Evaluation of Knowledge, Attitude and Practice of Postgraduate Dental Students and General Dental Practitioners Regarding Temporomandibular Joint Disorder

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Abstract

Background: TemporoMandibular joint Disorders (TMDs) considered neuromuscular and musculoskeletal disorders are among the main causes of chronic oro-facial pain that affects 28-86% of population. The symptoms are triggered by stress and abnormal masticatory habits and trauma. Many practitioners find it challenging to diagnose TMDs, that is the reason that their Knowledge, experience and attitude is of utmost importance in this field.

Aim: The aim of present study is to evaluate knowledge, attitude and practice about TMDs amongst postgraduate dental students (PGDS) and general dental practitioners (GDPs) of KPK.

Materials and Methods: A total of 100 Postgraduate dental students and General dental practitioners were included in the study evaluated on one questionnaire of 21 issues regarding TMD. The questionnaire was formulated from appropriate regular textbooks. The questionnaire was pre-evaluated and circulated in person. The scores of knowledge and attitude among PGDS and GDPs were evaluated and compared.

Results: Knowledge and attitude scores showed a significant difference among PGDS and GDPs. A significant correlation was also found among scores for attitude in both the groups.
75% among the GDPs revealed little confidence as compared to an insufficient number of PGDS.

Conclusion: Updated knowledge sharing programs in terms of knowledge, skills and attitude for continuing dental education and curriculum based improvements are prerequisites for all the stake holders. There is a need for constant curriculum revision, update of knowledge, panel discussion, and in BDS curriculum

Key words: TMDs, PGDS, GDPs, questionnaire, knowledge, attitude, practice

Introduction:

Temporomandibular disorders(TMDs) are a combination of disorders that involves temporomandibular joint, masticatory muscle, soft tissue and bony components and their combinations.[1] Signs and symptoms of TMDs comprise of masticatory muscle pain, decreased range of motion of mandible, pain in temporomandibular joint(TMJ), myofascial pain, joint noise, deviation while opening jaw and limitation of function.[1] Its etiology is multi-faceted: Biophysical, neuromuscular, biomechanical and biological elements might contribute to TMDs. 2 TMDs has a prevelance more than 5% in population. 3 Lipton et al 4 observed that around 6% to 12% population presented signs and symptoms of TMDs. Peak occurrence was found to be in the age of 20-40 years.[5]

Multiple factors like traumatic injuries, muscle parafunction or hyperfunction, articular changes in joint, hormonal influences commonly occurs prior to onset of TMDs. A relationship between myofascial pain or dysfunction and occlusal interference was found by Mohlin and Kopp[6] and also found connections between muscular discomfort and posterior cross-bite.

Patients having anterior open bite, class 2 malocclusion, deep bites are most susceptible to developing myofascial pain.[7]

Clinical examination, history of patient, laboratory tests, radiography of TMJ, and other imaging techniques provide sufficient information to differentially diagnose TMDs.[8]

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Besides, various psychometric tests can be performed in order to evaluate the psychosocial status of every patient having TMD.[8]

The therapeutic modalities that are used for the treatment of patients with TMDs should be evidence-based, conservative and reversible. TMDs tends to get better or resolve with time as proposed by many studies that observed the natural history of patients with TMDs.

While no particular therapies have yet been proven consistently effective, many conservative treatments and many types of invasive treatments has proved to be effective in giving symptomatic relief. These treatments are not capable of causing changes that are irreversible, as they present much less possibility of causing harm.[8]

Researchers have periodically shown interest in TMDs. Present data specify that TMDs are responsible for common orofacial pains that are of musculoskeletal origin, which affects 28-86% population.[9] TMDs can frequently be difficult to diagnose and thus it is challenging for many practitioners.

So the diagnosis and treatment of TMDs by dental practitioners is highly influenced by their knowledge, experience and attitude. Furthermore, referral of patients can also be decreased by adequate knowledge and attitude.[10]

Insufficient research has been done across the globe to evaluate the knowledge, attitude and practice (KAP) of dental practitioners regarding TMDs.

In United States, there have been several attempts to improve education in this field. Since 1990, