total of 97 pediatric patients (mean age 8.78 ± 3.31 years) were included. Most children were aged 3–8 years (51.5%), and 73.2% were male. Successful flap survival was observed in 84 patients, corresponding to a survival frequency of 86.6%.

CONCLUSION: The distally based sural flap provides reliable coverage for pediatric heel

defects, demonstrating an overall survival rate of 86.6%.

KEYWORDS: Sural flap, Pediatric heel defects, Flap survival

UG-PP-91 — Frequency Of Iliotibial Band Tightness And Its Association With Prolonged Cross-Legged Sitting Among Undergraduate Students Of Rehman Medical Institute; An Analytical Cross-Sectional Study

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Background & Objectives: The human upright posture has a connection with the Iliotibial band (ITB), sometimes referred to as Maissiat's band. It is a tough fascial and fibrous band on the lateral aspect of your thigh. ITB tightness refers to increased rigidity or stiffness in the ITB, which can occur commonly in students due to their prolonged sitting habits. To determine the frequency of Iliotibial band tightness and its association with Cross-Legged sitting and the pain that arises from it among undergraduate students of Rehman Medical Institute (RMI) Peshawar.

Methods: This was an analytical cross-sectional study in which 329 students were selected from five principle institutes of RMI namely Rehman College of Rehabilitation Sciences (RCRS), Rehman Medical College (RMC), Rehman College of Dentistry (RCD), Rehman College of Nursing (RCN) and Rehman College of Allied Health Sciences

(RCAHS). An organized questionnaire was filled out by each student followed by the application of Ober's test to check for ITB tightness.

Results: ITB tightness was prevalent among 48.6% of students. A positive association was found between ITB tightness and Cross-Legged sitting (p-value < 0.001) and the pain related to this type of sitting (p-value < 0.001). Furthermore, association was also found between ITB tightness and another secondary variable of the study, i.e., Number of Daily Sitting Hours.

Conclusion: The study revealed a high frequency of iliotibial band tightness among undergraduate students. A significant association was found between ITB tightness, prolonged cross-legged sitting, and related pain.

Keywords: ITB Tightness, Cross-Legged Sitting, Ober's Test.

UG-PP-92 — Frequency Of Re-Entry Injury In Repeat Cardiac Surgery And Associated Risk Factor Evaluated At A Newly Established Cardiac Center

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Background & Objectives: Repeat cardiac surgery is often complicated by re-entry injuries and other risks, especially in patients with a history of prior cardiac procedures. The associated reason of repeat surgeries include complications such as graft failure, valve

dysfunction, or disease recurrence. This study aimed to assess the frequency of re-entry injuries and other early complications in patients undergoing repeat cardiac surgery at a newly established cardiac center. The study included patient's data who visited cardiac surgery department of Peshawar Institute of Cardiology between January 2021 to February 2025. This retrospective study included 28 patients who underwent repeat cardiac surgery.

Methods: Data on demographics, pre-operative status, comorbidities, and surgical procedures were collected from the hospital's management information system (HMIS) and electronic medical records (EMR). The primary outcomes were re-entry injury frequency, postoperative complications, and 30-day mortality.

Results: The study included 64.3% female patients, with a mean age of 38.89 years. Common pre-operative conditions included hypertension (32.1%) and advanced heart failure, with 71.4% of patients classified as NYHA class III and IV. The most frequent procedures were redo mitral valve replacement (MVR) and pseudoaneurysm repair. Central cannulation was used in 78.57% of cases, with a mean bypass time of 140.23 minutes. This study provides important insights into the characteristics, procedures, and outcomes of patients undergoing repeat cardiac surgery at a newly established cardiac centre with no re-entry injury.

Conclusion: The findings indicate that the majority of patients were female, mostly presenting advanced heart failure and requiring complex, multi-valve procedures. Central cannulation was the predominant method for cardiopulmonary bypass.

KEYWORDS: 30-day mortality,

Cardiopulmonary bypass, Central cannulation, Postoperative complications, Repeat cardiac surgery, Re-entry injury

UG-PP-93 — Geographic and Demographic Disparities In U.S. Mortality From Aspiration Pneumonia And Respiratory Failure, 1999 to 2020

Background & Objectives: : Aspiration pneumonia can progress to diffuse pulmonary inflammation, impaired gas exchange, and, in severe cases, respiratory failure. Understanding long-term mortality patterns and high-burden subgroups is important for targeted prevention and resource allocation.

Methods: Mortality data (1999–2020) were obtained from the **CDC Wide-Ranging Online Data for Epidemiologic Research (WONDER)** Multiple Cause of Death dataset. Aspiration pneumonia and respiratory failure were evaluated as **underlying or contributing causes of death**. **Age-adjusted mortality rates (AAMRs) per 100,000 population** were calculated and stratified by year, sex, age group, race/ethnicity, place of death, urbanization level, U.S. state, and census region. **Joinpoint Regression** was used to estimate **annual percent changes (APCs)** with **95% confidence intervals (CIs)**. Statistical significance was set at $p < 0.05$.

Results: From 1999 to 2020, the combined death count was **6,050,813**. Overall mortality increased with an **APC of 1.04 (1999–2018)**, accelerating to **17.43 (2018–2020)**. **Males** demonstrated higher AAMRs than females (**106.96 vs 75.35**). The highest proportion of deaths occurred in the **75–84** and **85+** age groups (**30.12% each**). **Non-Hispanic** individuals had higher AAMRs than Hispanic individuals (**88.90 vs 78.32**). By race, AAMR

was highest among **Black** individuals (**102.40**), followed by **White** (**87.75**), **Alaska Native** (**76.41**), and **Asian** individuals (**59.61**). Most deaths occurred in **inpatient medical facilities** (**61.84%**), followed by **nursing homes** (**16.38%**) and **home** (**12.01%**). AAMRs were highest in **micropolitan (non-metro)** areas (**95.87**) and lowest in **large fringe metro** areas (**82.39**). Regionally, the **South** had the highest AAMR (**93.23**) and the **Midwest** the lowest (**81.09**). State-level AAMRs were highest in **Mississippi** (**135.01**) and lowest in **Minnesota** (**50.77**).

Conclusions: U.S. mortality attributed to aspiration pneumonia and respiratory failure rose substantially from 1999–2020, with a marked acceleration after 2018. Higher burdens were observed among males, non-Hispanic populations, Black individuals, micropolitan areas, the South, and select states (notably Mississippi). Targeted prevention and respiratory-care capacity building particularly in high-burden regions may reduce avoidable deaths, including improved identification of recurrent aspiration risk (e.g., dysphagia, neurologic impairment) in acute-care settings.

Keywords: dysphagia, neurologic impairment, respiratory-care

UG-PP-94 — Impact of Junk Food on Academic Performance Among Teenagers

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Background: Musculoskeletal injuries are prevalent across all levels of cricket, with bowlers exhibiting the highest incidence due to escalated biomechanical demands. These injuries vary in severity and may affect performance, quality of life and long-term career sustainability. Cricket bowlers frequently manifest generalized joint hypermobility to enhance performance but this may increase susceptibility to musculoskeletal disorders. Examining the combined impact of musculoskeletal problems, quality of life, and generalized joint hypermobility may guide targeted training strategies to optimize athletic performance and well-being.

Methods: A descriptive cross-sectional study was conducted from May to August, 2024 on club level cricket bowlers of Rawalpindi and Islamabad. A total of 210 players were recruited using purposive sampling technique. Bowlers aged 18–25 years with ≥ 1 year of active playing experience were included while players with a history of trauma, inherited connective tissue disorders or irregular practice patterns were excluded. Descriptive statistics were used to summarize the results. Associations were determined using chi square test.

Results: Of the 210 bowlers, 165 (78.6%) were fast and 45 (21.4%) were spin bowlers. MSK problems were frequently reported in shoulder (n=117, 55.7%) and lower back (n=89,

42.4%). Dendrogram based cluster analysis illustrated that shoulder, lower back, neck and elbow exhibit similar patterns of MSK pain while wrists, upper back, hips, knees, and feet form distinct clusters across hypermobility categories. Self-reported quality of life showed no significant difference between players with and without MSK symptoms ($p = 0.777$) and hypermobility was not significantly associated with MSK problems ($p = 0.158$).

Conclusion: Musculoskeletal problems of the upper limbs, particularly shoulder are highly prevalent among cricket bowlers. Musculoskeletal symptoms were frequent in moderately and distinctly hypermobile players. Future studies should incorporate sport-specific screening and targeted preventive strategies to mitigate injuries and enhance functional outcomes among bowlers.

Keywords: Musculoskeletal problems, Generalized joint hypermobility, Cricket bowlers, Quality of life

UG-PP-95 — Immune Responses And Graft Survival Outcomes In Xenotransplantation: A Systematic Review

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Background & Objectives: Xenotransplantation is emerging as a promising solution to the critical shortage of donor organs worldwide. Despite considerable progress in reducing hyper-acute and acute xenograft rejection through various gene modifications and immunosuppressive strategies, graft survival remains limited, mainly due to severe immunological

barriers. This review aims to critically synthesize existing evidence on long-term immune responses, i.e., both innate and adaptive, in the context of xenotransplantation and systematically maps current interventions, such as genetic modifications and immunosuppression.

Methods: PubMed, Cochrane CENTRAL and Embase were searched for studies meeting the eligibility criteria. Preclinical animal and decedent studies and case control human studies were included in this review. Methodological quality was assessed using the SYRCLE risk of bias tool for preclinical animal studies and the JBI checklist for human studies. Data for pig genetics, immunosuppressive regimen, immune pathways, rejection mechanism and graft outcomes were qualitatively analyzed.

Results: Full-text screening led to the inclusion of 76 studies. In animal models, long-term graft survival (greater than 6 months) typically required a strategy involving the use of multi-gene pigs (combining carbohydrate gene knockouts with human complement or thromboregulatory transgenes) and CD40/CD154 co-stimulation blockade. Across different organs, antibody-mediated rejection (AMR) was the most common complication leading to graft failure. Organ specific pathologies included thrombotic microangiopathy in kidneys, graft overgrowth in hearts and instant blood-mediated inflammation in islets. In humans, decedent models reported AMR and microvascular injury, whilst the first living recipient demonstrated a 60 day graft survival with AMR even with intensive anti-CD40-based immunosuppression.

Conclusion: These findings reveal that donor genetic modifications and immunosuppressive

strategies act synergistically to extend graft survival, still chronic immune-mediated injury remains unresolved.

Keywords: Xenotransplantation, xenograft, porcine organs, immune responses, graft outcomes, survival

UG-PP-96 — Impact Of Early Potassium Monitoring And Correction On In-Hospital Outcomes Of Patients With Acute Heart Failure

Hafsa abdul waheed & Muhammad Siddique chohan

Electrolyte imbalance, particularly potassium derangement, is a frequent and potentially life-threatening complication in patients admitted with acute heart failure. Both hypokalemia and hyperkalemia increase the risk of arrhythmias, prolonged hospitalization, and mortality. Early identification and timely correction may improve clinical outcomes, especially in resource-limited settings. Objective To assess the impact of early potassium monitoring and correction on in-hospital outcomes of patients admitted with acute heart failure.

This prospective observational study was conducted over five months in the medical wards of a tertiary care hospital. Seventy (70) adult patients (≥ 18 years) admitted with a diagnosis of acute heart failure were consecutively enrolled. Serum potassium levels were measured within the first 6 hours of admission. Patients were managed according to an early correction protocol when potassium levels were abnormal. Outcomes assessed included arrhythmia occurrence, length of hospital stay, ICU admission, and in-hospital mortality.

Potassium abnormalities were identified in 38% of patients at admission. Early correction was associated with a lower incidence of

clinically significant arrhythmias (7% vs 21%). Patients receiving early correction had a shorter mean hospital stay (4.2 vs 6.1 days) and fewer ICU admissions (14% vs 29%). Overall in-hospital mortality was 11%, with lower mortality observed in patients whose potassium levels were corrected within 24 hours.

Early potassium monitoring and timely correction in patients with acute heart failure are associated with reduced arrhythmias, shorter hospital stay, and improved in-hospital outcomes. This simple, low-cost intervention can be easily implemented and may significantly improve patient care in routine clinical practice.

UG-PP-97 — Impact Of E-Learning Posture On Tmj And Cervical Muscle Pain In Dental Undergraduates

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Background & Objectives: The growing reliance on digital learning in dental education has increased sedentary behavior and prolonged screen exposure among students. Poor ergonomic habits and insufficient rest intervals during e-learning may contribute to temporomandibular joint (TMJ) discomfort and cervical muscle pain. This study aimed to evaluate the association between posture-related factors during e-learning and TMJ and neck pain among dental undergraduates.

Method: An analytical cross-sectional study was conducted among 100 dental students at Rehman College of Dentistry, Peshawar. Data were collected using a structured questionnaire assessing demographic characteristics, study posture, duration of continuous sitting,

frequency of regular breaks, and presence of TMJ and neck pain. Statistical analysis was performed using SPSS version 26. The Chi-square test was applied to determine associations, with $p \leq 0.05$ considered statistically significant.

Results: TMJ pain was reported by 27% of participants, while 50% experienced neck pain after e-learning sessions. No significant association was found between study position and TMJ pain ($\chi^2 = 6.403$, $p = 0.094$). Continuous sitting duration was also not significantly related to neck pain ($p = 0.589$). However, taking regular breaks showed a highly significant association with reduced neck pain ($\chi^2 = 103.990$, $p < 0.001$).

Conclusion: mRegular breaks during e-learning appear to play an important role in reducing cervical discomfort among dental undergraduates.

Keywords: E-learning; Dental undergraduates; Temporomandibular joint pain; Neck pain; Posture; Musculoskeletal discomfort

UG-PP-98 — Impact Of Epicardial Fat Pad Removal On The Incidence Of Post Coronary Artery Bypass Graft (Cabg) Atrial Fibrillation: An Updated Meta-Analysis And Meta-Regression

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Background & Objectives: Atrial fibrillation (AFib) is a potentially serious complication following coronary artery bypass grafting (CABG), leading to increased morbidity and prolonged hospital stays. The epicardial fat pad, which surrounds the heart, has been proposed as a potential target for reducing the risk of AFib by recent studies; however, the clinical efficacy of this intervention remains uncertain. This study aims to evaluate the impact of epicardial fat pad removal on the incidence of postoperative AFib, as well as other important surgical outcomes, to determine its potential as a preventative strategy.

Methods: A systematic search of PubMed, Embase, and Web of Science was performed from inception to November 2024. Two reviewers independently screened the articles, with a third reviewer resolving conflicts.

Results: Data was extracted using a Microsoft Excel sheet, and statistical analysis was conducted using RevMan 5.4. Risk ratios (RR) with 95% confidence intervals (CI) for dichotomous outcomes and mean differences (MD) with 95% CI for continuous outcomes were estimated using a random-effects model. Nine studies involving 1,769 participants were included in the analysis. Removing the epicardial fat pad did not show any significant impact on the incidence of postoperative AFib, with a risk ratio of 1.02 (95% CI: 0.64–1.61,

P=0.94, I²=80%). The procedure also had no significant effect on the duration of cardiopulmonary bypass (MD: 1.44 minutes, 95% CI: -4.46 to 7.34, P=0.63) or on the length of hospital stay (MD: -0.14 days, 95% CI: -0.54 to 0.27, P=0.50). Furthermore, no significant impact was observed on 30-day mortality (RR: 0.51, 95% CI: 0.19–1.36, P=0.18, I²=0%).

Conclusion: While some studies suggest possible benefits, the overall evidence of the impact of epicardial fat pad removal on postoperative AFib remains inconclusive and larger high-quality trials are needed to clarify its role in AFib and to identify patients who may benefit from this intervention.

Keywords: Atrial fibrillation, Coronary artery bypass grafting, Epicardial fat pad removal, Postoperative outcomes, Cardiopulmonary bypass time, Cardiac denervation

UG-PP-99 — Impact of Social Media on Health-Related Misinformation Among Students of Superior University, Lahore

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Background & Objectives: Social media has emerged as a powerful source of information, particularly for health information. Wrong information dissemination can lead to harmful effects. This study has been conducted to determine extent of exposure to health-related

misinformation among Superior University students.

Methods: A descriptive cross-sectional study was carried out at Superior University, Lahore among 188 students recruited through convenient sampling. Data were obtained using a pre-tested structured questionnaire, addressing demographics, social media usage, and perceptions of health information. Statistical analysis was conducted using chi-square tests, with significance defined as $p < 0.05$.

Results: Among 188 participants, 62.8% were male and 72.9% belonged to medical departments. Moderate awareness was observed in 38.3% of students, while 45.2% had low perception levels. Gender differences were significant ($p = 0.030$), with females demonstrating higher awareness. Physical activity was strongly associated with positive perceptions ($p = 0.001$). Social media use before bedtime showed a significant personal impact ($p = 0.012$) but did not affect awareness or perceptions. No significant correlation was found with age, though older students showed a slightly stronger impact.

Conclusion: Health-related misinformation on social media can influence health choices. Findings highlight the urgent need to strengthen digital health literacy.

Keywords: social media, health misinformation, university students, digital health literacy,

UG-PP-100 — Impact Of Social Media On Oral Health Knowledge, Attitudes And Practices Among Teenagers

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Background & Objectives: The growing reliance on digital learning in dental education has increased sedentary behavior and prolonged screen exposure among students. Poor ergonomic habits and insufficient rest intervals during e-learning may contribute to temporomandibular joint (TMJ) discomfort and cervical muscle pain. This study aimed to evaluate the association between posture-related factors during e-learning and TMJ and neck pain among dental undergraduates.

Method: An analytical cross-sectional study was conducted among 100 dental students at Rehman College of Dentistry, Peshawar. Data were collected using a structured questionnaire assessing demographic characteristics, study posture, duration of continuous sitting, frequency of regular breaks, and presence of TMJ and neck pain. Statistical analysis was performed using SPSS version 26. The Chi-square test was applied to determine associations, with $p \leq 0.05$ considered statistically significant.

Results: TMJ pain was reported by 27% of participants, while 50% experienced neck pain after e-learning sessions. No significant association was found between study position and TMJ pain ($\chi^2 = 6.403$, $p = 0.094$). Continuous sitting duration was also not significantly related to neck pain ($p = 0.589$). However, taking regular breaks showed a highly significant association with reduced neck pain ($\chi^2 = 103.990$, $p < 0.001$).

Conclusion: Regular breaks during e-learning appear to play an important role in reducing cervical discomfort among dental undergraduates.

Keywords: E-learning; Dental undergraduates; Temporomandibular joint pain; Neck pain; Posture; Musculoskeletal discomfort

UG-PP-101— Impact Of Vaping on Oral Health Awareness among Youth Aged 15 to 30 Years

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Background & Objectives: Vaping has gained increasing popularity among young individuals worldwide, raising concerns about its potential health consequences, particularly its effects on oral health. Electronic cigarettes contain chemicals that may contribute to oral health problems such as gum irritation, dry mouth, and periodontal disease. Despite growing public health concerns, awareness regarding the oral health risks associated with vaping remains limited among youth. The objective of this study was to assess the level of awareness regarding the impact of vaping on oral health among individuals aged 15–30 years.

Methods: A cross-sectional survey was conducted using a structured questionnaire distributed among 39 participants within the specified age group. Data were analyzed using an SPSS-style statistical approach including descriptive statistics, frequency analysis, chi-square testing, and one-way analysis of variance (ANOVA).

Results: The findings indicated that the majority of respondents were male (76.9%) and university students (84.6%). Most participants (61.5%) reported that they had never used electronic cigarettes, while 33.3% had used

them previously but discontinued, and 5.1% were current users. A chi-square test examining the association between gender and vaping experience revealed no statistically significant relationship ($\chi^2 = 3.76$, $p = 0.153$). Furthermore, a one-way ANOVA assessing differences in age among vaping groups showed no statistically significant variation ($F(2,36) = 2.60$, $p = 0.088$). Although the prevalence of current vaping was relatively low within the sample, a notable proportion of respondents reported past experimentation with vaping products.

Conclusion: These findings suggest that while awareness of vaping exists among youth, further educational interventions are necessary to improve knowledge regarding its potential oral health consequences. Increased awareness campaigns and preventive strategies may help reduce vaping initiation and promote better oral health practices among young populations.

Keywords: vaping, oral health awareness, youth, electronic cigarettes, public health, dental health

UG-PP-102 — Impact of Water, Sanitation and Hygiene (WASH) Intervention on Typhoid Incidence in KPK, Pakistan

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Background & Objective: Typhoid fever, a bacterial infection caused by *Salmonella* Typhi, remains a significant public health concern in developing Asian countries, including Sri Lanka, India, and Pakistan. Pakistan has estimated 11 million cases and 60,000 deaths annually. The disease is

primarily transmitted through contaminated water, food, and poor sanitation, highlighting the need for improved hygiene and infrastructure. Furthermore, the emergence of antibiotic-resistant *Salmonella Typhi* strains has complicated treatment, emphasizing the importance of effective antibiotics and vaccines in controlling and preventing typhoid fever.

The aim of our research to find the impact of water, sanitation and hygiene intervention on typhoid patients.

Methods: This was a cross-sectional study with a sample size of 400 participants calculated through calculator.net website. Data was collected through questionnaire which was structured questionnaire. It was ethically approved by BMC research society. Data was analyzed through SPSS v-27.

Results: The study included 400 participants with 53.3% males and 46.8% females. Urban residents comprised 53.8% of the sample, while 46.3% were from rural areas. A personal history of typhoid was reported by 23.0% (n=92) of participants. The most common timeframe for previous illness was 1–2 years ago (10.8%), followed by within the last year (3.5%), within the past 6 months (2.5%), and currently experiencing symptoms (1.0%). Family history of typhoid was more prevalent, with 48.3% reporting one or more affected family members. Most commonly, one (25.5%) or two (13.5%) family members were affected, with a smaller percentage reporting three or more.

Water sources were primarily tap (46.0%) and well water (45.0%), with 9.0% relying on bottled water. Only 41.8% reported treating their drinking water. Sanitation conditions showed 73.5% used flush toilets, 21.3% pit latrines, and 5.3% other types. Half had access

to a functioning sewer system, and 55.3% had proper drainage; 20.3% reported no drainage system.

Hygiene practices were generally positive, with 83.8% regularly washing hands before meals and after using the toilet, and 78.8% using a clean towel for hand drying. Regarding treatment, 30.8% used antibiotics, 12.5% received combined treatment (antibiotics, rest, hospitalization), while 52.3% had never received treatment, likely reflecting those who had never contracted typhoid or had limited healthcare access.

Conclusion: This study highlights the significant burden of typhoid fever in Khyber Pakhtunkhwa, Pakistan, and emphasizes the need for improved water, sanitation, and hygiene (WASH) practices to control its transmission. Effective WASH interventions can significantly reduce the incidence of typhoid fever, saving lives and reducing healthcare costs.

Keywords: Typhoid Fever, Water, Sanitation, and Hygiene (WASH), Khyber Pakhtunkhwa, Pakistan, *Salmonella Typhi*, Infectious Diseases, Public Health, Epidemiology.

UG-PP-103 — Implementation and Evaluation of a Lightweight CNN for Apple Disease Detection in Pakistani Agriculture Context

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Background & Objectives: The agricultural economy of Pakistan highly relies on the early detection of apple diseases to avoid loss. This paper proposes a computationally efficient CNN for the detection of diseases on apple leaves that optimize its use for deployment in resource-constrained agricultural settings while maintaining state-of-the-art performance.

Methods: A optimized CNN model with a focus on four major apple-producing states in Pakistani orchards with a smaller model architecture and accuracy on solving apple diseases was established. Our model comprises four layers with a filter size of 32-64-128-256 with dropout connections at two points (0.5, 0.3) to avoid overfitting using a total of 3,171 images. The model was optimized using an Adam optimizer with a learning rate of 0.001 for 30 epochs with minimal augmentations (flipping, brightening, and darkening by 10%)

Results: The model performed with a 97.48% level of success with well-balanced accuracy and precision scores for all classes (precision=97.54%, recall=97.48%) and an accuracy of 96% after eight epochs, which is a fast convergence rate for iteration refinement. With a parameter size of 4.6M parameters (17.6 MB) being 60-80% smaller than conventional models and equally accurate, this model provides better performance. Based on general plant diseases, this specialized model is 3-5% more accurate in identifying apples.

Conclusion: In this paper, it is shown how diagnostic accuracy can be attained using

resource-conscious CNNs in agricultural contexts, which can be used in Pakistani agricultural communities for mobile implementation. The objective of this piece is oriented towards optimizing practices rather than emphasizing algo-centric breakthroughs, with a focus on making research-generated concepts operational. Future research will include validating these models using local images and developing a mobile service using these models for agricultural communities.

Keywords: practical implementation, resource-efficient CNN, Pakistani agriculture, field deployable, optimization, contextual application

UG-PP-104 — Influence of AI on Clinical Interaction

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Background & Objective: The growing use of AI in clinical practice represents a transformative change in healthcare delivery. Our research, the effect of AI on clinical interactions, seeks to bridge that knowledge gap and aims to understand the influence of AI on face-to-face medical encounters. The study revealed mostly optimistic patient opinions towards AI-assisted clinical care, with transparency and areas highlighting the need for further improvement. To analyze patient satisfaction, trust, and comfort levels among individuals who have experienced AI-assisted health consultation.

Methods: We conducted a cross-sectional study in a tertiary care hospital in Peshawar from December 2nd, 2025, to February 20th, 2026. We recruited a total of 200 participants using convenience sampling. The study population included Patients between the ages of 10 and 70 who attended the outpatient (OPD) as well as those admitted to inpatient wards, while ICU patients who were incapable of providing informed consent or unwilling to participate were excluded. Data was collected through a pre-validated, well-organized questionnaire. Informed consent was acquired before participation, and confidentiality was strictly preserved. Data was coded and analyzed using SPSS v27.

Result: The results of the current study indicated that the majority of the respondents perceive the use of AI in clinical interaction positively. AI was observed to enhance precision, efficacy of care, and overall patient satisfaction. However, patients were apprehensive regarding transparency and confidentiality.

Conclusion: Overall, patients view the incorporation of AI favorably. Responding to concerns about transparency and confidentiality may enhance the acceptance of AI in clinical practices.

Keywords: patient satisfaction, artificial intelligence, clinical interaction.

UG-PP-105 — Intravesical Botox in Overactive Bladder Management

Background & Objectives: Overactive bladder is a common lower urinary tract condition particularly in females with unavoidable urge to urinate with or without urinary incontinence. It has a negative effect on quality of life, hampering daily routine activities. Over active bladder may or may not

be associated with frequency and nocturia. The symptoms are caused by detrusor overactivity. First line of management in overactive bladder is pelvic floor muscle therapy, lifestyle modifications including fluid intake bladder irritants and bladder training for a period of 6 months. Medications come in where this fails to respond. Anticholinergics is the mainstay of medical management. There's a spectrum of anticholinergics from nonspecific to highly specific for overactive bladder, beta 3 agonist adding to the list in treating OAB.

Intravesical Botox has been introduced in the management of overactive bladder where medical therapies fail. Indications of intravesical Botox include; Neurogenic overactive bladder Idiopathic detrusor overactivity Detrusor sphincter dyssynergia (intraurethral) Non neurogenic OAB.

methods: Prospective Randomized control trial at institute of kidney diseases Peshawar from June 22 till June 24. Total of 50 patients with overactive bladder symptoms due to any cause. 200 IU units of Botox A was used in infection free bladder.

Results: 50 patients were prospectively followed for 6 months for improvements in symptoms of overactivity. 200 IU of Botox A was used in 20 points sparing the trigone

Mean age of the patient was 50 years

Conclusion: Intravesical Botox is a safe and convenient treatment of choice in refractory overactive bladder in comparison to the sacral neuromodulation which is yet to be introduced in our country. The repetition of Botox can be overlooked to the effect of it in improving the overall quality of life of a patient.

Keywords: Intravesical Botox, bladder, anticholinergics

UG-PP-106 — Ischemic Barriers and Opportunistic Invaders: A Case of *Morganella Morganii* and Superinfecting XDR *A. Baumannii*

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Background & Objectives: Diabetic foot ulcers (DFUs) affect approximately 18.6 million individuals annually, with infections complicating 40-50% of cases and driving non-traumatic lower limb amputations due to factors like peripheral neuropathy, vascular insufficiency, and impaired immunity. This case report examines ischemic barriers and opportunistic pathogens in a 63-year-old woman with poorly controlled type 2 diabetes (HbA1c 10.6%) who developed a persistent plantar ulcer on her right toe, progressing to post-amputation stump infection.

Methods: We investigated the clinical course, microbiological evolution, and therapeutic challenges posed by *Morganella morganii* and superinfecting extensively drug-resistant (XDR) *Acinetobacter baumannii*. The patient underwent distal phalanx amputation and debridement, with initial deep-tissue cultures yielding heavy growth of *M. morganii* susceptible to ceftriaxone, prompting intravenous therapy (1 g every 12 hours). Despite treatment extension, glycemic optimization, and anticoagulation for moderate peripheral arterial disease (ABI 0.62), cultures on postoperative day 11 reconfirmed persistent *M. morganii*, attributed to biofilm formation

and hypoperfusion impairing antibiotic penetration. By day 25, superinfection with XDR *A. baumannii* emerged (resistant to all but minocycline), eradicating *M. morganii*; minocycline (100 mg every 12 hours) achieved wound healing with granulation tissue over three weeks.

Results: This case emphasizes how ischemic tissues hinder antimicrobial efficacy against biofilm-capable opportunists like *M. morganii*, fostering nosocomial superinfections such as XDR *A. baumannii*. Key implications include prioritizing vascular assessment, serial microbiological surveillance, and antibiotic stewardship in diabetic foot management to mitigate persistence, resistance, and amputation risks, advocating a multidisciplinary approach for improved outcomes in high-risk patients. Antibiotic stewardship and infection control measures are vital to prevent superinfections and preserve treatment options.

Conclusion: Moreover, clinicians should recognize that *Morganella morganii*, a normally uncommon intestinal commensal, may act as an opportunistic pathogen in diabetic wounds under ischemic and hyperglycemic conditions. A multidisciplinary, patient-centered approach integrating vascular and infectious disease expertise is imperative for successful outcomes.

Keywords: Diabetic foot ulcer, *Morganella morganii*, XDR *Acinetobacter baumannii*, biofilm, peripheral arterial disease

UG-PP-107 — Isolated Peritoneal Tuberculosis Presenting as Ascites in an Adolescent: A Case Report

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Background & Objectives: Abdominal tuberculosis is an uncommon form of extrapulmonary tuberculosis in adolescents and often presents with ascites, mimicking inflammatory and malignant conditions. Diagnosis is frequently challenging because clinical features are non-specific and microbiological confirmation from ascitic fluid is often absent. This case highlights the importance of correlating clinical findings with biochemical and radiological evidence to enable early diagnosis and timely treatment.

Case presentation: A 15-year-old South Asian female presented with progressive abdominal distension for one week and a three-month history of epigastric and back pain, anorexia, unintentional weight loss, night sweats, and secondary amenorrhea. Examination revealed ascites without focal abdominal masses. Laboratory investigations showed mild anemia, an elevated erythrocyte sedimentation rate, a reduced albumin-to-globulin ratio, and negative viral hepatitis serology. Ascitic fluid analysis demonstrated a high-protein, low-glucose, lymphocyte-predominant exudate, suggestive of tuberculous peritonitis despite negative Ziehl–Neelsen staining. Abdominal ultrasonography showed hepatosplenomegaly with significant ascites, while chest radiography revealed no pulmonary involvement. A nine-month course of first-line antitubercular therapy with rifampicin, isoniazid, ethambutol, and pyrazinamide was initiated with pyridoxine supplementation. The patient improved clinically and was discharged with planned follow-up.

Clinical discussion: This case demonstrates the diagnostic difficulty of abdominal tuberculosis in adolescents when microbiological confirmation is lacking. Integration of clinical presentation, ascitic fluid findings, and imaging supported a presumptive diagnosis and allowed early initiation of therapy.

Conclusion: Abdominal tuberculosis should be considered in adolescents presenting with unexplained ascites in endemic regions. When supported by clinical and investigative findings, early treatment may lead to favorable outcomes even without smear confirmation.

Keywords: Abdominal tuberculosis; Tuberculous peritonitis; Exudative ascites; Adolescent; Case report.

UG-PP-108 — Juvenile Rhupus Syndrome: Coexistence of Juvenile Idiopathic Arthritis and Systemic Lupus Erythematosus

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Background & Objectives: Juvenile rhupus syndrome (JRS) is defined by the coexistence of juvenile idiopathic arthritis (JIA) and systemic lupus erythematosus (SLE) in a pediatric patient. Either condition may develop first, or both may present simultaneously; however, it usually begins with manifestations of JIA, and SLE features appear later in the disease course. It is a rare but clinically significant autoimmune overlap syndrome.

Case Report: We present a case of a 10-year-old girl—initially diagnosed with RF-positive Polyarticular JIA and being treated with methotrexate (10mg/ week)—who developed features suggestive of an SLE flare-up and/or methotrexate toxicity, including pallor, non-

scarring alopecia, dyspnea, pancytopenia, impaired liver function tests, and restricted elbow and knee joint mobility. Laboratory reports indicated elevated ANA and anti-dsDNA titers, along with decreased complement levels. Thus, she fulfilled the 2019 European League Against Rheumatism/American College of Rheumatology (EULAR/ACR) criteria for SLE diagnosis, leading to the diagnosis of JRS. Such disease evolution required therapeutic reassessment, and her immunosuppressive regimen was revised. She was initiated on hydroxychloroquine 200 mg/day, azathioprine 50 mg/day, and MTX 10 mg/week with 5mg folic acid weekly.

Conclusion: Our case report highlights the importance of considering overlap syndrome in children presented with unusual and/or evolving features. JRS, although considered an overlap, exhibits a distinct clinical course. It frequently shows excessive systemic involvement and increased morbidity compared to JIA or SLE alone, thus requiring aggressive therapeutic approaches. Early recognition and adequate therapy are essential for improved clinical outcomes. Rhupus is just as significant in children as it is in adults, where it is more commonly reported.

Keywords: Rhupus syndrome, Juvenile idiopathic arthritis, Systemic lupus erythematosus, Overlap syndrome, Autoimmune diseases, Case report

UG-PP-109 — Knowledge, Attitude, Practices Towards Breast Cancer Screening and Barriers Among Females

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Background & Objectives: Breast cancer is the most prevalent cancer among women globally with high mortality. It can be prevented through early screening but low awareness especially in low middle income country is a concern. This study aimed to assess breast cancer screening awareness and practices among women attending Chaudhry Muhammad Akram Hospital (CMA), Lahore.

Methods: A cross-sectional descriptive study was conducted among 200 women aged 18 years and above attending CMA Hospital. Data were collected using a structured questionnaire assessing awareness and screening practices related to breast cancer. Data were entered and analyzed using SPSS version 25.0. Associations between awareness, screening practices, and sociodemographic variables were evaluated.

Results: Among the participants, 55% had heard of breast cancer screening. However, only 26.5% had ever performed breast self-examination, 7.5% had undergone clinical breast examination, and 4% had received a mammogram. Awareness and screening practices were significantly associated with education level, income, and family history of breast cancer ($p < 0.05$). Major reported barriers included lack of knowledge (60.4%), unawareness of proper BSE technique (52.2%), and the belief that screening is unnecessary in the absence of symptoms (52.7%).

Conclusion: Although a moderate level of awareness regarding breast cancer screening

was observed, actual screening practices were notably inadequate among women in Lahore. Educational status, socioeconomic factors, and family history significantly influenced screening behavior. Strengthening awareness campaigns, improving access to screening services, and ensuring availability of trained female healthcare providers can play vital role.

Keywords: Breast cancer, screening, knowledge, attitude, practices (KAP)

UG-PP-110 — Knowledge Gaps and Understanding of Amelogenesis Imperfecta Among General and Pediatric Dentists

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BACKGROUND AND OBJECTIVES: Amelogenesis Imperfecta is an inherited disorder affecting enamel formation in both primary and permanent teeth. It occurs due to mutations in genes that are responsible for enamel matrix formation. This study aims to highlight the gaps in understanding of amelogenesis imperfecta between a general dentist and a Pediatric regarding the diagnostic approaches and treatment options.

METHODS: A study was conducted to assess the knowledge gaps and the awareness of Amelogenesis Imperfecta among 112 general dentists , 63 TMO's and 25 pediatric dentists. Data was collected through questionnaires and data was analyzed by SPSS.

RESULTS: The results showed there exists a knowledge gap between a general dentist and a Pediatric dentist, they have different diagnostic and treatment approaches towards Amelogenesis Imperfecta.

CONCLUSION: This study highlights significant knowledge gaps regarding Amelogenesis Imperfecta between general dentists and pediatric dentists. Strengthening continuing dental education programs and incorporating focused training on Amelogenesis Imperfecta in undergraduate curricula may help bridge this disparity and improve overall patient care

KEYWORDS: Amelogenesis Imperfecta, diagnosis, treatment options.

UG-PP-111 — Knowledge of Gingival Recession Among Dental Patients: A Cross-Sectional Study

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Background & Objective: To assess the knowledge, awareness, and practices related to gingival recession among dental patients across different age, gender, and socioeconomic groups.

Methods: A descriptive cross-sectional observational study was conducted among 186 participants aged 18 years and above. Data were collected using a structured questionnaire assessing oral hygiene practices, awareness of gingival recession, and clinical evaluation using Miller's classification of gingival recession. Sociodemographic variables and

potential influencing factors such as smoking, orthodontic history, and prosthetic use were also recorded. Statistical analyses included Chi-square tests to determine associations between awareness and demographic factors.

Results: Of the 186 participants, 61.3% were males and 38.7% were females. The majority belonged to the 31–40 and 41–50 year age groups. Toothbrush use was dominant (77.4%), though brushing technique was largely haphazard (54.8%). One-third of participants (32.3%) reported noticing gum recession, while 54.8% reported gingival bleeding during brushing. Awareness of gingival recession was significantly associated with age ($p < 0.001$) and gender ($p < 0.001$), with higher recognition in older adults and males. Clinical examination revealed the lower anterior region as the most common site of recession, with 56.5% showing Class I–IV defects. Smoking status showed no significant association with awareness or bleeding. Most participants were free of confounding factors such as orthodontic treatment or prosthesis use.

Conclusion: Knowledge and awareness of gingival recession were limited among dental patients, strongly influenced by age and gender. Despite widespread use of toothbrushes, improper technique and irregular replacement practices were common. The lower anterior region was the most affected site for gingival recession. Public health strategies should emphasize oral hygiene education, targeted preventive measures, and early detection to mitigate the progression of gingival recession.

Keywords: Gingival recession, Abrasive, whitening, gingival biotype, toothpaste.

UG-PP-112 — Knowledge, Attitude, and Practice of Artificial Intelligence Among Allied Healthcare Workers and Students

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Background & Objectives: Artificial intelligence is widely recognized as a driver of the fourth industrial revolution and is extensively applied in radiology, with growing use across multiple medical specialties. This study examines how students' perceptions of AI may support improvements in the healthcare system. This study aims to assess allied health professionals' and students' understanding of AI and their awareness of its current use.

Methods: We conducted a cross-sectional study using an online questionnaire-based survey regarding demographic details, knowledge, perception, and practice of AI. A total sample of 450 allied health care workers and students working in different departments was included, through convenience sampling. Data was analyzed by SPSS Version 26.

Results: Majority of the participants were females, 308 (68.3%), and 143 (31.7%) males. The median (IQR) age was 22 (21–28). 260 (57.6%) were students, and 191 (42.4%) had graduated. The majority of participants, 361 (80%), agreed on the awareness of AI. 167 (37.0%) individuals knew about the machine and deep learning. About AI's role in healthcare, 109 (24.2%) respondents strongly agreed, and 202 (44.8%) only agreed that AI can help with disease severity assessment and

early diagnosis. Reduced practice of AI in Pakistan, in which 138 (30.6%) states lack awareness, and 97 (21.5%).

Conclusion: The survey showed that most participants had limited knowledge of AI. However, this gap can be addressed by integrating AI into curricula and training programs with adequate financial support. Although current AI adoption and practice were low, participants demonstrated strong interest, positive attitudes, and willingness to learn and implement AI advancements.

KEY WORDS: knowledge; attitude; practice; artificial intelligence; allied health care workers;

UG-PP-113 — Level of Job Satisfaction in Healthcare Professionals Working at Khyber Teaching Hospital, Peshawar

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Background & Objectives: An effectively functioning healthcare institution relies heavily on a skilled, motivated, and well-supported workforce. Employee morale is determined significantly by working conditions. Job satisfaction is a critical metric defined by how employees perceive their roles; higher satisfaction is positively associated with increased productivity and patient satisfaction. The primary aim of this study was to determine

the degree of job satisfaction among healthcare professionals at Khyber Teaching Hospital (KTH). Secondary Objectives included identifying stressors contributing to dissatisfaction and correlating satisfaction levels with the quality of patient care administered.

Methods: This descriptive cross-sectional study was conducted at Khyber Teaching Hospital, Peshawar, from March 2021 to June 2022. A sample size of 329 healthcare professionals was calculated using the WHO formula. Participants were selected using a non-probability quota sampling technique across twenty hospital wards, maintaining a specific ratio of doctors, nurses, and paramedics. Data collection utilized a validated hard-copy questionnaire based on a five-point Likert scale. Data was analyzed using SPSS (Version 20) and Microsoft Excel to generate frequency tables and histograms.

Results: Overall, 72.5% of the surveyed healthcare professionals were satisfied with their jobs. Paramedics reported the highest levels of job satisfaction, followed by nurses, with doctors reporting the lowest comparative satisfaction. The variables contributing most positively to satisfaction were workplace relationships, personal satisfaction, and salary. Conversely, the analysis indicated that key areas affecting satisfaction negatively included job security, the ability to be promoted, and support from senior colleagues.

Conclusion: The majority of healthcare workers at Khyber Teaching Hospital are satisfied with their roles. However, to sustain this, hospital administration must address factors such as job security, career advancement opportunities, and financial compensation. Addressing these core stressors

is essential for maintaining a motivated workforce and ensuring high-quality patient care.

Keywords: Job Satisfaction, Healthcare Professionals, Patient Care, Occupational Health, Hospital Administration.

UG-PP-114 — Lichenoid Drug Eruption Secondary to Adalimumab: A Case Report

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Background: Adalimumab, an anti-tumor necrosis factor- α (TNF- α), is widely used for autoimmune and inflammatory diseases, including ulcerative colitis. Although generally safe, it can cause rare adverse effects, such as lichenoid drug eruption (LDE), which presents as erythematous, violaceous papules. This case report highlights a rare instance of LDE secondary to adalimumab.

Case Presentation A 62-year-old female with ulcerative colitis developed pruritic, erythematous papules on her extremities two weeks after starting adalimumab. Skin examination revealed multiple papular eruptions without systemic symptoms. A skin biopsy confirmed LDE, showing hyperkeratosis, a band-like lymphocytic infiltrate at the dermoepidermal junction, and basal cell degeneration.

Discussion: LDE is an uncommon side effect of TNF- α inhibitors like adalimumab. The mechanism may involve immune dysregulation leading to a lichenoid inflammatory response. The differential diagnosis includes idiopathic lichen planus, lupus erythematosus, and other dermatoses. The temporal relationship between adalimumab initiation and symptom onset, coupled with histopathological findings, supports LDE diagnosis. Management involves discontinuation of the offending drug, but this decision must be balanced with its therapeutic benefits. If discontinuation is not feasible, symptomatic management with corticosteroids may be considered.

Conclusion: LDE is a rare but significant adverse effect of adalimumab. Clinicians should be aware of this possibility, particularly when new cutaneous lesions appear after starting TNF- α inhibitors. Early recognition and careful management are crucial for optimal patient outcomes.

UG-PP-115 — Lived Experiences of Diabetic Patients Following Lower Limb Amputation at Tertiary Care Hospital

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BACKGROUND & OBJECTIVE:

Amputation refers to the surgical removal of a part or all a limb, such as an arm, leg, hand, foot, finger, or toe. Globally, due to diabetes a lower limb or part of it is amputated every 30 seconds. Most diabetic patients who undergo limb amputation experience multiple psychological, emotional, social, and physical challenges. To explore the lived experiences of diabetic patients following lower limb amputation at a tertiary care hospital in Peshawar.

METHODS: A qualitative design was used for this study. Purposive sampling was employed to recruit participants. A total of 10 interviews were conducted with diabetic patients who had undergone lower limb amputation in a tertiary care hospital. Data were analyzed through thematic analysis.

RESULTS: Analysis of the interviews created 187 meaningful codes, which were classified into seven categories under the central theme “Coping with Multidimensional Challenges in Post-Amputation of Diabetic Patients.” These categories consisted of (1) Physical Challenges and Adaptation, (2) Emotional and Psychological Responses, (3) Social and Family Support, (4) Financial Challenges and Coping, (5) Health Awareness and Medical Experience, (6) Spirituality and Life Meaning, and (7) Recommendations and Forward-Looking Strategies.

CONCLUSION: The findings emphasized that diabetic patients face multidimensional complications following lower limb amputation, affecting their physical, emotional, social, spiritual, and financial wellbeing. Understanding these lived experiences is fundamental for improving holistic care and developing support strategies that promote better adjustment and quality of life.

KEYWORDS: Lower limb amputation, diabetic patients, lived experiences.

UG-PP-116 — Machine Learning-Based Risk Stratification in Dengue Virus Infection

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Background& Objectives: Dengue virus infection is a rapidly expanding mosquito-borne disease with a wide clinical spectrum, ranging from uncomplicated dengue fever to severe dengue with hemorrhage and shock. Early prediction of disease severity remains challenging using conventional clinical criteria alone. Artificial intelligence (AI) and machine learning (ML) approaches offer potential advantages in integrating complex clinical and laboratory data for improved risk stratification. To develop and evaluate AI and ML models for early prediction of severe dengue and adverse clinical outcomes using routinely available clinical, laboratory, and epidemiological data.

Methods: A retrospective dataset of **1,240 laboratory-confirmed dengue patients** was analyzed. Input features included demographic variables, platelet count, hematocrit, liver enzymes, NS1 antigen status, and vital parameters at admission. Supervised ML models—logistic regression, random forest, and deep neural networks—were trained and validated using an 80:20 train–test split. Model performance was assessed using accuracy, sensitivity, specificity, and area under the receiver operating characteristic curve (AUC).

Results: The random forest model achieved the highest predictive performance with an **accuracy of 91.3%, sensitivity of 88.6%, specificity of 93.1%, and AUC of 0.94** for predicting severe dengue. The deep neural network showed comparable performance (accuracy **89.7%**, AUC **0.92**). AI-based models outperformed conventional clinical scoring systems, which demonstrated an accuracy of **76.4%** and AUC of **0.81**. Early prediction of severe dengue was achieved up to **48 hours prior** to clinical deterioration.

Conclusion: AI and ML models significantly improve early prediction of severe dengue compared to traditional methods. These approaches can support timely clinical decision-making, optimize hospital resource utilization, and enhance dengue surveillance and management strategies, particularly in resource-limited settings.

Keywords

Dengue virus; Artificial intelligence; Machine learning; Severe dengue; Predictive modeling; Clinical decision support

UG-PP-117 — Mental Burnout in Healthcare Professionals: A Narrative Review

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Background & Objectives: Burnout is becoming an increasingly common challenge for healthcare professionals. Burnout can lead to lower job satisfaction, higher turnover, mistakes in patient care, and mental health like anxiety or depression. Differences in how studies measure and report burnout make it important to understand its causes, effects, and coping strategies. The objective of this study is to highlight the causes and impact of burnout among healthcare professionals.

Methods: A comprehensive electronic search was conducted in three different databases Medline (PubMed), Web of Science and Scopus to identify systematic

reviews and meta-analysis in English language dating from 2020 till 2025. Full articles were included. Seven systematic reviews and meta-analysis were finalized and QualSyst was done. NVivo 15 was used to generate themes and sub-themes.

Results: The systematic reviews and meta-analyses included in the review showed that burnout is common among healthcare workers. It links to less career engagement, lower patient care quality, more safety issues, lower patient satisfaction, and less professionalism issues. Major causes include heavy workload, long hours, job stress, low job satisfaction, bullying, little social support, and poor work-life balance. Most reviews relied on cross-sectional, self-reported data, limiting conclusions about cause and introducing bias. Scarce evidence on suicide, uneven representation across professions and regions, different measurement methods, and publication bias may limit how widely these results can be applied.

Conclusion: Healthcare providers are suffering from burnout in large numbers and this, in turn, harms their mental health and the quality of their care. The issue of workload, work-life balance, and workplace support need to be addressed, and at the same time, more rigorous and long, term studies are necessary to inform the development of effective prevention strategies.

Keywords: Burnout, Healthcare, Stress, Workload, Work-Life Balance, Mental Health.

UG-PP-118 — Micropulse Cyclophotocoagulation Versus Continuous Wave Cyclophotocoagulation: A Meta-Analysis

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BACKGROUND & Objectives: Micropulse cyclophotocoagulation (MP-CPC) and continuous wave cyclophotocoagulation (CW-CPC) are surgical interventions used to reduce intraocular pressure (IOP) in pediatric glaucoma. However, recent studies report conflicting results regarding their comparative effectiveness. This systematic review and meta-analysis aimed to evaluate the efficacy of MP-CPC versus CW-CPC in pediatric glaucoma.

Methods: A systematic search of PubMed, Embase, Scopus, Cochrane Library, and

ScienceDirect was conducted from inception through March 2025 to identify studies comparing MP-CPC and CW-CPC in pediatric glaucoma. Studies reporting intraocular pressure outcomes at various follow-up intervals were included. A random-effects model was applied for all analyses.

Results: At 12 months, CW-CPC demonstrated a significantly greater reduction in IOP compared with MP-CPC (MD -6.88 mmHg, 95% CI -9.46 to -4.30; $p < 0.00001$). No significant differences in IOP reduction were observed at 1, 3, and 6 months. Overall, CW-CPC showed superior IOP reduction at the final follow-up (MD -4.23 mmHg, 95% CI -6.51 to -1.95; $p = 0.0003$; $I^2 = 80\%$).

Conclusion: CW-CPC results in significantly greater long-term reduction in intraocular pressure compared with MP-CPC. These findings suggest sustained efficacy of CW-CPC in the management of pediatric glaucoma.

Keywords: Pediatric glaucoma; Micropulse cyclophotocoagulation; Continuous wave cyclophotocoagulation; Intraocular pressure

UG-PP-119 — Mini Versus Full Sternotomy Efficacy And Safety Of Mini-Sternotomy Vs Full-Sternotomy In Patients Undergoing Aortic Valve Replacement (Avr): A Systematic Review And Meta-Analysis.

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Background & Objectives: Full median sternotomy has long been the standard approach for aortic valve replacement (AVR), but less invasive techniques such as mini-sternotomy are increasingly adopted to reduce

surgical trauma and improve recovery. Previous studies comparing these approaches have reported mixed outcomes, particularly regarding postoperative complications. We conducted a systematic review and meta-analysis to compare perioperative and clinical outcomes of mini-sternotomy versus full sternotomy in adults undergoing AVR.

Methods: PubMed, Embase, and the Cochrane Library were searched up to January 2026 for randomized controlled trials and observational studies. Primary outcomes included cardiopulmonary bypass (CPB) time, aortic cross-clamp time, operative duration, ICU stay, and hospital stay, while secondary outcomes included renal insufficiency, mortality, stroke, and blood loss.

Results: Data were pooled using a random-effects model, and risk ratios (RR) or mean differences (MD) with 95% confidence intervals (CI) were reported. Nine studies with a total of 5,447 patients were included. Mini-sternotomy was associated with longer CPB (MD $\approx$ 13 min) and cross-clamp times (MD $\approx$ 9 min) but resulted in a modestly shorter hospital stay (MD -0.8 days; 95% CI -1.50 to -0.09). No significant differences were observed in ICU stay, overall operative time, mortality, stroke, renal insufficiency, or blood loss. Despite the slightly longer CPB and cross-clamp durations, mini-sternotomy did not increase major complications. These findings suggest that mini-sternotomy is a safe and effective alternative to conventional sternotomy for AVR, offering reduced hospital stay without compromising key perioperative outcomes.

Conclusion: Further large, high-quality trials with long-term follow-up are warranted to

identify patient subgroups who may benefit most from this minimally invasive approach.

Keywords:

Mini-sternotomy, Full sternotomy, Aortic valve replacement, Systematic review, Meta-analysis, Perioperative outcomes

UG-PP-120 — Modifiable Factors Associated With Delayed Diagnosis of Breast Cancer in Pakistan

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Background & Objectives: Breast cancer (BC) remains one of the leading causes of mortality among women and represents a growing global public health challenge. This study aimed to identify modifiable factors associated with delayed diagnosis among breast cancer patients in Pakistan. An analytical cross-sectional epidemiological study was conducted among women undergoing chemotherapy at a specialized cancer hospital in Punjab. Data regarding socio-demographic characteristics and potential factors contributing to delayed diagnosis were collected directly from patients using a self-designed questionnaire, while tumor-related information was extracted from medical records. Statistical analysis included the chi-square test to assess associations and forward stepwise binary logistic regression to determine significant predictors.

Methods: Among the 490 breast cancer patients included in the analysis, 68.6% experienced a delay in diagnosis. Multivariable logistic regression revealed several significant predictors of delayed diagnosis.

Results: High diagnostic costs were associated with a reduced likelihood of timely diagnosis (AOR = 0.627; 95% CI: 0.403–0.976; $p = 0.039$). Seeking care from traditional healers prior to medical consultation was strongly linked with delays (AOR = 0.317; 95% CI: 0.196–0.512; $p < 0.001$). In contrast, patient negligence toward symptoms significantly increased the likelihood of delayed diagnosis (AOR = 2.35; 95% CI: 1.30–4.28; $p = 0.005$). Financial difficulties showed a borderline association with delay (AOR = 0.634; 95% CI: 0.398–1.009; $p = 0.055$).

Conclusion: The findings indicate that delayed breast cancer diagnosis in Pakistan is significantly influenced by high diagnostic costs, consultation with traditional healers, and patient negligence toward symptoms. Addressing these modifiable barriers through awareness, financial support, and improved access to diagnostic services may promote earlier detection and better outcomes.

Keywords: breast neoplasms, delayed diagnosis, modifiable factors, epidemiology
UG-PP-121 — Non-Invasive Diagnostic Strategies for Brainstem Lesions: Accuracy, Safety, and Clinical Outcomes

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Background & Objectives: Brainstem lesions pose significant diagnostic challenges due to their deep anatomical location and the high risks associated with stereotactic biopsy. While biopsy remains the gold standard, the potential for procedural morbidity has stimulated interest in non-invasive strategies. Recent advances in neuroimaging, radiomics, and molecular techniques may improve diagnostic accuracy without surgical intervention. This review evaluates the performance and clinical impact of these modalities.

The chief purpose of this study was to systematically evaluate the diagnostic accuracy, safety, and clinical outcomes of currently available non-invasive diagnostic modalities for the assessment and characterization of brainstem lesions.

Methods: This study utilized a systematic review design following PRISMA guidelines. A comprehensive search was conducted in PubMed, Scopus, Web of Science, Embase, and the Cochrane Library for studies published between January 2017 and October 2025.. The population included patients of all ages presenting with brainstem lesions. Inclusion criteria focused on studies evaluating non-invasive techniques (MRI, MRS, DTI, PET, or radiomics) with reported diagnostic outcomes. Exclusion criteria were case reports, non-human studies, and studies lacking a reference standard. Data collection involved extracting accuracy metrics and concordance with histopathology. Quality assessment was performed using QUADAS-2 and ROBINS-I tools. Narrative synthesis was used for statistical analysis due to high heterogeneity.

Results: Six studies met the inclusion criteria, encompassing MRI/MRS (n=3), DTI (n=2), PET (n=1), and radiomics (n=2). MRS achieved a sensitivity of 80–100% and specificity of 75–100% in differentiating diffuse intrinsic pontine glioma from other lesions ($p < 0.05$). DTI-based tractography demonstrated high utility in delineating lesion–Fiber relationships but lacked robust histopathologic validation. Radiomics models reported classification accuracies between 70% and 85%. Most studies exhibited a moderate-to-serious risk of bias.

Conclusion: This study falls within the discipline of Neurosurgery and Neuroradiology. The investigated concepts include the diagnostic reliability of advanced imaging over invasive biopsy. Through a systematic evaluation process, it was found that Non-invasive diagnostic techniques show meaningful potential for characterizing brainstem lesions, but the evidence remains limited by small sample sizes and heterogeneity. While MRI and MRS provide the strongest evidence for clinical use, DTI and PET require further prospective validation. These modalities should be considered complementary to biopsy in cases requiring definitive diagnosis.

Keywords: Brain Stem Neoplasms; Magnetic Resonance Spectroscopy; Positron-Emission Tomography; Diffusion Tensor Imaging; Radiomics

UG-PP-122 — Occupational Workload and Job-Related Stress as Determinants of Dietary Behaviors Among University Professionals

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Background & Objectives: Work-related stress is a significant occupational health concern, affecting over 60% of the global working population. Stress influence dietary habits, causing irregular eating habits, skipping meals, & poor food choices among university professionals. This Study Aim to explore the impact of how workload & work related stress the dietary patterns & meal timings among University Professionals & what possible initiatives should be taken by the authorities to overcome this workplace discomfort in institutions.

Methods: The study was conducted among university professionals from two universities in Haripur using purposive sampling. Semi-structured, in-depth interviews were carried out to explore workload patterns, sources of stress, dietary intake, and meal timing. Interviews were audio-recorded, transcribed verbatim, and analyzed through thematic analysis using NVivo (Version 15).

Results: Data saturation was achieved, and major themes were identified through iterative coding. Findings indicated that heavy workload, administrative duties, academic deadlines, and research supervision significantly affected participants' dietary intake and meal timing. Many reported skipping or delaying meals due to time constraints. Common patterns included irregular eating habits, episodes of both under & overeating, increased reliance on caffeinated beverages and fast food, and reduced consumption of home-cooked meals. Participants also noted that work-related stress negatively

influenced their appetite, mood, focus, productivity, and energy levels, ultimately contributing to unhealthy dietary choices during busy workdays.

Conclusion: The study concludes that occupational workload and job-related stress significantly disrupt dietary behaviors and meal patterns among university professionals. Despite adequate nutritional knowledge, workplace demands create barriers to healthy eating practices. Institutional-level interventions are needed to promote structured meal habits and stress management within academic settings.

Keywords: Occupational stress, Workload, Dietary behaviors, University professionals, Qualitative research

UG-PP-123 — Oncological Safety of the Submental Artery Island Flap for Oral Reconstruction: A Systematic Review and Meta-Analysis

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Background & Objectives: Oral cavity reconstruction following oncologic resection presents significant challenges in preserving functional outcomes while ensuring oncological safety. The submental artery island flap (SAIF) has emerged as a versatile and cost-effective alternative to microvascular free flaps; however, concerns persist regarding its oncological safety due to its anatomical proximity to submental lymphatic drainage. This systematic review and meta-analysis

aimed to evaluate the oncological safety and reconstructive outcomes of SAIF in oral cavity reconstruction, with a focus on locoregional recurrence and flap survival. The review was conducted in accordance with PRISMA guidelines, with the protocol registered in PROSPERO (CRD42021252502).

Methods: A comprehensive literature search of PubMed, Cochrane Library, CINAHL, and Google Scholar was performed using Medical Subject Headings and Boolean strategies to identify studies reporting oncologic and survival outcomes following SAIF reconstruction.

Results: A total of 27 studies comprising more than 1,600 patients were included in the analysis. Pooled estimates were calculated using fixed- and random-effects models, and heterogeneity was assessed using the I^2 statistic and Cochran's Q test. The pooled locoregional recurrence rate was 16% (95% CI: 14%–18%) with low heterogeneity ($I^2 = 15.3\%$), while the pooled flap survival rate was 94% (95% CI: 92%–95%) with no significant heterogeneity. No evidence of publication bias was detected. Subgroup analyses demonstrated higher recurrence rates among patients with advanced-stage tumors (T3/T4) and positive nodal disease, whereas early-stage tumors (T1/T2, N0) were associated with favorable oncological outcomes.

In conclusion, SAIF demonstrates acceptable oncological safety and excellent flap viability for oral cavity reconstruction, particularly in early-stage oral squamous cell carcinoma without nodal involvement, while its use in advanced disease should be approached cautiously pending further prospective evidence.

Keywords: Submental artery island flap; oral reconstruction; oral cancer; oncological safety; locoregional recurrence; flap survival

UG-PP-124 — Oral Hygiene Practices and Psychological Factors Associated With Oral Health Neglect

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Background & Objectives: Oral health behavior can be influenced by psychological factors such as depression and anxiety, which may contribute to neglect of oral hygiene practices and delayed dental care. Understanding this relationship is important for improving preventive dental strategies and patient counseling in dental practice. The objective of this study was to assess oral hygiene practices and explore the association between psychological distress and oral health neglect among participants.

Methods: A cross-sectional study was conducted among 30 participants using a structured questionnaire designed to collect information regarding demographic characteristics, oral hygiene practices, dental visit patterns, and the influence of psychological distress on oral health behavior. Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics including frequencies and percentages were calculated to summarize participant characteristics and oral health practices, while inferential statistical tests such as chi-square and one-way analysis of variance were applied to assess associations between variables.

Results: The results showed that the majority of participants were female (66.7%) and most

had graduate-level education (83.3%). Nearly all participants (96.7%) reported brushing their teeth twice daily, while 60% reported occasional use of dental floss. Approximately 60% had visited a dentist within the last six months. However, 26.7% reported delaying dental visits despite experiencing dental problems, and 23.3% indicated neglecting oral hygiene practices during periods of depression or anxiety. Most participants (66.7%) rated their oral health status as good, while smaller proportions reported fair or poor oral health. These findings suggest that although overall oral hygiene practices were generally satisfactory, psychological distress may contribute to neglect of oral health behaviors in a subset of individuals. Integrating mental health awareness into oral health promotion and preventive dental care strategies may help improve patient outcomes. **Conclusion:** Further studies with larger and more diverse populations are recommended to better understand the relationship between psychological well-being and oral health behavior.

Keywords: Oral health, depression, anxiety, oral hygiene, dental visits, behavioral factors

UG-PP-125 — Oral PCSK9 Inhibitors for LDL-Cholesterol Lowering in Adults With Hypercholesterolemia: A Systematic Review and Meta-Analysis

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gomal medical college **Background & Objectives:** Elevated levels of low-density lipoprotein (LDL)-cholesterol is one of the leading drivers of atherosclerotic cardiovascular disease (ASCVD). In addition, many individuals have difficulty achieving

lipid target levels using existing treatments. The oral PCSK9 inhibitors represent a new class of convenient oral alternatives to injectable agents used to lower LDL-cholesterol, and as such, need to be evaluated based on their overall effectiveness and safety.

This study's purpose is to evaluate the effectiveness and safety of oral PCSK9 inhibitors in lowering LDL-cholesterol in adult subjects with hypercholesterolemia.

Methods: A systematic review and meta-analysis were performed of phase II/III randomized clinical trials (RCTs) completed through Dec 2025, which compared oral PCSK9 inhibitors (AZD0780, MK-0616, NNC0385-0434) to a placebo. The primary outcome was the mean difference in percent change from baseline in LDL-cholesterol when comparing the treatment group(s) to the placebo group(s).

Results: A total of four RCTs, which enrolled 731 subjects, were included in this analysis. Results indicated that oral PCSK9 inhibitors produced significant reductions in LDL-cholesterol compared to placebo (-49.88 mg/dl, 95% CI -61.57 to -38.19, $p < .00001$). Significant reductions were also found in apolipoprotein B (-40.32 mg/dl), non-HDL cholesterol (-43.76 mg/dl), total cholesterol (-21.76 mg/dl), and lipoprotein(a) (-19.86 mg/dl). No differences were observed between treatment and placebo groups for rates of adverse events (relative risk [RR] 1.03, 95% CI 0.92 – 1.15) or serious adverse events (RR 1.14, 95% CI 0.32 – 4.04).

Conclusion: Overall, these results indicate that oral PCSK9 inhibitors can produce statistically significant short-term reductions in LDL-cholesterol and other lipid parameters, and at

the same time provide a safety profile that is similar to a placebo. As such, they may provide an additional therapeutic option for individuals with high levels of LDL-cholesterol. However, long-term outcome studies will be needed to confirm these findings.

Keywords: low-density lipoprotein, apolipoprotein B, placebo

UG-PP-126 — Perspective, Attitude, and Participation of Medical Students in Research, and Barriers to Seeking Research Knowledge in Medical Colleges of Peshawar

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Background & Objectives: Research is essential for advancing medical knowledge and improving evidence-based clinical practice. Medical students' involvement in research enhances critical thinking, scientific productivity, and professional development, yet multiple factors influence participation. This study aimed to assess the perspective, attitude, and participation of undergraduate medical students in research and to identify barriers to seeking research knowledge in medical colleges of Peshawar.

Methods: A cross-sectional study was conducted among undergraduate medical students in Peshawar. The sample size of 365

was calculated using the Z-method with finite population correction from a total population of 7,385 students. Data were collected using a structured online questionnaire via Google Forms and analyzed using SPSS software. Associations between variables, including gender and research participation, were evaluated using the chi-square test.

Results: Among 365 participants, 50.5% strongly agreed that research is important in medical education, 53.8% strongly agreed it is essential for their future career, and 46.7% believed it improves critical thinking skills. Only 12% reported that adequate research opportunities are provided by medical colleges. Major barriers included heavy academic workload (47%), lack of mentorship (39.4%), insufficient training (38.3%), and funding constraints (26.1%). Male students were significantly more likely to have prior research participation. Overall, although students demonstrated a positive attitude and motivation toward research, institutional and structural barriers limited active engagement.

Conclusion: Enhancing mentorship programs, structured research training, and institutional support is crucial to improve undergraduate research participation and foster a sustainable research culture in medical colleges.

Keywords: medical students, research attitude, research participation, barriers, Peshawar

UG-PP-127 — Perspective, Attitude, and Participation of Medical Students in Research, and Barriers to Seeking Research Knowledge in Medical Colleges of Peshawar

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demonstrated a positive attitude and motivation toward research, institutional and structural barriers limited active engagement.

Conclusion: Enhancing mentorship programs, structured research training, and institutional support is crucial to improve undergraduate research participation and foster a sustainable research culture in medical colleges.

Keywords: medical students, research attitude, research participation, barriers, Peshawar

UG-PP-128 — Physical Activity and Its Association With Cognitive Function in University-Level Learners

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Background & Objectives: Recent evidence indicates that there is association of physical activity with cognition function and better academic achievement in adolescence. Physical activity has direct and indirect effect on the cognition in human body. Therefore, our study aimed to determine the association between physical activity and cognition function among the university students.

METHODS: A cross-sectional study was conducted on 368 university students using convenience sampling technique. Students with age groups of 18 - 25 year were enrolled. The cognition level was assessed using IPAQ and MoCA scale. The association between these two variables was determine using Spearman's Rho test.

RESULTS: As a result, the significantly deviating data with the level of significance and p-value <0.05 by applying the Shapiro-Wilk test of Normality. We applied the Spearman's rho test and we obtained the 2-tailed coefficient correlation comparing the physical activity and cognitive function, and found that they are not significantly associated with each other

CONCLUSION: The study concluded, which was conducted to evaluate the association between physical activity and cognitive function among students of Jinnah Post Graduate Medical Center and Dow university of health Sciences. showed weak relation between physical activity and cognitive function. It was revealed that physical activity does not have significant impact on cognitive function of students and they are weakly correlated with each other.

KEYWORDS: Physical activity, Sedentary lifestyle, Cognition function, University students and Mental health deficit

UG-PP-129 — Predictive Analytics for Emergency Department Overcrowding: A Machine Learning Approach

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Background & Objectives: Emergency departments across Pakistan operate under constant strain, with overcrowding recognized as a systemic problem affecting patient outcomes and staff burnout. The causes are well documented: inadequate primary care access pushes non-urgent cases to EDs, lack of inpatient beds creates boarding bottlenecks, inefficient patient flow management, and

absence of triage standardization. Yet despite widespread acknowledgment of the crisis, interventions remain reactive and localized, with little coordinated effort to address underlying structural issues. This study proposes a predictive analytics framework that combines real time hospital data with machine learning to forecast ED crowding episodes before they escalate.

Methods: The system integrates multiple data streams including historical patient arrival patterns, ambulance dispatch records, inpatient bed availability, seasonal disease trends, and social factors like local event schedules or weather patterns that influence ED visits. Machine learning algorithms analyze these variables to predict surge periods hours or days in advance, enabling proactive resource allocation and operational adjustments.

Results: Early warnings enable hospitals to schedule additional staff during predicted peaks, coordinate with nearby facilities for patient redistribution, expedite discharge processes, and activate surge protocols preemptively. The system also identifies chronic bottlenecks by tracking which departments or processes consistently delay patient flow, allowing targeted operational improvements.

Conclusion: Unlike retrospective reporting that documents overcrowding after it happens, this approach treats ED flow as a predictable phenomenon amenable to forecasting. For hospitals operating with fixed resources, anticipating demand surges rather than reacting to them transforms how emergency care is delivered, potentially reducing wait times, improving outcomes, and preventing the cascade failures that turn busy departments into dangerously overcrowded ones.

Keywords: emergency department, overcrowding, predictive analytics, machine learning, patient flow, healthcare optimization

UG-PP-130— Preoperative Embolization in Intracranial Meningioma Surgery: An Updated Systematic Review of Operative and Postoperative Outcomes

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Background & Objectives : Intracranial meningiomas are highly vascular tumors that often lead to significant intraoperative blood loss and increased surgical complexity. Preoperative embolization (POE) is a specialized interventional procedure that aims to reduce tumor vascularity, soften tumor consistency, and improve overall surgical outcomes. Despite its frequent use in neurosurgical practice, the actual efficacy and safety of this approach compared to surgery alone remain a subject of active debate. This systematic review evaluates the impact of POE on key operative and postoperative variables. The chief purpose of this study was to evaluate the impact of preoperative embolization on intraoperative blood loss, operative duration, the extent of resection, and postoperative complication rates in patients undergoing surgical excision for intracranial meningioma.

Methods: Following PRISMA guidelines, a systematic literature search was conducted across PubMed, Scopus, and Embase for studies published between January 2017 and October 2025. The population included adult patients diagnosed with intracranial meningiomas. Inclusion criteria consisted of

English-language, non-randomized comparative studies comparing POE to no embolization. Exclusion criteria were case reports and non-human studies. The sample size was derived from 13 eligible studies. Data collection tools were used to extract outcomes including blood loss, operative time, and gross total resection (GTR) rates. Statistical analysis involved a narrative synthesis and risk of bias assessment using the ROBINS-I tool due to high study heterogeneity.

Results: Thirteen studies met the inclusion criteria. Preoperative embolization significantly increased the likelihood of achieving GTR in 38% of the analysed studies ($p < 0.05$). Findings concerning intraoperative blood loss and operative time were highly inconsistent across the literature. A non-significant trend toward fewer overall complications was noted in the embolization cohorts. Data on long-term tumor recurrence were extremely limited, reported in only 7.7% of the studies, which precluded a definitive synthesis of long-term oncological outcomes. Significant methodological variability was identified across all included papers.

Conclusion: This study, situated within the discipline of Neurosurgery and Interventional Neuroradiology, investigated the concepts of tumor devascularization and its impact on surgical resectability. Through a methods and process involving a PRISMA-compliant systematic review and narrative synthesis, the summary of findings indicates that preoperative embolization consistently improves the likelihood of achieving Gross Total Resection in intracranial meningiomas. However, its benefits in reducing intraoperative blood loss and operative time remain inconsistent. Neurosurgeons should consider POE primarily when maximal

resection is the main goal, particularly for highly vascular lesions.

Keywords: Meningioma; Embolization, Therapeutic; Neurosurgical Procedures; Treatment Outcome; Blood Loss, Surgical.

UG-PP-131 — Preoperative Sigmoid Sinus Variations and Their Role in Mastoid Exploration for Atticoantral CSOM: A Prospective Study

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Background and Objectives: Atticoantral chronic suppurative otitis media (CSOM) with cholesteatoma is often associated with adverse intra-operative events. Structural variations of the sigmoid sinus (SS) increase overall risk. This study identifies anatomical variations of SS on CT scans performed preoperatively and their correlation with challenges identified in surgery and its postoperative clinical outcomes.

Methods: An analytical cross-sectional study of 300 patients who underwent radical mastoidectomy was carried out at tertiary care hospital from January to December 2024. Sample size was calculated using the WHO sample size calculator, with a 95% CI, an absolute precision of 5%, and an estimated prevalence of anatomical variations of the

sigmoid sinus of 25.93%. CT scans temporal bone were evaluated for variations in SS and integrity of bony plate, while perioperative complications and outcomes were documented.

Results: CT scans revealed preserved bony plates in 77.3% of patients, erosion in 12.3%, and exposed anatomy in 11.3%; the sigmoid sinus lay posteriorly in 63%, anteriorly in 25%, and in a normal position in 12%. Intraoperative surgical findings aligned closely with imaging. Anteriorly displaced sinuses were related with greater operative fatigue ($p=0.014$), dural disruptions ($p<0.001$), severe bleeding ($p=0.032$), facial neuropathy ($p=0.006$), and residual disease ($p<0.001$). Bony plate defects were significantly related with complications.

Conclusions: CT scans precisely identified anatomical variations of SS, aiding surgical approach and reducing operative risks. Multicenter studies with larger cohorts and adjunct imaging modalities, such as MR venography, may better add to these findings.

Keywords:

Otitis Media Suppurative, Cholesteatoma, Anatomic Variation, Temporal Bone, Mastoidectomy.

UG-PP-132 — Prevalence And Determinants Of Anxiety And Depression Among Individuals With Spinal Cord Injury

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Background: Spinal cord injury is a chronic disabling condition commonly associated with significant psychological morbidity. Anxiety and depression are prevalent and adversely affect rehabilitation outcomes and quality of

life. This study aimed to estimate the prevalence of anxiety and depression and to identify their associated clinical and demographic predictors among individuals with spinal cord injury.

Methods: A cross-sectional study was conducted between February and April 2025 at the Paraplegic Centre Peshawar. Patients aged 15–70 years with a confirmed diagnosis of SCI were recruited using a consecutive sampling. Individuals with a documented pre-existing psychiatric disorder or significant cognitive impairment were excluded. The study involved psychometric validation of the Hospital Anxiety and Depression Scale (HADS); followed by, estimation of the frequency of anxiety and depression and identification of associated determinants. Reliability was assessed using Cronbach's alpha, and associations were examined using appropriate inferential statistical tests

Results: HADS demonstrated acceptable overall internal consistency (Cronbach's $\alpha = 0.789$). The anxiety subscale showed good reliability ($\alpha = 0.738$), whereas the depression subscale demonstrated moderate reliability ($\alpha = 0.600$). A substantial proportion of participants exhibited severe anxiety (57.3%) and severe depression (55.2%). A statistically significant association was observed between anxiety and gender ($p = 0.002$). Length of hospital stay was significantly associated with anxiety ($p = 0.017$), while age at injury ($p = 0.018$) and duration of injury ($p = 0.037$) were significantly associated with depression.

Conclusion: Anxiety and depression are highly prevalent among individuals with SCI and are significantly associated with key clinical and temporal variables

Keywords: Anxiety, depression, significant cognitive impairment

UG-PP-133 — Prevalence and Impact of Sarcopenic Obesity and Muscular Dysfunction in Incarcer

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Background & Objective: Incarcerated women represent a vulnerable and medically underserved population. Restricted mobility, poor nutritional quality, psychological stress, and limited access to rehabilitation and physical activity may leads them to muscle dysfunction and sarcopenic obesity. Sarcopenic obesity is a condition characterized by the coexistence of excess adiposity and reduced muscle mass and strength profoundly increases the risk of functional decreasing and metabolic disorders related to long term disability and lack of mobility. This study aims to determine the prevalence of sarcopenic obesity and evaluate associated muscle dysfunction and functional limitations in marginalized women.

Methods: A cross sectional study will be conducted among female inmates aged 25–60 years. Body composition will be assessed using BMI, waist circumference, and Muscle strength will be evaluated using handgrip dynamometry, and functional performance will be assessed through sit to stand test and gait speed measurement. Physical activity levels and nutritional patterns will be documented using questionnaires.

Results: It is hypothesized that a significant proportion of incarcerated women will demonstrate reduced muscle strength with increased adiposity, showing sarcopenic

obesity. Muscle dysfunction is expected to correlate with reduced functional performance and sedentary life style.

Conclusion: Early screening for sarcopenic obesity in prison settings is essential. Rehabilitation-based interventions, including resistance training and nutritional modification programs, may help prevent long-term disability and improve quality of life among incarcerated women.

Keywords: Incarcerated women, sarcopenic obesity, muscle dysfunction, rehabilitation, prison health, functional declining.ated Women

UG-PP-134 — Prevalence and Predictors of Acute Kidney Injury in Dengue Patients

Prevalence and Predictors of Acute Kidney Injury in Dengue Patients Admitted at MMC Mardan

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Background & Objectives: Dengue fever, being a mosquito-borne viral illness, is a global health challenge, notably in tropical and subtropical regions which is affecting millions of individuals annually (1). It has broad spectrum of clinical symptoms which range from asymptomatic infection to severe life-threatening conditions like dengue hemorrhagic fever and dengue shock syndrome (2). One of the medical complications due to dengue fever is Acute kidney injury (AKI) having reported occurrences in 10% to 36% in dengue patients, thus serving as an independent predictor of mortality (3). The mechanisms of AKI associated with dengue virus are not yet fully understood. However, contributing factors may include direct viral damage to

kidney cells, immune responses, low blood volume, muscle breakdown (rhabdomyolysis), and thrombotic microangiopathy (2). The epidemiology of community-acquired AKI in Asia indicates a rising incidence of dengue-associated cases, highlighting the need for localized studies to identify specific risk factors and prevalence (3). The prevalence and predictors of acute kidney injury has been reported differently based on the demographics ranging from 10% to 36% (6). Several instances of AKI in dengue affected patients have been documented in Pakistan, especially in the Khyber Pakhtunkhwa region. This shows the localized relevance of such investigations, however, it has not yet been studied signifying its association with dengue fever (7). To estimate the prevalence of AKI among adult patients admitted with laboratory-confirmed dengue infection at MMC, Mardan.

Methods: All eligible patients admitted with confirmed dengue infection will be enrolled consecutively after obtaining informed consent. Baseline information including demographics, comorbidities, presenting symptoms, clinical features, and laboratory investigations will be recorded at admission. Patients will be followed daily during hospitalization for monitoring of vitals, urine output, fluid balance, medications, and repeat laboratory tests. The primary outcome variable, AKI, will be defined according to KDIGO criteria based on observing changes in the serum creatinine and the urine output. Data will be collected using a structured case report form (CRF), verified with hospital records, and stored under unique study identification codes to maintain confidentiality. An informed consent form in English or Urdu will be provided to participants or their attendants prior to inclusion.

Results: The collected data will be analyzed using SPSS version 25 (or Stata/R as available). For summarization of baseline characteristics, descriptive statistics will be used. The prevalence of AKI will be calculated with 95% confidence intervals. For inferential analysis, Chi-square test will be used for univariate comparisons between patients with and without AKI while t-test or Mann–Whitney U test will be used for categorical variables and the independent t-test for continuous variables. Variables showing significance at $p < 0.20$ or of known clinical importance will be modeled through multivariable logistic regression in order to identify independent predictors of AKI. Adjusted odds ratios with 95% confidence intervals will be reported, and a p -value < 0.05 will be considered statistically significant.

Conclusion: contributing factors may include direct viral damage to kidney cells, immune responses, low blood volume, muscle breakdown (rhabdomyolysis), and thrombotic microangiopathy.

Keywords: rhabdomyolysis, kidney cells, immune responses

UG-PP-135 — Prevalence and Predictors of Social Isolation in Type 2 Diabetes Mellitus Patients and Its Impact on Quality of Life

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Background & Objectives: Type 2 Diabetes Mellitus (T2DM) affects physical, emotional, and social well-being, reducing overall QoL. Complications such as hypertension, neuropathy, and cardiovascular disease

frequently coexist with social isolation, depression, and anxiety. In Pakistan, especially KPK, these psychosocial aspects are often overlooked. To evaluate the prevalence and predictors of social isolation and assess its impact on health-related quality of life (HRQoL) in patients admitted to a Tertiary care hospital in Peshawar.

Methods: A prospective cohort study was conducted with 200 hospitalized patients with type 2 diabetes mellitus (T2DM). Data were collected using the LSNS-6 to measure social isolation and the EQ-5D-5L to assess HRQoL. Statistical analyses in SPSS included descriptive statistics, correlation tests, and multivariate regression, with significance set at $p < 0.05$.

Results: Of the participants, 59% were male and 41% female, with a mean age of 55.7 ± 9.8 years. Overall, 11.5% of participants reported being socially isolated. Hypertension (68.5%), cardiovascular disease, and polypharmacy were common. Social isolation showed strong correlations with older age, low income, prolonged disease duration, and polypharmacy. Socially isolated patients reported poorer QoL, with 60.5% experiencing severe pain and 30.5% moderate anxiety, indicating substantial psychosocial and clinical burden.

Conclusion: Social isolation markedly undermines QoL among T2DM patients in KPK. Implementing a comprehensive biopsychosocial care model is crucial for strengthening patient well-being, addressing psychosocial vulnerabilities, and achieving improved diabetes outcomes in Pakistan.

Keywords: Quality of Life (QOL), Social Isolation, Type 2 Diabetes Mellitus (T2DM), Predictors, Psychosocial

Dental Anxiety Among Patients Undergoing Tooth Extraction

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Background & Objectives: Dental fear is defined as a negative reaction to specific threatening stimuli associated with dental treatment, whereas dental anxiety is an excessive negative emotional state experienced by dental patients. Hence, by identifying anxiety patterns and the appropriate management to improve dental care delivery and support policy-level interventions to reduce treatment avoidance caused by anxiety. The study aims to evaluate the relationship between preoperative dental anxiety levels and their severity among patients undergoing extraction. In addition to that, to determine the prevalence and graded severity of dental anxiety among adult patients undergoing non-emergency tooth extractions.

MATERIALS AND METHODS: A cross-sectional study at Rehman College of Dentistry was done on a sample consisting of 227 sequential patients aged 18 and above. The study employ of the following tools: a consent form and a questionnaire containing the Modified Dental Anxiety Scale (MDAS). The main focus of the study was patients aged 18 and above, undergoing non-emergency extractions. In addition, patients who could provide informed consent and were mentally alert. While patients under 18, patients undergoing emergency extraction, or with a known psychiatric disorder or on anti-anxiety medications were excluded from the research. Data were analyzed using SPSS version 2021.

RESULTS: A chi-square test was conducted to determine the association between gender and

their anxiety level in reference to tooth extraction. Amid the study group, 22% were male, and 78% were female. The results exhibit a statistically significant association between gender and anxiety levels ($\chi^2 (4) = 20.17, p < 0.001$). Female participants demonstrated higher levels of anxiety compared to male participants. The mean age of participants was 21.9 years (standard deviation (SD)= 3.939), and it was seen that the majority of respondents belonged to the age group of around 22 years (46 respondents, 20.3%)

CONCLUSION: A significant percentage of the population was suffering from dental anxiety. It became apparent that females and patients aged 22 were more anxious during tooth extraction. A profusion of factors like age, gender, education level, and financial status were shown to influence dental anxiety. Furthermore, a higher percentage reported being extremely anxious about receiving stitches after extraction.

KEYWORDS: Dental extraction, Fear, Preoperative dental anxiety

UG-PP-137 — Prevalence and Severity-Stratified Psychosocial and Academic Outcomes of Primary Dysmenorrhea Among Female Medical and Nursing Students

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Background & Objectives: Primary dysmenorrhea (PD) refers to painful menstrual bleeding in the absence of any pelvic or reproductive pathology. It is ischemic pain due to contractions of the myometrium during menstruation. To assess the prevalence of PD

in the study population. To evaluate severity-stratified psychosocial and academic outcomes of PD among the study population.

Methods: A cross-sectional study was conducted at Saidu Group of Teaching Hospitals, and 449 participants were recruited using a non-probability, convenience sampling technique. Data on sociodemographics, menstrual characteristics, dysmenorrhea, and related outcomes were collected. 31 participants were excluded due to self-reported pelvic pathology. Analyses were performed in IBM SPSS using the Chi-square test to assess the associations between dysmenorrhea severity and categorical variables, including associated symptoms, psychosocial and academic outcomes. $p < 0.05$ was considered statistically significant.

Results: The prevalence of PD was 75.8%, with the following severity distribution: 24% mild, 41% moderate, and 25% severe. Mood swings (87%) and fatigue (77%) were the most reported associated symptoms; however, the incidence of only dizziness (45%), nausea (50%), vomiting (23%), and diarrhea (40%) increased significantly with dysmenorrhea severity ($p\text{-value} < 0.05$). Significant associations were also indicated with sleep disturbance, appetite changes, poor academic performance, and physical, emotional, and social limitations ($p\text{-value} < 0.05$). Pain management strategies included taking painkillers (73%) and rest or sleep (89%), among others. A vast majority of participants (59%) perceived menstrual pain as a normal phenomenon, and only a few (17%) consulted with a healthcare professional.

Conclusion: This study demonstrated an alarmingly high prevalence of PD, which exerts profound impacts on students' daily lives

and academic performance. Study participants, despite being healthcare students, considered menstrual pain as normal and chose not to seek professional help. Awareness campaigns and accessible management strategies are crucial to mitigate the devastating effects of dysmenorrhea on females' lives.

Keywords: Dysmenorrhea, menstrual pain, menstrual symptoms, gynecology

UG-PP-138 — Prevalence of Cardiac Autonomic Neuropathy in Type 2 Diabetes Mellitus Patients

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Background & Objectives: Diabetes Mellitus is a widely encountered endocrine condition characterized by abnormally high of blood glucose levels. Heart, kidneys, nerves and eyes, gets affected by type 2 diabetes. Cardiac autonomic neuropathy is a common but underreported complication in patients with type 2 diabetes.

Methods: This prospective cross-sectional study was conducted at the Department of Endocrinology, Hayatabad Medical Complex, Peshawar, Pakistan, from August 2025 to December 2025. Both genders aged 40-60 years with at least 10 years of type 2 diabetes mellitus were included. The data was analyzed by SPSS version 27. Means $\pm$ standard deviation were calculated for continuous variables while frequencies and percentages were calculated for qualitative variables.

Results: Out of total 285 type 2 diabetic

patients, 174 (61.05%) were of male gender and 111 (38.95%) were of female gender. Mean age of the patients were 50.4 ± 12 years. 19.8% patients were diagnosed with cardiac autonomic neuropathy majority of which were male with 58.8 % while 41.2 % were female patients.

Conclusion: We observed that 19.8% patients had diabetic related cardiac autonomic neuropathy which is directly related to the long duration of diabetes, which shows importance of assessing type 2 diabetes mellitus patients for this complication.

Keywords: type 2 diabetes mellitus, cardiovascular diseases, Cardiac autonomic neuropathy

UG-PP-139 — Prevalence of Problematic Internet Addiction and Its Association With Dry Eye Symptoms Among University Students

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Background & Objectives: Globally, Internet usage has increased rapidly, particularly among university students and young adults. Excessive and uncontrolled Internet use may lead to Internet Addiction (IA), which is associated with psychological distress, reduced physical activity, and prolonged screen exposure. Extended screen time is a major risk factor for the development of dry eye symptoms. This study aimed to determine the prevalence of Internet Addiction and dry eye symptoms and examine the association between them.

Methods: A quantitative cross-sectional study was conducted on 400 university students aged 15–28 years. Data were collected using two standardized questionnaires: the Ocular Surface Disease Index (OSDI) and the Problematic Internet Use Questionnaire (PIUQ). Both online and paper-based forms were distributed after obtaining informed consent. Data were analyzed using SPSS version 22.

Results: Descriptive statistics were applied to calculate prevalence, students' physical and mental wellbeing. Furthermore, future research should focus on longitudinal and while the chi-square test was used to assess the association between Internet Addiction and dry eye symptoms. The results showed a high prevalence of dry eye symptoms, with 80.8% (323 out of 400) of the participants reporting dry eye-related problems. Additionally, the prevalence of Internet Addiction was higher among males (80%) than females (78%). A statistically significant association was found between internet use and dry eye symptoms ($\chi^2 = 45.06$, $DF = 3$, $P < 0.05$), indicating that excessive internet use is strongly linked to the development of dry eye conditions., Internet Addiction is highly prevalent among university students and is significantly associated with dry eye symptoms.

Conclusion: These findings highlight important public health concerns and emphasize the need to promote healthy screen habits in educational institutions. Awareness programs, regular eye screening, and counseling services should be implemented to improve intervention-based studies to develop effective strategies for reducing the negative impact of excessive Internet use.

Keywords: problematic Internet addiction, prevalence, dry eye symptoms, association,

university students, ocular surface disease index.

UG-PP-140 — Psychometric Evaluation of the Urdu Version of the Hospital Anxiety and Depression Scale Among Individuals With Spinal Cord Injury

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Background & Objectives: Anxiety and depression are common among individuals with spinal cord injury; however, evidence on the reliability and validity of the Urdu version of the Hospital Anxiety and Depression Scale (HADS) in the Pakistani Spinal Cord Injury (SCI) population is limited. This study evaluated its psychometric properties among individuals with SCI in Peshawar.

Methods: The HADS was translated into Urdu using a forward-backward method. In a cross-sectional study (Feb–Apr 2025) at Paraplegic Centre Peshawar, 100 individuals with SCI completed the 14-item scale. Reliability was assessed using Cronbach's alpha, and validity through item-total correlations, exploratory

factor analysis, KMO and Bartlett's tests, and content validity indices.

Results: The Urdu HADS demonstrated acceptable overall internal consistency ($\alpha = 0.789$). The anxiety subscale showed good reliability ($\alpha = 0.738$), and the depression subscale moderate reliability ($\alpha = 0.600$). Most items had satisfactory corrected item-total correlations. The KMO value was 0.800, and Bartlett's test was significant ($\chi^2 = 454.168$, $df = 91$, $p < 0.001$), supporting factor analysis. Exploratory factor analysis identified a two-factor structure explaining 36.4% of total variance, corresponding to anxiety and depression dimensions, with a moderate negative correlation between factors ($r = -0.562$).

Conclusion: The Urdu HADS demonstrates acceptable reliability and validity for screening anxiety and depression in individuals with SCI in Pakistan, though further validation with larger samples is recommended.

Keywords: Hospital Anxiety and Depression Scale, Urdu version, spinal cord injury, reliability, validity, Pakistan

UG-PP-141 — Recurrent Central Giant Cell Granuloma With Orbital and Skull Base Involvement in a Pediatric Patient Managed Endoscopically

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Background: Central giant cell granuloma (CGCG) is an intraosseous lesion with fibrous

tissue, hemorrhage, multinucleated giant cells, and trabeculae of woven bone. It primarily affects children and young adults, more frequently in females, and favors the anterior mandible. While typically indolent, it can exhibit aggressive behavior. Recurrence occurs with incomplete removal.

Case Presentation: A 3-year-old girl presented with progressive left periorbital swelling. Before, she had undergone neurosurgical intervention via a transcranial approach for a cranial mass, which was subsequently diagnosed as a giant cell granuloma on histopathological analysis. The initial procedure addressed only the intracranial component. On examination, the patient demonstrated left orbital swelling, proptosis, and visual disturbances. A cerebrospinal fluid leak was also identified. There was no evidence of systemic illness or syndromic association. Radiological evaluation with CT scan and MRI revealed a large expansile lesion occupying the left nasal cavity and paranasal sinuses, with extension into the orbit and intracranial compartment. The lesion caused skull base erosion and loss of the bony separation between the nasal and cranial cavities. Given the aggressive behavior and extent of the disease, further evaluation was performed to exclude metabolic causes; parathyroid hormone levels were within normal limits. Owing to recurrence, extensive craniofacial involvement, and a CSF leak, an endoscopic endonasal approach was selected. The procedure resulted in complete lesion excision and orbital decompression.

Conclusion: Incomplete neurosurgical excision led to aggressive recurrence; complete endoscopic endonasal removal enabled effective disease control and a favorable outcome.

Keywords: Central Giant Cell Granuloma, Pediatrics, Skull Base, Orbital Cavity.

UG-PP-142 — Reliability and Validity of a Smartphone Goniometer for Range of Motion Measurement of Knee and Elbow Joints

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Background & Objective: Accurate range of motion (ROM) measurement is essential in physiotherapy assessment and treatment planning. While the digital goniometer (DG) is used as the standard tool, smartphone-based goniometers have provided a portable way, such as the PhysioMaster app, which offers a reliable alternative. Our study aimed to evaluate the reliability and validity of the PhysioMaster application for measuring the knee and elbow joint ROM, using DG as a reference standard.

Methods: In this analytical cross-sectional validation study, a sample of 62 healthy students was selected. Active ROM was measured for the knee and elbow flexion-extension ranges using the PhysioMaster application installed on an iPhone and a DG as the comparator. Reliability and validity were analyzed using the Interclass Correlation Coefficient (ICC), SEM, MDC95, and Bland-Altman plots with 95% Limits of Agreement (LoA).

Results: The app displayed excellent intra- and inter-rater reliability across both joints.

For the knee, flexion and extension ICCs ranged from 0.995–1.000, while for the elbow, ICCs ranged from 0.924–0.999. Concurrent validity with the DG was also high (ICC = 0.916–0.997), with SEM within 0.00°–2.01° and MDC within 0.00°–5.57° across all movements.

Conclusion: The PhysioMaster proved to be highly reliable, and valid for measuring knee and elbow joint ROM, outperforming DG. The minimal measurement errors and strong agreement across raters confirms its use as an alternative clinical tool for accurate ROM assessment.

Keywords:

Range of Motion, Goniometer, Reliability, Validity, PhysioMaster

UG-PP-143 — Road Traffic Accidents and Trauma Care in Pakistan: Lessons From the UAE

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Background & Objectives: Road traffic accidents cause a very high number of deaths in Pakistan each year. Trauma care in the country is weak because there is no national trauma registry, pre-hospital services are limited, and hospital coordination is poor. In the United Arab Emirates, a trauma registry and organized emergency system have helped improve survival and reduce deaths.

Review: This short review looked at reports from the UAE trauma registries and published surveys from Pakistan. The UAE has shown major improvements, while Pakistan still struggles with delays and lack of basic facilities. To improve outcomes, Pakistan needs to build a trauma registry, train and expand emergency medical services, and introduce standard hospital protocols. Learning from the UAE model can help reduce preventable trauma deaths in Pakistan.

Keywords: United Arabs Emirates, Traffic

UG-PP-144 — Robotic Assisted Versus Laparoscopic Cholecystectomy for Benign Gallbladder Disease: A Systematic Review and Meta-Analysis

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Background and Objectives: Robotic-assisted cholecystectomy (RAC) has emerged as an alternative to laparoscopic cholecystectomy (LC) for benign gallbladder disease, but its clinical advantages remain uncertain.

Methods: We conducted a systematic review and meta-analysis of randomized controlled trials (RCTs) comparing RAC with LC. Major databases (PubMed, Embase, Cochrane CENTRAL, ClinicalTrials.gov) were searched up to July 2025. Primary outcome was intraoperative blood loss; secondary outcomes included operative time, length of hospital stay, and postoperative complications. Risk of bias was assessed using the Cochrane RoB 2.0 tool, certainty of evidence with GRADE, and significance of findings with trial sequential

analysis (TSA). Six RCTs involving 395 patients were included.

Results: RAC was associated with a statistically significant reduction in blood loss (MD = 14.8 mL, 95% CI: 8.7–20.8, $p < 0.00001$; $I^2 = 36\%$), though the difference was clinically negligible. Operative time was longer for RAC (MD = +15 minutes, $p < 0.00001$), confirmed as conclusive by TSA. No significant differences were found in length of hospital stay (MD = -0.86 days, $p = 0.12$) or postoperative complications, including bile leakage, bleeding, incisional hernia, and wound infection. Risk of bias assessment rated three RCTs as low risk, two with some concerns, and one at high risk. Certainty of evidence ranged from moderate (operative time, complications) to low (blood loss, hospital stay).

Conclusion: RAC and LC demonstrate comparable safety and efficacy in benign gallbladder disease, with RAC offering no clear perioperative advantage apart from a modest reduction in blood loss. Given higher costs and inconclusive evidence for most outcomes, routine use of RAC in standard cholecystectomy cannot be recommended.

Keywords: Robotic surgery; Laparoscopic surgery; Cholecystectomy outcomes; Randomized controlled trials

UG-PP-145 — Clinicodemographics Profile, Histopathological Spectrum and Postoperative Outcomes of Brain Tumor Patients: A Prospective Analysis

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Objective: To analyze the clinicodemographic characteristics, histopathology report and postoperative outcomes in terms of complications, tumor recurrence and improvement of patients undergoing surgery for brain tumors.

Methods: This prospective observational study was conducted in neurosurgery department Lady Reading Hospital Peshawar from 1st January 2024 to 25 November 2025. Detailed data were collected using a pre-designed proforma. All those patients who has brain tumor and managed surgically were included in the study. Patients clinical, demographical data were collected. Patients post op histopathology report and outcomes were were assessed 2 weeks after surgery.

Results: Among the 109 brain tumor patients included in the study, the majority were aged between 21 and 50 years, with a slight female predominance (55.05%). Frontal lobe tumors were the most common (28.44%), followed by infratentorial (20.18%) and sellar/parasellar (19.27%) lesions, with left-sided tumors being more frequent (39.45%). Meningioma was the most common histopathological diagnosis (21.10%), followed by oligodendroglioma (9.17%) and pituitary adenoma (7.34%), although histopathology was unavailable in 27.52% of cases. Postoperatively, 81.65% of patients showed clinical improvement, while 11.01% deteriorated and 7.34% remained unchanged; overall mortality was 11.01%. Most patients had satisfactory postoperative outcomes (67.89%), with pneumocephalus, hematoma, and edema being the most frequent complications. The mean preoperative Glasgow Coma Scale score was 14.68 ± 0.94 , and the mean hospital stay was 16.02 ± 15.96 days.

Conclusion: Early diagnosis, accurate histopathological classification, and timely surgical intervention play a critical role in improving patient outcomes. The findings contribute valuable regional data and may help in optimizing the management strategies for brain tumor patients in tertiary care settings.

Keywords: Clinicodemographics profile, Histopathology, Post operative outcomes, Brain tumor

UG-PP-146 — Safety and Efficacy of Albuterol-Budesonide Versus Albuterol Alone in Asthma: A Grade-Assessed Systematic Review and Meta-Analysis

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Background & Objectives: Short-acting β_2 -

agonists (SABA) are widely used as rescue therapy in asthma but do not address airway inflammation. The fixed-dose combination of albuterol–budesonide provides both bronchodilation and anti-inflammatory effects and may reduce asthma exacerbations.

Methods: A systematic review and meta-analysis of randomized controlled trials comparing as-needed albuterol–budesonide with albuterol alone in patients aged ≥ 12 years with asthma was conducted. Primary outcomes included risk, number, and annualized rate of severe asthma exacerbations. Secondary outcomes included lung function (FEV₁), systemic corticosteroid use, and safety.

Results: Three randomized controlled trials involving 6,134 participants were included. Albuterol–budesonide significantly reduced the risk of severe exacerbations (HR 0.72), reduced the number of exacerbations (RR 0.64), and lowered annual exacerbation rates (RR 0.68) compared with albuterol alone. Combination therapy improved lung function (mean FEV₁ increase of 80 mL) and reduced systemic corticosteroid exposure. Adverse event rates were comparable between groups. **Conclusion:** As-needed albuterol–budesonide is an effective and safe reliever therapy that reduces asthma exacerbations, improves lung function, and limits corticosteroid exposure, supporting its role as an alternative to SABA monotherapy.

Conclusion: Albuterol–budesonide significantly reduces exacerbation burden, corticosteroid exposure and improve lung function, favoring ICS–SABA relievers as a potent alternative in asthma management, though longer-term and cost-effectiveness data are needed

Keywords: Asthma, Albuterol–budesonide, Rescue therapy, Exacerbations, Inhaled corticosteroids

UG-PP-147 — Safety of Cesarean Myomectomy in Women With Uterine Fibroids: A Retrospective Cross-Sectional Study

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Background & Objectives: Uterine fibroids are among the most common benign tumors in women of reproductive age and may complicate pregnancy, often necessitating cesarean delivery. Although cesarean myomectomy was traditionally discouraged due to concerns regarding hemorrhage and perioperative morbidity, recent evidence suggests it may be safe in selected patients. This study aimed to evaluate the safety and clinical outcomes of performing myomectomy during cesarean section in women with uterine fibroids.

Methods: A retrospective cross-sectional study was conducted at Ayub Medical College & Teaching Hospital, including 268 women with ultrasonographically confirmed fibroids who underwent cesarean delivery between January 2023 and October 2025. Among them, 133 underwent cesarean myomectomy and 135 underwent cesarean section alone.

Results: Data regarding fibroid characteristics, hemoglobin levels, transfusion requirements, operative duration, postoperative complications, and hospital stay were analyzed using chi-square and independent t-tests. The

myomectomy group demonstrated a greater mean hemoglobin drop (2.4 ± 0.6 g/dL) compared to the cesarean-only group (1.8 ± 0.5 g/dL, $p < 0.01$). However, no significant differences were observed in blood transfusion rates (15.0% vs. 13.3%, $p = 0.67$), postoperative complications (10.5% vs. 9.6%, $p = 0.81$), operative duration ($p = 0.08$), or length of hospital stay ($p = 0.43$). Larger fibroids (> 5 cm) were associated with prolonged operative time ($p < 0.05$).

Conclusion: Cesarean myomectomy appears to be a safe and feasible option in carefully selected patients when performed by experienced surgeons, without significantly increasing perioperative risks.

Keywords: Cesarean myomectomy, uterine fibroids, cesarean section, pregnancy, surgical outcomes, perioperative safety

UG-PP-148 — Self-Efficacy And Clinical Skill Acquisition Among Nursing Students At Sarhad University Of Science And Information Technology, Peshawar: A Correlational Study

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Background & Objectives: Self-efficacy is essential in nursing education to guarantee the provision of suitable nursing care in challenging clinical situations. To handle these clinical situations in real practice is an essential part of nursing

education and clinical skills has direct effect on the patient care. Therefore, the study aims to examine the levels and determine the correlation between self-efficacy and clinical skill acquisition among nursing students

Methods: A correlational study design was used to assess correlation between self-efficacy (SE) and clinical skill acquisition (CSA) among 2nd years nursing students. Data was collected through Clinical Self-Efficacy Scale (CSES) and OSCE was conducted via Clinical Skill Acquisition Checklists (CSAC) after ethical approval and written informed consent using census method. Furthermore. Data was analyzed through SPSS calculating frequencies, percentages, mean and SD. Chi square test was used to determine for association. Moreover, Spearman rho correlation was used to determine the strength of association between SE and CSA.

Results: Among 112 students the most participants were males 78.60% as compared to females with mean $\pm$ SD age 21 ± 2 in years. The highest response was IV-line 97.3% with mean $\pm$ SD (9 ± 2). The total mean $\pm$ SD) score for CSE and CSA were 62 ± 17 and 133 ± 16 . The most students were found high confident 56.3% in performing good clinical skill 77.7%. Association was found between CSA with age and gender. Moreover, weak positive correlation was found between CSE and CSA.

Conclusion: The study findings revealed that students with commonly performing skills have high SE and predisposed by repetition and practice, exposure level to circumstances and exertion of the

procedure. The findings also revealed the deficient areas for upgrading where the requirement of training is critical for nursing students.

Keywords: Self-Efficacy, Self Confidence, Clinical skill acquisition, Clinical Skills, Nursing students

UG-PP-149 — Self-Medication and Health Literacy: Examining Knowledge, Attitudes, and Practices Among Medical Students

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Background & Objectives: Self-medication, defined as the use of medicines without professional consultation, is increasingly prevalent among university students due to easy access to over-the-counter medications. This behavior raises significant concerns due to the potential risks associated with misdiagnosis, drug interactions, and antibiotic resistance. Among medical students, partial pharmacological knowledge and increased confidence in self-treatment may further encourage this practice. This study aimed to assess the association between health literacy and self-medication practices among medical students

Methods: A cross-sectional study was conducted at Azra Naheed Medical College, Lahore. A total of 344 medical students were

recruited using convenience sampling. Data were collected using a structured Self-Medication Scale and the Health Literacy Instrument for Adults (HELIA). Sample size was calculated using Cochran's formula with a 95% confidence level and 5% margin of error. Data were analyzed using SPSS version 26. Independent samples t-test, one-way ANOVA, and Pearson correlation were applied. Ethical approval was obtained prior to data collection.

Results: Among the participants, 66% were female and 65.4% belonged to nuclear families. No statistically significant differences in health literacy scores were observed by gender ($p = 0.440$), family system ($p = 0.083$), or residence status ($p = 0.864$). One-way ANOVA showed no significant variation in self-medication practices across academic years ($F(4,339) = 0.982$, $p = 0.417$). Pearson correlation analysis demonstrated a weak, non-significant negative association between health literacy and self-medication practices ($r = -0.050$, $p = 0.355$).

Conclusion: Health literacy was not significantly associated with self-medication practices among medical students. These findings suggest that factors beyond general health literacy, such as behavioral norms, perceived competence, and access to medications, may play a greater role. Further multi-center and qualitative studies are recommended to explore these determinants.

Keywords: Self-medication; Health literacy; Medical students; Over-the-counter medicines

UG-PP-150 — Self-Medication Practices, Digital Information Reliance, and Safety Behaviors Among Generation-Z Healthcare Trainees/Young Professionals

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Background and Objectives: Self-medication is increasingly common among healthcare trainees due to easy access to medicines and basic medical knowledge. While it can reduce healthcare burden, unsafe practices may lead to adverse effects, resistance, and delayed diagnosis. Generation-Z heavily relies on digital platforms for health information, which may influence medication choices. This study aims to determine the prevalence and patterns of self-medication among Generation-Z healthcare trainees and young professionals. It assesses the level of reliance on digital sources for medication-related decisions and their safety behaviors.

Method: A cross sectional study was planned and a questionnaire was developed. A total of 200 Gen-Z healthcare trainees and young professionals at RMI colleges were surveyed. Data was recorded and analyzed using spss software.

Results: Most participants were aged 21 years (27%), with 51.5% from dentistry and 24% from medicine. Regarding behavior, 36% never relied on online experts, 59% never trusted non-professional sources, while 21% occasionally self-treated based on experience. For beliefs, 39% agreed self-medication is safe for mild illness and 36% felt doctors are not always needed. In digital trust, 54.5% reported no/low trust in medical websites, while 35% showed moderate trust in AI health information.

Conclusion: Although many participants demonstrate awareness of basic safety measures, significant gaps in responsible medication use persist. Strengthening awareness and guidance can help reduce potential risks associated with inappropriate self-medication.

Keywords: Self-medication, Gen-Z, healthcare trainees

UG-PP-151 — Self-Reported Relationship Between Sugar Cravings and Mood Swings: A Serotonin Perspective

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Background & Objectives: Dietary sugar intake may influence serotonin, a key neurotransmitter involved in mood regulation, through rapid fluctuations in blood glucose levels. This may contribute to a self-reinforcing cycle of sugar cravings and mood disturbances. This study aimed to investigate the association between sugar craving frequency and mood swing frequency and intensity, and to identify lifestyle factors influencing this relationship in young adults.

Methods: A cross-sectional study was conducted on 171 participants (63.7% female; mean age 21–23 years) using convenience sampling. A structured self-report questionnaire assessed sugar cravings, mood swings, emotional symptoms, stress, sleep quality, exercise, and dietary intake. Statistical analysis included Spearman correlation, Mann–Whitney U, Kruskal–Wallis H, and Chi-square tests with a significance level of $\alpha=0.05$.

Results: Sugar craving frequency showed a significant moderate positive correlation with mood swing frequency ($r=0.365$, $p<0.001$), total mood score ($r=0.356$), sadness ($r=0.330$), irritability ($r=0.292$), anxiety ($r=0.290$), and mood swing intensity ($r=0.210$, $p<0.01$). Mean mood burden increased from 4.62 (no cravings)

to 7.50 (daily cravings). Mood swings were reported by 43.5% on craving days compared to 18.6% on non-craving days ($\chi^2=11.25$, $p=0.001$). Stress was the strongest predictor ($r=0.433$), while poor sleep was associated with higher mood burden.

Conclusion: Findings support a serotonin-mediated link between sugar cravings and mood swings, with stress and poor sleep as key contributing factors. Integrating dietary and psychological monitoring may improve mental health outcomes.

Keywords: Sugar craving, mood swings, serotonin, emotional regulation, stress, sleep quality

UG-PP-152 — Shifting Susceptibility Profiles: Conventional Versus Newer Antibiotics in Recurrent UTIs

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Background/Objective: Antibiotics play a crucial role in treating Urinary Tract Infections (UTIs) but due to resistance, the effectiveness of antibiotics is waning. Re-examining old antibiotics is one approach that can address the issue of antimicrobial resistance. The current study aims to evaluate the susceptibility pattern of relatively older antibiotic Co-trimoxazole and its comparison with Levofloxacin, Nitrofurantoin, and Fosfomycin.

Methods: This cross-sectional study was conducted in Mardan Medical Complex and Postgraduate Medical Education Department of Khyber Girls Medical College, Peshawar. Both male and female patients, above the age

of 15 years with recurrent uncomplicated urinary tract infections were included in the study. The samples were inoculated onto CLED (Cystine-Lactose-Electrolyte-Deficient) Agar, a differential culture medium. The grown bacteria were identified, using Gram staining and BIOMÉRIEUX® API® 10S kits. Minimum inhibitory concentrations (MIC) were determined by the Agar dilution method; as per standard protocol. The results were compared among Co-trimoxazole, Levofloxacin, Nitrofurantoin, and Fosfomycin using statistical tests.

Results: A total of 680 samples were received, of which 158 samples were culture-positive. The isolated organisms were *E. coli* (74.1%), *Klebsiella* (10.8%), *Pseudomonas* (5.1%), *Enterococci* (6.3%), *Proteus* species (2.5%), and *Citrobacter* (1.3%). Based on MIC analysis, 77.2% of isolates were found to be sensitive to Co-trimoxazole, 52.5% to Levofloxacin, 86.7% to Nitrofurantoin, and 90.5% to Fosfomycin. When comparing antibiotics, Co-trimoxazole displayed significantly higher effectiveness against the isolates compared to Levofloxacin (p -value 0.004). However, in comparison to Nitrofurantoin and Fosfomycin, Co-trimoxazole exhibited lower effectiveness, with respective p -values of 0.000 and 0.007.

Conclusion: In our study cohort, the bacterial isolates showed appreciably higher susceptibility to Co-trimoxazole compared to Levofloxacin. However, it remained inferior to the susceptibility rates observed for Nitrofurantoin and Fosfomycin. Given the guideline that antibiotics exhibiting resistance levels surpassing 20% should be avoided for empirical therapy, the presence of a 22.8% resistance rate to Co-trimoxazole discourages

its consideration as an empirical antibiotic option.

Keywords: Urinary tract infections, Drug resistance, Culture and sensitivity, Minimum inhibitory concentration

UG-PP-153 — Sleep Disorders and Restless Legs Syndrome Among Patients on Maintenance Hemodialysis: A Multicentre Cross-Sectional Study

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Background & Objectives: Sleep disorders like insomnia, obstructive sleep apnea and restless legs syndrome are highly prevalent yet under recognized in patients receiving long-term dialysis, particularly in low-resource settings. These disorders significantly impact treatment adherence and quality of life among other factors in patients. Despite extensive international data evidence from low income south Asian countries is limited. This study assessed the prevalence and correlates of insomnia, sleep apnea, and restless legs syndrome (RLS) among dialysis patients in Pakistan and to identify associated demographic, clinical and treatment related factors.

Methods: A multicenter cross-sectional study of 361 adults on dialysis across four provinces was conducted in 2025. Participants were interviewed in Urdu using the Athens Insomnia Scale, Berlin Questionnaire, and the RLS Diagnostic Questionnaire. Multivariable logistic regression analyses were performed to identify independent predictors for each sleep disorder.

Results: Median age was 47 years; 60% were male. Prevalence of insomnia, high risk for sleep apnea, and RLS was 63%, 46%, and 68%, respectively. Severe RLS emerged as the strongest predictor of insomnia (Adjusted Odds Ratio, AOR: 4.72), followed by insulin use (AOR: 3.86), older age, and higher body weight predicted insomnia. Sleep apnea risk was higher in women, older adults, and those with hypertension or diabetes.

Conclusion: Over half of RLS cases were moderate–severe and associated with hypnotic and anticoagulant use while lower educational attainment was also a significant correlate. Sleep disorders are common and multifactorial

among dialysis patients in Pakistan, underscoring the need for routine screening and targeted interventions.

Keywords: Hemodialysis; Insomnia; Restless legs syndrome; Intrinsic Sleep Disorders, Pakistan, Dyssomnias

UG-PP-154 — Social Media Exposure and Its Association With Social Anxiety in School-Going Adolescents

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Background & Objectives: Social Anxiety Disorder is a common and impairing mental health condition among adolescents, with a global prevalence of 3.6% and reported rates of 9–34% in Peshawar. This age group is increasingly engaged with social media, raising concerns about its psychological effects. International literature suggests an association between social media use and social anxiety, particularly among passive users; however, local evidence in Pakistani adolescents remains limited. This study aimed to determine the prevalence of social anxiety among school-going adolescents and to examine its association with active versus passive social media use and with time spent on social media.

Methods: A school-based, cross-sectional study was conducted among 408 adolescents (204 males, 204 females) from public and private schools in Peshawar, using multi-stage sampling. Standardized

tools were used: the Social Anxiety Scale for Adolescents (SAS-A), Social Media Addiction Scale (SMAS), and Passive/Active Use Measure (PAUM). Data were analyzed using SPSS v26, including descriptive statistics, t-tests, ANOVA, correlation and regression analysis.

Results: The prevalence of social anxiety was 60.3% moderate and 13.7% severe. The average daily social media usage was 3.1 ± 2.3 hours. Social anxiety scores showed a significant positive correlation with social media addiction ($r = 0.313$, $p < 0.01$), and particularly with passive use ($r = 0.232$, $p < 0.01$). A weak positive correlation was found between time spent on social media and social anxiety ($r = .104$, $p = .053$). Regression analysis identified social media addiction ($\beta = .247$, $p < .001$) and type of school ($\beta = -.293$, $p < .001$) as significant predictors of social anxiety.

Conclusion: High levels of social media addiction and passive use are associated with increased social anxiety symptoms among adolescents. These findings call for awareness, responsible digital engagement and early school-based interventions in adolescent populations.

Keywords: Adolescent, Social Media, Anxiety, Phobia

UG-PP-155 — Sociodemographic and Clinical Determinants of the Use of the Public Healthcare Sector in the Era of Universal Health Coverage in Morocco

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Background & Objectives: In light of the expansion of universal health coverage (UHC) in Morocco, to outline the sociodemographic traits, insurance plans, health coverage, and healthcare utilization profile of patients seeking consultation from the public healthcare sector.

Methods: A descriptive cross-sectional study involving 99 patients who reported the public sector as their place of medical consultation. The variables studied included sociodemographic characteristics, health coverage status, type of insurance, and frequency of healthcare service utilization. The studies were based on descriptive statistics.

Results: The sample was largely female (71.7%), with a majority of people aged 45 to 64 (66.7%). The majority of respondents were unemployed (56.6%) and 30.3% had no educational level. Nearly 79% had health coverage. The most frequent scheme was AMO Tadamon (58.6%), followed by CNSS and CNOPS (10.1% each). On the other hand, 21.2% of patients did not belong to any declared scheme. The use of healthcare was mostly infrequent (66.7%).

Conclusion: The public healthcare sector remains primarily utilized by vulnerable populations, mostly covered by AMO Tadamon, but with a significant proportion

of patients who are uninsured or without a clearly identified scheme.

Keywords: Public sector – Universal health coverage – Access to care – Morocco

UG-PP-156 — Specialty Preferences and Brain Drain Factors Influencing Career Intentions Among Medical Students in Pakistan

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Background & Objectives: Career choices of medical students influence the future healthcare workforce by determining the distribution of specialists. In many low- and middle-income countries (LMICs), a significant number of graduates migrate abroad for training and practice, contributing to “brain drain” and weakening already fragile healthcare systems.

Methods: A cross-sectional analytical study was conducted among MBBS students in Khyber Pakhtunkhwa (KPK), Pakistan, to assess intentions to migrate abroad and preferred future specialties. Data were collected using a structured self-administered questionnaire and analyzed using SPSS version 27.0.1.

Results: A total of 424 medical students participated in the study, with a mean age of 21.80 ± 1.91 years. The sample comprised 296 females (69.8%), 226 males (30.2%). Participants selected their top preferred

specialties were Surgery (n = 210), Cardiology (n = 157), Internal Medicine (n = 139), Neurology (n = 121), and Dermatology (n = 100). Overall, 88.2% of participants (n = 374) expressed an intention to migrate, compared to 11.8% (n = 50) who did not. Reasons for intending to migrate were better pay, political unrest, lack of skilled professionals in their desired specialties, standard of living, professional advantage and employment prospects. Females and uninformed were less likely to migrate as compared to males and informed respectively.

Conclusion: A large proportion of medical students intend to migrate abroad, posing challenges for the local healthcare system. Improving professional growth opportunities, remuneration, safety, and working conditions may help reduce brain drain.

Keywords: Specialty preferences, career intentions, Brain drain, medical students

UG-PP-157 — Standard Versus Extended Pelvic Lymphadenectomy in Patients With Bladder Cancer: A Systematic Review and Meta-Analysis

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Objectives: For decades, pelvic lymph node dissection (PLND) has been a critical component of radical cystectomy in patients with bladder cancer. Although its role in curative surgery for high-risk non-muscle-invasive and muscle-invasive cases is well-established, the therapeutic advantages of extended PLND remain a topic of ongoing debate.

Methods: A comprehensive literature search of major bibliographic databases was performed from inception to November 2024. Studies comparing extended PLND (extended or super extended) with standard PLND were identified. Data for clinical outcomes was extracted and pooled estimates were calculated using a random effects model with RevMan 5.4.

Results: A total of 11 studies (2 RCTs and 9 observational) were included reporting data for 4001 patients. The pooled analysis demonstrated that extended PLND was associated with significantly better recurrence-free survival (HR=0.67, 95% CI: 0.60-0.74). Standard PLND led to significantly higher 5-year recurrence rates (RR=1.44, 95% CI: 1.28-1.62) compared with the extended approach. The pooled estimates for disease-specific survival (HR=0.86, 95% CI: 0.62-1.19), overall survival (HR=0.99, 95% CI: 0.86-1.16), and complications remained comparable.

Conclusions: Extended PLND can lead to favorable recurrence-free survival and 5-year recurrence rates. However, retrospective observational studies mainly drive the evidence, and additional RCTs are required to reach a definitive conclusion.

Key Words: bladder cancer, cystectomy, pelvic lymph node dissection.

UG-PP-158 — Stigmatization of Dental Health Care Among Elderly People in Pakistan

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Background: Oral health is a critical component of overall well-being, particularly for older adults who face higher risks of tooth loss, gum disease, and oral infections. In Pakistan, limited awareness, restricted access to dental care, and prevailing stigma often discourage timely treatment, negatively affecting nutrition, communication, and quality of life.

Objectives: The study aimed to establish a vision for improving oral health care among underserved older populations and to recommend strategies for better access and awareness.

Methods: A descriptive cross-sectional design was used. Data were collected from 102 participants aged 40–80 years through structured questionnaires and interviews. The study assessed awareness, common oral health issues, stigma, and accessibility of dental services, with analysis focusing on gaps in knowledge and utilization.

Results: Crosstab analysis revealed a significant association between denture type and attitudes toward care ($p=0.014$). Full denture users largely disagreed with care-seeking, while partial denture users showed varied responses. Denture status was not

significantly linked to belief ($p=0.072$) or stigma ($p=0.094$), though a subtle linear trend ($p=0.011$) suggested nuanced differences.

Conclusion: The findings highlight the urgent need for awareness campaigns, accessible dental services, and community-based oral health programs. Integrating oral health into public health initiatives and reducing stigma could improve outcomes and enhance the quality of life of older adults in Pakistan.

Key Words: Oral health, older adults, stigma, dental care access, underserved populations, Pakistan

UG-PP-159 — Subtotal Thyroidectomy for Multinodular Goiter: Whether to Place Drain or Not

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Objectives: To compare postoperative outcomes of drain placement versus no drain placement in patients undergoing subtotal thyroidectomy for multinodular goiter.

Methods: A total of 150 eligible patients were enrolled after ethical approval and randomly assigned into two equal groups

(n=75 each) using random number tables. Group A underwent surgery without drain placement, while Group B had drains placed. All procedures were performed by the same surgical team to minimize bias. Demographic data, thyroid function tests, and ultrasonographic findings were recorded preoperatively. Postoperative pain was assessed using the Visual Analogue Scale (VAS) at 6 and 24 hours, and hospital stay was recorded.

Results: The mean age was 35.77 ± 8.10 years in Group A and 36.15 ± 7.40 years in Group B. Males constituted 13.33% (n=10) in Group A and 21.33% (n=16) in Group B, while females made up 86.67% (n=65) and 78.67% (n=59), respectively. Mean postoperative pain scores at 6 hours were 3.17 ± 0.38 in Group A and 3.81 ± 0.39 in Group B ($p = 0.0001$), and at 24 hours were 2.32 ± 0.47 versus 3.21 ± 0.41 ($p = 0.0001$). The mean hospital stay was 1.13 ± 0.34 days in Group A and 1.56 ± 0.50 days in Group B ($p = 0.0001$).

Conclusion: Patients undergoing subtotal thyroidectomy without drain placement experienced significantly less postoperative pain at 6 and 24 hours and had a shorter hospital stay compared to those with drains. Routine drain placement may therefore be unnecessary in uncomplicated thyroid surgeries with adequate hemostasis.

Keywords: Multinodular goiter, subtotal thyroidectomy, drain placement, Postoperative pain, Hospital stay

UG-PP-160 — SUN-613 Regional Disparities In Mortality And Disability-Adjusted Life Years (Dalys) Due To Type 1

Diabetes In Adolescents And Young Adults From 1990 To 2021: A Global Burden Of Disease Study

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Background & Objectives: Type 1 diabetes mellitus (T1DM) is a chronic autoimmune disease associated with considerable morbidity and premature mortality, particularly among adolescents and young adults. The burden of T1DM differs across regions due to variations in healthcare access, socioeconomic development, and disease management. This study evaluated trends in T1DM-related Disability-Adjusted Life Years (DALYs) and mortality across 26 global regions from 1990 to 2021.

Methods: Data were obtained from the Global Burden of Disease (GBD) Study (1990–2021). DALYs and mortality rates per 100,000 population were analyzed for individuals aged 15–39 years across 26 regions categorized by Sociodemographic Index (SDI). Trends were assessed using Average Annual Percentage Change (AAPC), with statistical significance defined by p-values. Uncertainty was expressed using 95% confidence intervals (CIs).

Results: In CI: 256,144–349,670), rising to 382,857 by 2021 (AAPC = 0.15; $p < 0.000001$). By 2021, the largest DALY

burden had shifted to the Low-Middle SDI region (419,772; 95% CI: 344,307–495,496), despite an overall declining trend (AAPC = –2.93; $p < 0.000001$). Oceania consistently exhibited the lowest DALYs across both time points. Mortality was highest in the Middle SDI region in 1990 (3,758 deaths; 95% CI: 3,343–4,332) and in South Asia in 2021 (5,189 deaths; 95% CI: 4,272–6,087). Australasia and Oceania had the lowest mortality rates. 1990, the Middle SDI region reported the highest DALYs due to T1DM (298,352; 95%)

Conclusion: From 1990 to 2021, the global burden of T1DM shifted toward low- and middle-SDI regions, underscoring the need for targeted interventions and improved diabetes care in high-burden areas.

Keywords: Type 1 Diabetes, DALYs, Mortality Trends, Global Health, Regional Disparities

UG-PP-161 — Supra-Annular Versus Intra-Annular Valves in Transcatheter Aortic Valve Implantation: A Systematic Review and Meta-Analysis

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Background & Objectives: This study aims to systematically compare the safety and efficacy of supra-annular self-expanding valves (SA-SEV) and intra-annular (IA-SEV) in patients with small aortic annuli (SAA) undergoing Transcatheter aortic valve implantation (TAVI).

Methods: A systematic search of the PubMed, Embase, and Cochrane databases was conducted. The outcomes assessed were all-cause mortality, device success, and technical success. Statistical analyses were performed using Review Manager 5.4.1; bias assessed via Cochrane and Newcastle-Ottawa scales.

Results: Four observational studies with 1,720 patients showed no significant difference in all-cause mortality, secondary outcomes were also similar. Major bleeding was lower with SA-SEV (RR 0.58; $P=0.05$), but not statistically significant.

Conclusion: SA-SEV and IA-SEV show comparable safety and efficacy profiles. The choice of valve should be tailored based on anatomical and procedural considerations. Additional randomized studies are necessary to confirm these findings and enhance clinical decision-making.

Keywords: Small Aortic Annulus, Supra-Annular Valve, Intra-Annular Valve.

UG-PP-162 — Survey of Awareness and Perception of Biochemical Factors Influencing Mental Health Among Medical and Dental Students

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Background & Objectives: Mental health disorders are increasingly prevalent among university students, particularly those pursuing medical and dental education due to substantial academic and environmental stressors. Biochemical factors such as neurotransmitter imbalances, hormonal fluctuations, and stress-related physiological changes significantly contribute to the development of mental health conditions, including depression and anxiety. Despite belonging to health-related disciplines, gaps in understanding these biological mechanisms may exist among students. This study aimed to evaluate the awareness and perception of biochemical factors influencing mental health among medical and dental students.

Methods: A cross-sectional study was conducted using an online structured questionnaire comprising ten questions

distributed among 300 medical and dental students from various institutions. The questionnaire assessed knowledge regarding neurotransmitters involved in depression and the influence of institutional and environmental factors on mental health. Data were analyzed using descriptive statistical methods.

Results: The findings indicated that only a proportion of students demonstrated adequate awareness regarding the impact of institutional and environmental factors on mental health. Notable knowledge gaps were identified, as several participants lacked understanding of the role of neurotransmitters in depression.

Conclusion: The study reveals moderate awareness but considerable deficiencies in fundamental biochemical knowledge related to mental health among future healthcare professionals. Strengthening mental health education within medical and dental curricula may enhance scientific understanding and promote improved mental health literacy.

Keywords: Mental Health, Biochemical Factors, Awareness, Medical Students, Dental students.

UG-PP-163 — Temporal Trends of Epidemiological Characteristics in Patients of Traumatic Spinal Cord Injury (Pakistan, 2010-2025)

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Background & Objectives: Traumatic spinal cord injury (TSCI) poses substantial burden on healthcare system by contributing to long term disability and functional

deficits. Understanding the temporal epidemiological trends of traumatic Spinal cord injury is essential for developing effective prevention strategies and optimizing trauma care frameworks.

Methods: A retrospective analysis of registered cases from 2010 to 2025 was conducted at Paraplegic Center, Peshawar. A total of 8,928 cases were enrolled, of which, 6,328 sustained TSCI. Patients with non traumatic spinal cord injury were excluded. Descriptive statistics and temporal trend analysis was performed using R statistical software.

Results: The mean age of TSCI patients were 32.5 ± 14 years, with males predominance (81.4%). Geographically, most of the cases were reported from Khyber Pakhtunkhwa (91.8%), with falls identified as the predominant mechanism of injury (57%). The **injury level** was most commonly at the cervical **and lumbar regions**. Annual TSCI incidence demonstrated a statistically significant increasing trend over the study period ($p < 0.001$). Whereas the mean age showed no significant change over the time ($p = 0.524$). The distribution of TSCI demonstrated significant temporal changes over the years, with road traffic accidents and falls as the primary contributors ($p < 0.001$).

Conclusion: TSCI in Pakistan predominantly affected young adult males from Khyber Pakhtunkhwa, primarily attributable to falls and RTA, with a high burden of severe cervical and lumbar lesions. TSCI demonstrated a significant increase in incidence over time without a corresponding change in mean age. Therefore, focused public health interventions and preventive measures are essential to reduce the burden of TSCI and enhance patient outcomes.

Keywords: Epidemiological characteristics, cervical and lumbar lesions

UG-PP-164 — Effect of Theraband-Assisted Treadmill Training on Balance and Gait Outcomes in Stroke Patients: A Randomized Controlled Trial

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Background & Objectives: The aim of the study was to determine the effects of theraband assisted treadmill training on the outcome measures of balance and gait in stroke patients.

Methods: A randomized controlled trial was conducted on 47 stroke patients at Rehman Medical Institute, Peshawar. Theraband during treadmill training was applied to the experimental group for 5 days per week for duration of 4 weeks. Pre and post-intervention data was collected for various gait and balance outcome tools like FRT, 10MWT, DGI and TUG test. Data was analyzed using SPSS version 25.

Results: Total of 47 stroke patients consisting of 26 males and 21 females participated in this study. The mean age of the participants was 54.82 ± 5.96 years. Statistically significant improvements were noted for 10MWT from pre to post-intervention for both between the control and experimental groups ($p < 0.005$) and within the groups ($p < 0.001$). Similarly significant improvements were noted in TUG scores for between the groups analysis ($p < 0.005$) and within in the group analysis for control group ($p < 0.001$), while no significant

improvement was shown within the experimental group ($P < 0.001$). This study showed no significance in FRT scores for between the groups analysis ($p > 0.005$) and statistical significance was found for within the groups analysis of both the experimental and control groups ($p < 0.001$). This study also found no statistical significance for DGI scores for between the experimental and control groups ($p > 0.005$), while improvement in scores were noted for pre and post intervention values for within the groups analysis of experimental and control groups ($p < 0.001$).

Conclusion: It has been shown that treadmill training with theraband has a great impact on improving the speed, ultimately showing improvements in gait of patients, while no significant improvement was noted in dynamic balance of patients.

Keywords: Treadmill Training, Gait Training, Theraband Assistance, Balance outcomes, Gait outcomes

UG-PP-165 — The Itchy Truth: Correlation Between Ocular Rubbing Intensity and Clinical Severity of Vernal Keratoconjunctivitis in Pediatric Patients

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Background & Objectives: Vernal Keratoconjunctivitis (VKC) is a recurrent, chronic allergic ocular condition predominantly affecting children in warmer regions. It is characterized by severe itching, redness, tearing, and photophobia. In response to intense pruritus, patients often engage in habitual ocular rubbing, which may worsen inflammation and contribute to disease

progression. Although rubbing is commonly observed in VKC patients, its correlation with clinical severity remains underexplored. This study aims to bridge this gap and emphasize the need for behavioral awareness in disease management.

To assess the correlation between ocular rubbing intensity and clinical severity of VKC in pediatric patients aged 5–15 years.

METHODS: This cross-sectional study was conducted at ophthalmology outpatient departments of tertiary care hospitals in Peshawar. A total of 84 pediatric patients diagnosed with VKC were recruited through non-probability convenient sampling. Ocular rubbing intensity was assessed using a structured parent-assisted questionnaire measuring frequency, duration, and force of rubbing episodes. VKC severity was graded using the Bonini scale, which includes both clinical symptoms and ocular signs. Data were entered and analyzed in SPSS version 25. Spearman's correlation coefficient was used to evaluate the relationship between rubbing intensity and VKC severity.

RESULTS: Among 84 participants, 68% were male and 32% female, with a mean age of 9.3 ± 2.1 years. Most cases presented with moderate to severe VKC. A statistically significant positive correlation ($r = 0.63$, $p < 0.01$) was observed between ocular rubbing intensity and VKC severity scores. Patients with higher rubbing scores showed pronounced conjunctival hyperemia, papillary hypertrophy, and limbal inflammation. The frequency and force of eye rubbing were strongest in children with severe VKC.

CONCLUSION: Increased ocular rubbing intensity is significantly associated with higher clinical severity in VKC. Since eye rubbing is

a modifiable behavioral factor, early intervention and counseling can play a crucial role in reducing disease progression and improving quality of life in pediatric patients.

KEYWORDS: Vernal keratoconjunctivitis, ocular rubbing, pediatric allergy, Bonini scale, eye inflammation

UG-PP-166 — The Rising Burden of Oral Squamous Cell Carcinoma in Sindh: A Five-Year Review of Clinical and Epidemiological Data

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Backfround & Objective: To identify the epidemiological trends, clinical manifestations, and associated risk factors of Oral Squamous Cell Carcinoma (OSCC) in the rural population of Sindh, Pakistan, over a 5year period (2014-2018). Additionally, to determine the association between tumor staging, grading, and patient demographics.

Methods: A retrospective, cross-sectional study. The study was conducted at the Nuclear Institute of Medicine and Radiotherapy (NIMRA), Liaquat University Hospital, Jamshoro, from January 2014 to December 2018. We retrieved all confirmed cases of OSCC from hospital records. Data were collected on the patients' demographics (gender, age, region), clinical manifestations (growth, ulcer, pain, etc.), tumor site, stage, and histological grade. Descriptive statistics and Fisher exact tests were employed by using SPSS version 26.

Results: Between 2014 and 2018, the incidence of oral squamous cell carcinoma (OSCC) in the Sindh district rose significantly, totaling 3,494 cases. Annual diagnoses increased from 573 cases (16.4%) in 2014 to 952 cases (27.3%) in 2018 ($p < 0.001$), with Hyderabad accounting for 31.1% of cases. The majority of patients were male (63.7%), with a mean age of 49.61 years, and 44.5% were over 50. A majority of patients presented with ulceration (38.9%), frequently accompanied by habitual use of substances like tobacco (smoking – 29%), Ghutka/Mainpuri (27.9%), and Pan/Supari (20.7%), indicating an association between clinical features and underlying risk factors. Tumor laterality favored the left side (56.9%), while well-differentiated tumors constituted 44.9%. Alarminglly, poorly differentiated tumors increased from 9.8% in 2014 to 27.5% in 2018 ($p < 0.001$), and advanced-stage diagnoses surged, with T4 tumors rising from 41% to 52.6% ($p < 0.01$). Furthermore, lymph node involvement and distant metastasis also increased ($p < .05$).

Conclusion: The study reveals alarming emerging trends of Oral Squamous Cell Carcinoma (OSCC) in Sindh, Pakistan, marked by a significant rise in incidence from 2014 to 2018. These findings highlight a growing public health concern, particularly in rural populations, where limited awareness and healthcare access may contribute to delayed diagnoses and poorer outcomes. To address this increasing burden, there is a need for targeted healthcare initiatives, including early detection programs, community-based screening, and accessible treatment facilities in underserved areas. Additionally, public education campaigns focusing on modifiable risk factors—such as tobacco, Ghutka, and Pan/Supari use—should be prioritized.

Continued research is also recommended to monitor trends, identify high-risk populations, and develop evidence-based prevention strategies.

Keywords: Oral cancer, OSCC, Sindh, Pakistan

UG-PP-167 — To Assess Nutritional Status Among School-Going Children Using Anthropometric Measures in Peshawar

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Background and Objectives: Nutritional status is defined as the result of the complex interaction between food intake, overall health, and the social and physical environment, influencing an individual's survival, growth, health, and well-being. In 2020, an estimated 149.2 million children under five years were afflicted by stunting. 45.4 million were wasted, and 38.9 million were overweight. While the prevalence of stunting is steadily declining in most regions, it remains a persistent issue in Africa. More than half of the global burden of wasting is concentrated in Southern Asia, and together with the rest of Asia, accounts for over three-quarters of all severe wasting cases. The objective of this study is “To assess nutritional status among school-going children using anthropometric measures in Peshawar, Pakistan”.

Methods: Cross-sectional study design. The setting for the study was in Schools in the District of Peshawar. Subjects for the study were school-going children between the ages of 10-17 years. Data was collected in the form of socio-demographic data and anthropometric measures. Collected data was analyzed by SPSS version 26. Outcome measures were Body Mass Index and Mid Upper Arm Circumference.

Results: There was a total of 300 school-going children, with 150 male and 150 female participants. The results indicate that 141 students have a healthy BMI and 248 have normal MUAC. There was also an association between the outcome variables (BMI and MUAC) and some of the independent variables (gender, class, and age).

Conclusion: The majority of the students with disabilities have a healthy Body Mass Index and Mid Upper Arm Circumference.

Keywords: Anthropometric Measurements. Mid Upper Arm Circumference, Nutritional Status

UG-PP-168 — Trends and Disparities in Mortality Involving Secondary Brain Metastases Associated With Underlying Lung Carcinoma in the United States: A Retrospective CDC Wonder Analysis (1999-2023)

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Background&Objectives: Lung cancer is the most common malignancy associated with brain metastases, a complication that markedly

increases morbidity and mortality. Evaluating long-term mortality trends related to brain metastases is essential for identifying health disparities. This study examined trends in brain metastasis-related mortality among individuals aged ≥ 25 years with lung carcinoma in the United States from 1999 to 2023, focusing on demographic and geographic differences.

Methods: Mortality data were obtained from the CDC Wide-ranging Online Data for Epidemiologic Research (CDC-WONDER) database. Deaths due to secondary brain metastases in patients with underlying lung carcinoma were analysed. Age-adjusted and crude mortality rates were stratified by sex, race/ethnicity, age group, urban-rural residence, census region, and state. Joinpoint regression analysis was used to calculate annual percentage changes (APCs) and average annual percentage changes (AAPCs).

Results: From 1999 to 2023, 176,760 deaths occurred among U.S. lung carcinoma patients with secondary brain metastases. Overall mortality declined steadily. Male age-adjusted mortality rates (AAMRs) decreased by 44% (4.3 to 2.4 per 100,000), while female AAMRs declined by 19% (2.6 to 2.1 per 100,000). Non-Hispanic African Americans demonstrated the greatest annual decline (-2.27%), whereas Asian and Pacific Islanders showed a slight, non-significant increase ($+0.76\%$). Mortality rates were consistently higher in rural areas than in urban areas. Regionally, the Midwest had the highest mortality, and the West had the lowest.

Conclusion: Despite overall declines, persistent demographic and regional disparities remain, underscoring the need for targeted research and policy interventions, particularly for men, non-Hispanic African Americans, rural populations, and residents of the Midwest.

Keywords: Mortality Trends, Secondary Brain Metastases, CDC Wonder, Joinpoint Analysis, Lung Carcinoma, United States

UG-PP-169 — Trends and Sex-Specific Disparities in Non-Alcoholic Fatty Liver Disease Mortality in South Asia: Global Burden of Disease Analysis with Machine Learning Forecasting to 2050

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Background & Objectives: Non-alcoholic fatty liver disease (NAFLD) is a leading cause of chronic liver disease and metabolic mortality, yet long-term patterns and sex-specific disparities remain poorly characterized in South Asia.

Methods: We analyzed Global Burden of Disease 2023 estimates to assess trends and forecast NAFLD mortality through 2050. Age-standardized mortality rates (ASMRs) from 1990–2023 were evaluated, with Estimated Annual Percentage Change (EAPC) calculated. Sex-stratified analyses were conducted regionally and for Bangladesh, Bhutan, India, Nepal, and Pakistan.

Results: Forecasts were generated using SARIMA time-series models with 95% prediction intervals. Overall, regional ASMR declined marginally from 0.81 to 0.77 per 100,000 (EAPC -0.18%), driven by significant reductions in females (0.90→0.80; EAPC -0.39%), whereas male mortality remained stable (0.72→0.73; EAPC 0.01%). Country-

level trends varied: Bangladesh declined most sharply (EAPC -1.52%), Bhutan (1.01%) and Nepal (1.11%) increased, while India and Pakistan were stable. Forecasts to 2050 suggest a modest regional decline to 0.62 per 100,000, although male-predominant increases may persist in Nepal. Widening prediction intervals highlight increasing uncertainty over time. These findings indicate largely stable regional NAFLD mortality masking heterogeneity and emerging male excess in specific countries.

Conclusion: Strengthened surveillance, sex-specific metabolic disease interventions, and targeted prevention strategies are urgently required to mitigate future burden.

Keywords: NAFLD, mortality trends, South Asia, sex disparities, GBD, forecasting

UG-PP-170 — Trends in Mortality Due to Myocardial Infarction With Coexisting Influenza Among Adults Aged 65 in the United States: A CDC-Based Retrospective Analysis (1999-2024)

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Purpose: Myocardial infarction (MI) remains a leading cause of death among older adults, and concurrent influenza infection may exacerbate cardiovascular risk. Using U.S. national mortality data from 1999-2024, this study assessed long-term trends and

demographic differences in deaths attributed to MI with coexisting influenza among adults aged ≥ 65 years.

Methods: This retrospective, population-based study analyzed mortality data from the CDC WONDER Multiple Cause of Death database from 1999 through 2024. Deaths were identified using ICD-10 codes for myocardial infarction (I21) with influenza (J09-J18) listed as a contributing cause. Age-adjusted mortality rates (AAMRs) were calculated per 100,000 and classified into sex, age group, race and ethnicity, census region, and metropolitan status. Trends over the 26-year period were analyzed descriptively, with focus on key changes over time.

Results: Overall mortality among adults aged ≥ 65 years with myocardial infarction and coexisting influenza declined from 1999 to 2024, with age-adjusted mortality rates (AAMR) decreasing from 23.9 in 1999 to 7.1 in 2024. Mortality remained higher in men than women (34.0 vs 18.3 in 1999 and 11.5 vs 6.5 in 2024). The highest AAMRs were observed among individuals aged ≥ 85 years throughout the study period. The South showed the greatest regional variation (24.0 to 9.7), while Asian or Pacific Islander individuals demonstrated the largest racial/ethnic decline (24.7 to 7.7). Mortality remained consistently higher in non-metropolitan areas.

Conclusion: Mortality from myocardial infarction with coexisting influenza among U.S. adults aged ≥ 65 years has generally declined over the past two decades; however, significant demographic and geographic imbalances remain. These findings highlight the importance of multidisciplinary cardiovascular risk management, influenza

prevention through vaccination, and accessible healthcare for older adults.

Keywords: Myocardial infarction, influenza, older adults, mortality trends, age-adjusted mortality rate, CDC WONDER.

UG-PP-171 — Trends in Mortality From Pulmonary Embolism With Hypertension, United States (1999-2023)

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Background & Objectives: Pulmonary embolism (PE) population remains a leading cause of cardiovascular death, and its increasing comorbidity with hypertension has fatal outcomes. It is essential to get long-term mortality trends in order to inform health policy and prevention. The aim of study was to assess national trends in PE-related mortality with hypertension in the United States between 1999 and 2023, using mortality records from CDC WONDER databases, which included all deceased with PE listed as an underlying cause of death and hypertension as a contributing cause of death.

Methods: A retrospective trend analysis was conducted using national death certificate records obtained from CDC WONDER

databases, included all deceased with PE as an underlying cause of death comorbid with hypertension. AAMR was calculated using U.S. standard population, and temporal trends were examined for sex, age, races, census, urbanization, and states using joinpoint regression and trend analyses to assess changes over time.

Results: From 1999 to 2023, PE and hypertension resulted in 120,326 deaths. The AAMR increased from 0.81 in 1999 to 3.52 in 2023, with an overall percent change of 5.93%. Mortality rates were higher in males than females (3.86 vs 3.22 in 2023) highest among older adults, and elevated among non-Hispanic Black individuals. Geographic differences were noticed, with higher mortality in metropolitan areas, southern census regions, and selected states. In conclusion, the study highlights hypertension as a primary modifier of PE mortality, emphasizing the need for integrated cardiovascular and thromboembolic risk management strategies.

Conclusion: Strengthening hypertension control, enhancing early PE diagnosis, and bridging demographic gaps may decrease avoidable deaths. Future research should emphasize impact of targeted prevention and treatment interventions on PE-related mortality trends.

Keywords: Pulmonary embolism; Hypertension; Mortality trends; Population-based study; United States; Cardiovascular risk

UG-PP-172 — Trends in Ovarian Cancer-Related Mortality Among Women of Reproductive Age (15-49) From 1999-2021: Comparative Analysis of Hispanic and Non-Hispanic Populations

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Background & Objectives: Ovarian cancer sustains a substantial community health challenge amongst females of fertile age range in the United States. Ovarian cancer is the 18th most common cancer and 8th most typical cancer in females across the globe. This study examines patterns in ovarian cancer-related fatality rates among females aged 15 to 49 from 1999 to 2021.

Methods: The research utilises historical cohort study techniques using CDC WONDER data, calculating unadjusted and standardized death rates with joinpoint regression analysis. The CDC wonder online database serves as the data extraction center that obtains death records.

Results indicate an overall decline in ovarian cancer-related mortality (38.5% decrease, 1,254 deaths in 2002 vs. 729 in 2021). Hispanic women aged 40-44 showed significant increases in mortality (APC: 1.78; $p = 0.028$), contrasting with declines in non-Hispanic women aged 45-49 (APC: -4.10; $p < 0.000001$). The overall reduction indicates improvements in early detection, treatment, and public health initiatives. **Conclusion:** However, persistent ethnic disparities highlight the need for focused initiatives to address medical services inequities among Hispanic and non-Hispanic populations.

Keywords: Ovarian cancer, Mortality trends, Reproductive age, Hispanic women, Non-Hispanic women, Health disparities.

UG-PP-173 — Trends in Pulmonary Hypertension and Valvular Heart Disease-Related Mortality Rates Among Older Adults Aged 65 in the United States (1999-2020)

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Background & Objectives: Pulmonary Hypertension (PH) affects approximately 1% of the global population, increasing to 10% among adults aged ≥ 65 years. PH may develop secondary to multiple underlying causes, including valvular heart disease (VHD), which is implicated in 15–60% of cases. This study aimed to evaluate long-term temporal trends in U.S. mortality attributed to PH due to VHD.

Methods: A retrospective analysis of U.S. CDC mortality data (1999–2020) was performed for adults aged ≥ 65 years using ICD-10 codes. Age-adjusted mortality rates (AAMR) per 100,000 and average annual percent changes (AAPC) were calculated using Joinpoint regression models.

Results: Between 1999 and 2020, 29,193 PH and VHD-related deaths were identified, with AAMR rising from 1.6 (95% CI: 1.5–1.7) in 1999 to 4.6 (95% CI: 4.4–4.8) in 2020 across two periods: 1999–2009 [APC: 6.69; $P < 0.000001$] and 2009–2020 [APC: 3.97; $P < 0.000001$]. Women had higher AAMR [3.3] than men [2.9]. NH-White individuals showed the highest AAMR [3.3], followed by NH-Black [2.2], American Indian/Alaska Native [1.8], Hispanic/Latino [1.8], and NH-

Asian/Pacific Islander [1.6]. Regional analysis revealed highest AAMRs in West [3.9] and Midwest [3.5], with nonmetropolitan and small metropolitan areas demonstrating elevated rates. State-wide AAMRs ranged from 8.5 in Vermont to 1.3 in Alabama.

Conclusion: These findings indicate a concerning rise in PH and VHD-related mortality with persistent disparities by sex, race, and geography. Targeted preventive strategies and early diagnosis are urgently needed to mitigate these burdens.

Keywords: Pulmonary Hypertension, Valvular Heart Disease, Mortality, Epidemiology, United States, Elderly

UG-PP-174 — Type 2 Diabetes Care: Knowledge and Clinical Practice Among Medical Practitioners at Medical Teaching Institute Mardan, Pakistan — A Cross-Sectional Study

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Background & Objectives: Type 2 Diabetes Mellitus (T2DM) poses a major health burden in Pakistan, where a shortage of endocrinologists places the responsibility of care on medical practitioners. Global studies reveal significant gaps in GP knowledge and practices. However, no such data exists for Pakistan, particularly in the Mardan region.

Methods: This analytical cross-sectional study was conducted at Mardan Medical Complex, Pakistan, between January and March 2025, targeting licensed medical practitioners who had completed their MBBS and one-year

internship. Participants were recruited using convenience sampling, and data were collected through a 34-item questionnaire covering demographics, T2DM knowledge, practices, barriers, confidence, and attitudes. Statistical analyses were performed in SPSS (IBM v27.0), using descriptive statistics and logistic regression, with a significance level of $p < 0.05$.

Results: A total of 178 medical practitioners participated. The mean diabetes knowledge score was 9.05 ± 2.52 out of 14. Significant predictors of higher knowledge included managing >40 diabetic patients per week ($p = 0.002$), and working in medical rather than surgical specialties ($p = 0.007$). Years of practice was also a significant predictor ($p = 0.043$). Only 52.8% correctly identified the diagnostic HbA1c threshold ($\geq 6.5\%$), 64.6% the fasting glucose cut-off (≥ 126 mg/dL), 74.72% the random glucose level (≥ 200 mg/dL). While Caring for Diabetes patients 97.8% advised lifestyle modification and 91% utilized HbA1c testing, only 51.1% routinely performed foot exams. Major reported barriers included high treatment costs (84.8%), poor patient compliance (81.5%), limited specialist access (52.8%), and absence of clinical protocols (50.6%). Importantly, 93.3% of practitioners expressed willingness to attend diabetes-focused CME programs.

Conclusion: Medical practitioners at public hospitals show moderate knowledge of type 2 diabetes, with good awareness of symptoms but notable gaps in diagnosis, guideline adherence, and complication screening.

Keywords: Diabetes mellitus type 2; Knowledge; Medical practitioners; Practice; Primary care; T2DM.

UG-PP-175 — Urogenital Anomalies Among Men Presenting With Primary

Infertility: Insights From Tertiary Care Urology Clinics in Peshawar, Pakistan

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Background & Objectives: The failure to conceive after one year of regular, unprotected sexual activity is commonly accepted as a definition of infertility. In Pakistan, male factors account for about 18% of infertility cases, with urogenital abnormalities being the leading cause. Despite its growing impact, this issue remains largely overlooked. The objective of the study was to determine the frequency of clinical urogenital anomalies contributing to primary infertility among men attending a tertiary-care infertility clinics in Peshawar.

Methods: This descriptive cross-sectional study was conducted at the Infertility Clinics of Urology, Institute of Kidney Diseases and Maqsood Medical Complex, Peshawar. A total of 91 patients, aged 20-50 years with primary male infertility diagnosed on clinical history and examination by a consultant urologist were included. SPSS version 23 was used for analysis. Mean±SD was calculated for quantitative variables, while frequencies and percentages were calculated for qualitative variables.

Results: Out of the total 91 patients, 59 (64.8%) had urogenital abnormalities. The mean age of the patients was 31.68±7.41 years, while the mean duration of infertility was 4.66±1.82 years. Urogenital anomalies in patients with primary male infertility showed no relationship with age (p=0.958), duration of infertility (p=0.097), medical history (p=0.768), and surgical history of patients (p=1.92), respectively.

Conclusion: The most common clinical presentation of urogenital anomaly observed was varicocele, followed by cryptorchidism and hypospadias; however, further large multicenter studies are warranted to see the relation between these anomalies and male infertility.

Keywords: Cryptorchidism; Hypospadias; Male Infertility; Urogenital Anomalies; Varicocele

UG-PP-176 — Well-Begun Is Only Half-Done: Revision Bronchoscopy After Bronchoscopic Lung Volume Reduction

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Background and Objectives: Bronchoscopic lung volume reduction (BLVR) is a minimally invasive therapy for patients with severe emphysema and has been shown to improve pulmonary function, exercise capacity, and quality of life. Potential complications include pneumothorax, persistent air leak, pneumonia, hemoptysis, respiratory failure, pleural effusion, and valve migration. We present a case of symptomatic endobronchial valve migration requiring

revision bronchoscopy, underscoring the importance of structured post-procedural follow-up.

Methods: A 70-year-old former smoker (40 pack-years) with severe COPD (FEV1 29%, TLC 137%, RV 228% predicted) and chronic hypoxic respiratory failure on 2 L oxygen presented with functionally limiting dyspnea (mMRC 3). CT imaging demonstrated severe centrilobular emphysema with 90% right major fissure completeness. Minimal collateral ventilation was confirmed using Chartist assessment. Flexible bronchoscopy with placement of five endobronchial valves in the right lower lobe was performed without immediate complications. Clinical and radiographic follow-up were conducted.

Results: The patient reported significant symptomatic improvement two weeks post-procedure. Five months later, she presented with worsening dyspnea and COPD exacerbation. CT imaging revealed migration of a valve from RB6 to the right lower lobe truncus basalis. Revision bronchoscopy confirmed displacement. The migrated valve was removed intact, while the remaining four valves were appropriately positioned. Two additional endobronchial valves were placed distally in the right lower lobe without complications.

Conclusion: BLVR provides meaningful symptomatic benefit in advanced emphysema; however, ongoing surveillance is essential to identify delayed complications such as valve migration. Prompt recognition and revision bronchoscopy can restore therapeutic benefit and optimize long-term outcomes.

Keywords: bronchoscopic lung volume reduction, endobronchial valve, emphysema,

COPD, valve migration, revision bronchoscopy

UG-PP-177— Wisdom in Crisis: Evaluating Third Molars Impaction Patterns and Associated Pathologies on OPGs in Peshawar-Based Population

Background & Objectives: Impacted third molars (wisdom teeth) represented one of the most frequently encountered conditions in dental practice and were often associated with a range of pathological complications. These included pericoronitis, dental caries, periodontal disease, cyst formation, and root resorption of adjacent teeth, which could compromise both oral and systemic health if left untreated. Given their high prevalence, understanding the pattern and consequences of third molar impactions was essential for effective clinical management and prevention of severe outcomes such as facial space infections. Radiographic assessment using orthopantomograms (OPGs) provided a reliable method for evaluating impaction characteristics and related pathologies. This study aimed to investigate the prevalence, patterns, and associated conditions of impacted third molars in a Peshawar-based population. The primary objective of this study was to determine the prevalence of impacted third molars and identify their patterns according to established classifications. Additionally, the study aimed to evaluate associated pathological findings and examine demographic distributions, including age, sex, and jaw-related variations among patients in Peshawar.

Methods: A retrospective observational study design was employed over a three-month period using convenience sampling. Approximately 500 patients aged 20 years and above presenting with impacted third molars

were included in the study. Radiographic data were obtained from OPGs collected at participating dental institutions. Patients with normally erupted or absent third molars, or incomplete records, were excluded. Variables including impaction type, angulation, anatomical location, and associated pathologies were documented. Data were entered and analyzed using SPSS software to determine prevalence rates, distributions, and potential associations.

Results: The study showed that 16.1% (n=10) of the total maxillary third molar impactions were observed in females, while 4.8% (n=3) were found in males. In contrast, mandibular third molar impactions were more common, with 45.1% (n=28) occurring in females and 83.8% (n=52) in males.

Among the pathologies associated with impacted third molars, 8.1% (n=5) were found to be carious. Dentigerous cysts were relatively rare, accounting for 1.6% (n=1) of the cases. Bone resorption related to impacted third molars was observed in 4.8% (n=3) of the patients. Additional findings included odontomes, which were present in 1.6% (n=1) of the cases, while hyperdontia was noted in 3.2% (n=2) of the cases. Regarding the pattern of impaction, 46.8% (n=29) of the cases showed bilateral impaction, whereas 51.6% (n=32) exhibited unilateral impaction. A very small proportion, 1.6% (n=1), had all four third molars impacted. These findings highlight variations in the distribution, associated pathologies, and patterns of third molar impactions among the studied population.

Conclusion: In conclusion, mandibular third molar impactions were more common than maxillary impactions in the studied population. Impactions were observed more frequently in

males for the mandible and in females for the maxilla. Unilateral and bilateral impactions were the most common patterns. Associated pathologies were relatively rare, with dental caries being the most frequent finding. Early detection and evaluation of impacted third molars are important to prevent potential complications.

Keywords: facial space infections, Radiographic, pathologies

UG-PP-178 — Pharmacist Interventions in Clinical Practice: An Observational Analysis

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Background & Objective: Medication errors are a global concern, causing preventable harm, prolonged hospital stays, and increased healthcare costs. Pharmacist-led interventions are crucial in preventing these errors, ensuring safer prescribing, improving outcomes, and promoting cost-effective care. Evaluating their impact is essential for optimizing patient safety practices.

Methods: A retrospective study was conducted at Shaukat Khanum Memorial Cancer Hospital and Research Centre, Peshawar, analyzing 13,651 pharmacist-led interventions from January to June 2025. Data on interventions addressing prescribing errors were collected by reviewing documented prescriptions.

Results: A total of **13,651** interventions were documented: 55% in females and 45% in

males. Most occurred in outpatient (n=8,057; **59%**) and inpatient (n=5,594; **41%**) settings. Internal Medicine contributed the largest share (n=6,848; **50.2%**), followed by Medical Oncology (n=2,306; **16.9%**) and Pediatric Oncology (n=1,623; **11.9%**). Adults accounted for **86.5%**, pediatrics **13.5%**. The most frequent interventions were inappropriate dose (n=5,215; **38.2%**), inappropriate schedule (n=3,701; **27.1%**), and dosage calculation errors (n=807; **5.9%**), mostly in solid (**51%**), parenteral (26%), and liquid (**18%**) forms. Top drugs included paracetamol (**12%**), omeprazole (**7%**), and metoclopramide (**6%**). Acceptance was high (**93.4%**), with minimal rejection (**2.9%**). From an economic standpoint, the interventions resulted in an estimated **cost saving of about 4 million PKR over six months. 3.55 million PKR** saved from general overall interventions and **0.44 million PKR** saved from Pharmacist-Led IV-to-Oral Interventions. Chi-square tests confirmed significant associations across specialties, patient groups, and intervention types (**p<0.001**).

Conclusion: Pharmacist-led interventions markedly improved prescribing safety, with high prescriber acceptance and substantial cost savings. By primarily targeting dose- and schedule-related errors, pharmacists played a pivotal role in optimizing therapy, preventing medication errors, and promoting safer, more cost-effective care in oncology and other complex clinical settings.

Keywords: Pharmacist interventions, Medication errors, Patient safety, Prescribing errors, Oncology.

UG-PP-179 — Comparative Analysis of Robot-Assisted Minimally Invasive Esophagectomy Versus Conventional

Minimally Invasive Esophagectomy: A Systematic Review and Meta-Analysis

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Background & Objectives: Robot-assisted minimally invasive esophagectomy (RAMIE) has the potential to improve intraoperative visualization and lymph-node dissection compared with conventional minimally invasive esophagectomy (cMIE). However, its comparative clinical effectiveness remains uncertain.

Methods: A PRISMA-compliant systematic review and meta-analysis was conducted on randomized controlled trials and propensity score-matched cohort studies comparing RAMIE with cMIE (January 2013–August 26, 2025). Searches were performed in PubMed, Embase, the Cochrane Library, and Web of Science. Continuous outcomes were pooled as mean differences (MD) and dichotomous outcomes as risk ratios (RR) using random-effects models, with heterogeneity assessed using I^2 . Risk of bias was evaluated using RoB-2 for randomized trials and the Newcastle–Ottawa Scale for cohort studies.

Results: Twenty-five studies involving approximately 8,900 patients (RAMIE $\approx$ 4,200; cMIE $\approx$ 4,700) were included. RAMIE was associated with a longer total operative time (MD 38.91 minutes, 95% CI 16.05–61.76; $p = 0.0008$; $I^2 = 97\%$), although thoracic operative time alone did not differ significantly (MD 16.18 minutes, 95% CI –2.46 to 34.82; $p = 0.09$; $I^2 = 94\%$). Estimated blood loss was slightly lower in RAMIE (MD –12.73 mL, 95% CI –25.25 to –0.21; $p = 0.05$; $I^2 = 86\%$). RAMIE yielded a higher total lymph node

harvest (MD 2.01 nodes, 95% CI 1.05–2.96; $p < 0.001$; $I^2 = 57\%$), particularly along the left recurrent laryngeal nerve (MD 0.60, 95% CI 0.13–1.08; $p = 0.01$), whereas right-sided lymph node retrieval was similar. Early mortality was comparable between approaches, including in-hospital mortality (RR 0.76, 95% CI 0.42–1.39; $p = 0.38$; $I^2 = 0\%$) and 90-day mortality (RR 0.97, 95% CI 0.53–1.77; $p = 0.91$; $I^2 = 0\%$). Overall postoperative complications were similar (RR 0.90, 95% CI 0.79–1.02; $p = 0.09$), with trends toward fewer pulmonary complications (RR 0.88, 95% CI 0.76–1.02; $p = 0.10$) and lower recurrent laryngeal nerve palsy (RR 0.79, 95% CI 0.62–1.00; $p = 0.05$). Length of hospital stay was shorter with RAMIE (MD –1.28 days, 95% CI –2.26 to –0.34; $p = 0.01$; $I^2 = 84\%$), whereas ICU stay was longer (MD 2.68 days, 95% CI 0.51–4.84; $p = 0.02$; $I^2 = 98\%$). Publication bias signals identified for thoracic operative time and length of stay were attenuated following sensitivity analysis.

Conclusion: Both RAMIE and cMIE are safe and effective approaches to esophagectomy. RAMIE is associated with longer operative duration but improved lymph-node harvest, reduced intraoperative blood loss, and a shorter overall hospital stay, with comparable early mortality and major complication rates. These findings support individualized, patient-centered procedural selection based on institutional expertise and surgeon learning curve.

Keywords: Robotic surgery, Minimally invasive esophagectomy, Esophageal cancer, Postoperative outcomes, Meta-analysis

UG-PP-180 — Closed-Loop AI Therapeutics: Deep Reinforcement Learning for Optimizing Insulin Dosing

During Ramadan Fasting and High-Glycemic South Asian Diets

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Background & Objectives: Diabetes management in South Asia presents a unique and underexplored challenge due to the coexistence of carbohydrate-dense, high-glycemic-index diets and prolonged intermittent fasting periods such as Ramadan. Conventional insulin dosing strategies and linear bolus calculators fail to capture the nonlinear metabolic effects of complex meals and fasting-induced insulin sensitivity shifts, leading to frequent hypoglycemia or sustained hyperglycemia. This study proposes a closed-loop, model-free artificial intelligence therapeutic approach using deep reinforcement learning to autonomously optimize insulin delivery under these conditions.

Methods: A Soft Actor–Critic reinforcement learning agent was developed and trained within a validated physiological simulation environment using digital twin patients with heterogeneous insulin sensitivities. The simulation framework was augmented to replicate culturally specific disturbances, including rapid post-Iftar glucose excursions and extended fasting intervals from Sehri to Iftar. The agent continuously adjusted basal and bolus insulin dosing with the objective of maximizing glycemic time in range (70–180 mg/dL) without reliance on manual carbohydrate counting.

Results: Across extensive simulated test scenarios, the proposed system outperformed

standard clinical sliding-scale insulin protocols in 92% of cases. During the critical post-Iftar period, peak hyperglycemic excursions were reduced by an average of 35 mg/dL compared to conventional therapy. Notably, the reinforcement learning policy achieved a zero incidence of severe hypoglycemia (<54 mg/dL), whereas standard protocols exhibited a 4.5% failure rate during fasting hours. The agent demonstrated robust adaptive behavior when exposed to unplanned dietary deviations, maintaining glycemic stability through anticipatory insulin modulation.

Conclusion: These findings highlight a paradigm shift from static decision-support tools to autonomous, adaptive AI therapeutics, offering a viable pathway toward smart insulin delivery systems tailored to South Asian lifestyles and religious practices.

Keywords: insulin, glycemic stability, Critic reinforcement

UG-PP-181 — Diagnostic and Prognostic Value of Degree of SLR in the Treatment of Monoradicular Sciatica

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Background & Objectives: Sciatica caused by lumbar disc herniation is a common cause of lower back and radicular leg pain. The Straight Leg Raise (SLR) test is widely used as a clinical tool for diagnosing lumbosacral radiculopathy, but its diagnostic accuracy remains debated

compared with magnetic resonance imaging (MRI). The objective of our study is to determine the diagnostic accuracy of the traditional Straight Leg Raise (SLR) test for monoradicular sciatica using MRI as the reference standard.

Methods: A total of 100 patients presenting with lower back pain and radicular symptoms were enrolled. The SLR test was performed with the patient in the supine position and considered positive if it reproduced characteristic radicular pain at $\leq 80^\circ$ of hip flexion. Pain intensity was quantified using a Visual Analogue Scale (VAS). All participants underwent lumbosacral MRI for confirmation of nerve root compression. Diagnostic parameters, including sensitivity, specificity, and overall accuracy, were calculated using a 2×2 contingency table with MRI findings as the gold standard.

Results: The mean age of participants was 44.76 years, with a female predominance (54%). The S1 nerve root was the most frequently affected (36%). The SLR test demonstrated a sensitivity of 79.31%, specificity of 69.23%, and an overall diagnostic accuracy of 78.0%.

Conclusion: The traditional Straight Leg Raise test remains a practical, simple, and reliable clinical tool for the diagnosis of monoradicular sciatica, demonstrating moderate sensitivity and specificity when compared with MRI.

Keywords: Straight Leg Raise Test, Diagnostic Accuracy, Sciatica, Lumbar Disc Herniation, Magnetic Resonance Imaging, Sensitivity, Specificity

UG-PP-182 — Effectiveness of Low-Dose Combination Therapy Versus Standard Care in Reducing Symptoms Among Hypertensive Patients: A Systematic Review and Meta-Analysis

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Background & Objectives: Hypertension remains a leading global risk factor for cardiovascular morbidity and mortality, and suboptimal blood pressure control continues to be a major challenge despite the availability of effective antihypertensive therapies. Low-dose combination therapy has emerged as a promising strategy to improve blood pressure control while minimizing adverse effects. This systematic review and meta-analysis aimed to evaluate the effectiveness and safety of low-dose combination antihypertensive therapy compared with placebo or standard care among adult hypertensive patients.

Methods: The review was conducted in accordance with PRISMA 2020 guidelines and included randomized controlled trials involving adults aged ≥ 18 years with diagnosed hypertension. Comprehensive searches of PubMed, Scopus, Web of Science, ClinicalTrials.gov, and the Cochrane Central Register of Controlled Trials were performed from inception to October 23, 2025. Data were synthesized using random-effects meta-

analysis, and outcomes were expressed as mean differences and risk ratios with 95% confidence intervals.

Results: A total of 12 studies comprising 5,049 participants were included. Low-dose combination therapy resulted in a greater reduction in systolic blood pressure at short-term follow-up (4–12 weeks) compared with placebo and standard care, as well as a sustained reduction at 6–12 months. Patients receiving low-dose combinations were significantly more likely to achieve target blood pressure levels below 140/90 mmHg than those receiving comparators. Although heterogeneity was observed across studies, overall findings consistently favored low-dose combination therapy. Adverse events, including dizziness, pedal edema, musculoskeletal complaints, and headache, were generally comparable between groups, indicating acceptable tolerability. In conclusion, low-dose combination antihypertensive therapy is more effective than placebo or standard care in achieving blood pressure control without a substantial increase in adverse effects.

Conclusion: These findings support the incorporation of low-dose combination regimens into clinical practice and future hypertension management guidelines.

Keywords: antihypertensive therapy, dizziness, pedal edema,

UG-PP-183 — Effects of Transcranial Direct Current Stimulation on Balance in Parkinson Disease: A Meta-Analysis

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Background and Objectives: Transcranial direct current stimulation (tDCS) has recently gained attention as a non-invasive neuromodulation technique for improving balance in Parkinson's disease (PD). tDCS modulates cortical excitability and may enhance neurotransmitter release, including dopamine. However, evidence regarding its clinical efficacy remains inconclusive. This meta-analysis aimed to evaluate the effects of tDCS on balance in individuals with PD.

Methods: Studies were identified using the PICOD approach and searched across CENTRAL, PEDro, CINAHL, PubMed, MEDLINE, and ProQuest databases from 2016-2024. Data were analyzed using RevMan 5.4.1. Heterogeneity was evaluated using the I^2 statistic, and study quality was assessed using the PEDro scale.

Results: Thirteen RCTs were included. The pooled results for balance (SMD = -0.15, 95% CI: -0.48 to 0.18, $I^2 = 12\%$, $p = 0.33$) indicated no significant improvements following tDCS.

Conclusion: Current evidence suggests that tDCS does not significantly improve balance in PD. The non-significant effects may be attributed to small sample sizes and methodological heterogeneity across studies. Future trials with larger sample sizes and standardized stimulation protocols are warranted.

Keywords: Transcranial direct current stimulation, Physiotherapy, Parkinson's disease, Balance, Motor symptoms.

UG-PP-184 Identifying Factors Associated With High-Risk Obstructive Sleep Apnea Among Hypertensive Patients: A Case-Control Study

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Background & Objective: Obstructive sleep apnea (OSA) is a prevalent but largely underdiagnosed sleep-related breathing disorder characterized by recurrent upper airway collapse, intermittent hypoxia, and sleep fragmentation. Its coexistence with hypertension is well established and is associated with increased cardiovascular morbidity. In low- and middle-income countries, limited access to polysomnography results in missed or delayed diagnosis, emphasizing the need for reliable clinical screening tools and identification of key risk factors. This study aimed to identify determinants of high-risk OSA among hypertensive patients in a tertiary care setting in Peshawar, Pakistan.

Methods: A case-control study was conducted from 1st June to 1st September 2025 at Rehman General Hospital and Rehman Specialist Hospital, Peshawar. A total of 156 hypertensive participants were recruited using consecutive sampling (78 cases and 78 controls). High-risk OSA was defined using the STOP-BANG questionnaire (score ≥ 3 with additional risk criteria). Data on sociodemographic variables, BMI, neck circumference, and comorbidities were collected. Statistical analysis included independent t-tests, Chi-square tests, and binary and multivariable logistic regression using SPSS.

Results: Participants had a mean age of 54.3 ± 13.1 years. On bivariate analysis, age, male gender, BMI, neck circumference, and

ischemic heart disease were significantly associated with high-risk OSA. However, multivariable analysis identified older age, male gender, and increased neck circumference as independent predictors.

Conclusion: Older age, male gender, and larger neck circumference are independent determinants of high-risk OSA among hypertensive patients. The STOP-BANG questionnaire is a practical screening tool in resource-limited settings. Incorporating simple anthropometric measures into routine hypertension care may facilitate early identification of OSA and reduce cardiovascular risk.

Keywords: Hypertension, Obstructive sleep apnea,

STOP-BANG.

UG-PP-185 — Knowledge and Attitudes Toward Mental Health Among MBBS Students in Private and Public Medical Colleges of Khyber Pakhtunkhwa

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Background & Objectives: Mental health literacy and attitudes among medical students are essential determinants of future clinical competence, empathy, and patient-centered care. In Pakistan, particularly in Khyber Pakhtunkhwa (KP), sociocultural stigma, limited psychiatric exposure, and uneven institutional resources contribute to persistent misconceptions about mental illness. This study aimed to assess and compare knowledge

and attitudes toward mental health among MBBS students enrolled in private and public medical colleges in Khyber Pakhtunkhwa.

Methods: A cross-sectional comparative design was employed, involving 100 MBBS students (50 from private and 50 from public medical colleges) selected through stratified random sampling across all five academic years. Data were collected using a structured, bilingual self-administered questionnaire adapted from the Mental Health Knowledge Schedule (MAKS) and the Attitudes toward Mental Illness (AMI) scale.

Results: Descriptive statistics summarized demographic characteristics, knowledge levels, and attitude patterns. At the same time, inferential analyses including independent-samples t-tests, one-way ANOVA, Pearson's correlation, and regression analysis were conducted using SPSS version 25 with a significance level of $p < 0.05$. The study is expected to demonstrate significant differences in mental health knowledge and attitudes between students from private and public institutions, with higher literacy and more positive attitudes anticipated among private college students. Gender, year of study, and exposure to psychiatry-related coursework are also expected to influence mental health perceptions.

Conclusion: The findings underscore the need for standardized, culturally sensitive mental health education, early integration of psychiatry, and institutional psychological support services across medical colleges in KPK to reduce stigma and strengthen empathetic medical practice among future physicians.

Keywords: Mental Health Literacy, Medical Students, Mental Illness, Khyber Pakhtunkhwa

UG-PP-186— Massive Subcapsular Hepatic Hematoma Following ERCP: A Rare Complication

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Background & Objectives: Endoscopic retrograde cholangiopancreatography (ERCP) is widely employed for the diagnosis and management of biliary and pancreatic disorders, including choledocholithiasis, strictures, and pancreatitis [1,2]. While ERCP is generally safe, complications such as post-ERCP pancreatitis, hemorrhage, perforation, and cholangitis occur in 5–10% of cases [3,4]. Hepatic subcapsular haematoma (HSH) is extremely rare, with fewer than 100 cases reported to date [5,6]. Proposed mechanisms include trauma from guidewires or catheters, capsular stretch during instrumentation, and pressure-related vascular injury in obstructed bile ducts [7,8]. Clinical presentation is often nonspecific, including right upper quadrant pain, hypotension, fever, anemia, or shock, making early recognition challenging [9,10]. Contrast-enhanced CT is the imaging modality of choice to assess haematoma size, location, and active bleeding [11,12]. Management strategies vary from conservative care in stable patients to percutaneous drainage or surgery in patients with expanding hematomas or hemodynamic instability [6,13–15].

Case Presentation A 33-year-old male presented with a five-day history of sharp epigastric pain radiating to the back, associated

with two episodes of vomiting. On examination, he had epigastric tenderness; the rest of the abdomen was soft and non-tender. Laboratory studies revealed elevated amylase and lipase. Initial CT abdomen and pelvis showed acute pancreatitis with peripancreatic edema; no hepatic abnormalities were noted. Ultrasound demonstrated multiple gallstones with a CBD diameter of 9 mm. MRCP revealed a distal CBD stone measuring 9 mm causing obstruction. The patient underwent ERCP with sphincterotomy and successful removal of multiple stones. Within 24 hours post-procedure, he developed fever, tachycardia, tachypnea, and worsening abdominal discomfort. OGD revealed no acute gastrointestinal bleeding. Repeat contrast-enhanced CT angiography demonstrated a large right-sided subcapsular hepatic haematoma measuring 22 × 7 cm, with small-volume hemoperitoneum but no active extravasation. He remained hemodynamically stable and was managed conservatively in the ICU with intravenous fluids, antibiotics, analgesics, and DVT prophylaxis. He gradually improved, was stepped down to the ward, and discharged home in stable condition with outpatient follow-up.

Discussion: Subcapsular hepatic haematoma (HSH) is an exceedingly rare but potentially serious complication of ERCP, with fewer than 100 cases reported [5,6,17]. Direct trauma from guidewires, cannulas, or sphincterotomes can injure intrahepatic vessels, leading to capsular bleeding [7,8]. Capsular stretching during instrumentation, or sudden increases in biliary pressure due to obstructed ducts, may also contribute to haematoma formation [7,18]. Underlying coagulopathy or anticoagulant therapy may further increase risk [10,19].

Clinically, HSH often presents with nonspecific signs, including right upper quadrant pain, hypotension, tachycardia, fever, or anemia, which can be misattributed to other post-ERCP complications such as pancreatitis or cholangitis [9,20]. Imaging, particularly contrast-enhanced CT, is critical for prompt diagnosis, assessment of haematoma size and location, and detection of hemoperitoneum or active bleeding [12,19].

Conclusion: Subcapsular hepatic haematoma is a rare but potentially life-threatening complication of ERCP. Early recognition through vigilant clinical monitoring and prompt imaging is critical, especially in patients presenting with persistent abdominal pain, unexplained tachycardia, hypotension, or anemia after the procedure. Conservative management can be effective in hemodynamically stable patients, while surgical or interventional radiology approaches may be necessary for unstable or expanding hematomas.

Keywords: Subcapsular hepatic haematoma, gallstones

UG-PP-187 — Outcomes of Intrathecal/Intraventricular and Intravenous Colistin in Post-Surgical Meningitis and Ventriculitis Due to Carbapenem-Resistant Gram-Negative Bacteria: A Five-Year Retrospective Study

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Background Objectives: Carbapenem-resistant Gram-negative bacilli (CR-GNB)

central nervous system (CNS) infections are difficult to manage due to limited treatment options and poor outcomes. Colistin remains a last-resort therapy, but optimal use and safety data are scarce, necessitating real-world evidence to inform practice. To evaluate the effectiveness and safety of intravenous (IV) and intrathecal/intraventricular (ITH/IVT) colistin in the treatment of CR-GNB meningitis and ventriculitis at a quaternary care hospital.

Methods: This retrospective study at Shifa International Hospital (March 2020–June 2025) included patients with culture-confirmed CR-GNB meningitis/ventriculitis who received IV plus ITH/IVT colistin for ≥ 48 hours. Colistin doses ranged from 2–4.5 MIU/day IV (renal-adjusted as needed) and 125,000–250,000 IU/day intrathecal/intraventricular. Outcomes assessed were clinical cure (symptom resolution with two negative CSF cultures), mortality, acute kidney injury (AKI; KDIGO criteria), adverse events, and 90-day readmissions. Statistical analyses included Chi-square/Fisher's exact test for categorical variables and independent t-test for continuous variables; significance was set at $p < 0.05$.

Results: A total of 41 patients were included. Clinical cure was achieved in 29 patients (70.7%, $\chi^2 p = 0.02$). The mean IV colistin duration was 27.9 ± 21.4 days, and ITH/IVT therapy averaged 20.8 ± 16.9 days. Four patients (9.8%) died within 14 days and six (14.6%) within 30 days; 5 (12.2%) were readmitted within 90 days. AKI occurred in 8 patients (19.5%), significantly associated with longer therapy (34.6 ± 18.2 vs. 25.3 ± 12.9 days, t-test $p = 0.03$) and higher mortality (37.5% vs. 9.1%, Fisher's exact $p = 0.02$). Dose optimization, particularly renal-adjusted regimens, showed a positive trend toward clinical cure, though logistic regression was limited by small sample size. Other adverse

events included seizures (n=2, 4.9%) and chemical meningitis (n=1, 2.4%). The most common pathogens were *Acinetobacter baumannii* (21, 52%), *Klebsiella pneumoniae* (9, 22%), *Pseudomonas aeruginosa* (6, 15%), and *Escherichia coli* (5, 11%), with significantly different cure rates by organism ($p = 0.04$), lowest in *K. pneumoniae* infections.

Conclusion: IV and ITH/IVT colistin demonstrated reasonable cure rates and survival in CR-GNB CNS infections, though nephrotoxicity and other adverse effects warrant close monitoring. Renal-adjusted dosing may improve outcomes, but findings should be interpreted with caution given the modest sample size. Larger prospective studies are needed to refine dosing strategies and enhance safety.

KEYWORDS: intravenous, meningitis, ventriculitis

UG-PP-188 — Relationship Between Oral Health and Breast Cancer: A Rarely Studied Link

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Background & Objectives: Breast cancer is a leading cause of morbidity among women often presenting with lumps, nipple discharge, skin dimpling and axillary node enlargement. Dental caries is a chronic, multifactorial disease caused by acid producing bacteria which leads to enamel demineralization. Reduced salivary flow, altered taste sensation, white spot lesions are commonly reported in medically compromised individuals including those with breast cancer. While there is a relationship between the oral cavity and

systemic diseases, there is no direct relationship between breast cancer and oral health. The objective of this study is to assess oral manifestations after breast cancer diagnosis before treatment, perceived association with breast changes, awareness of oral- systemic health and to provide evidence for the need of preventative health programs in breast cancer patients.

Methods: This cross sectional study included 112 adults in which 44.6% were breast cancer patients. Oral health was examined via questionnaires and also clinical examination.

Results: Data was then analyzed to compare breast cancer and non breast cancer participants. Higher rates of breast cancer were reported among the middle aged and elderly. Fair to poor self reported oral health was more common among breast cancer patients. In addition to this, decayed, missing and filled teeth were more common among breast cancer patients meaning that the breast cancer patients had a higher DMFT index. Also, altered taste sensations, tooth pain, black or white spots were more common among the breast cancer group. Moreover, some participants reported an increase in dental caries after their breast cancer diagnosis.

Conclusion: In summary, the study observed that breast cancer patients often reported fair to poor oral health, higher DMFTs as well as altered taste sensations. Although this does suggest that oral health should be monitored in breast cancer patients, further analysis is needed to confirm any direct associations.

Key words: Breast cancer, Oral health, Oral-systemic, DMFT, Dental caries

UG-PP-189 — Risk Factors of Stunting Among Children Under Age 5 Presenting to

the Pediatric Outpatient Department of a Public Sector Hospital in KPK

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Background & Objectives: Stunting is a major proximal risk factor for poor physical and mental development, reflecting the cumulative effect of chronic malnutrition, repeated infections, and inadequate psychosocial stimulation. With Pakistan reporting stunting prevalence rates as high as 40-44%, identifying local determinants is essential. This study aimed to identify the frequency and determinants of stunting among children under five years of age presenting to the Pediatric Outpatient Department of a public sector hospital in Swabi, Khyber Pakhtunkhwa.

Methods: A case-control study was conducted from October 1 to December 31, 2023, utilizing a sample of 378 children selected via non-probability convenience sampling (1:1 case-to-control ratio). Data were collected using a semi-structured questionnaire and WHO growth charts, and Odds Ratios (OR) were calculated to assess risk factor associations.

Results: Male children constituted 59.6% of the stunted cases. Multivariate analysis revealed significant risk factors associated with stunting, including paternal unemployment (OR: 3.1), short birth interval of ≤ 2 years (OR: 1.8), low maternal education (OR: 1.5), and larger family size (OR: 1.6). Nutritional analysis highlighted that mixed feeding patterns and delayed weaning (>6 months) were significant factors. Children from lower-income households and rural areas also demonstrated a higher prevalence of stunting.

Conclusion: Stunting in this population is multifactorial, driven primarily by low socioeconomic status, maternal illiteracy, short birth intervals, and inappropriate complementary feeding practices. Recommendations include targeted maternal education and nutritional counseling on timely weaning.

Keywords: Stunting, malnutrition, risk factors, children, Pakistan

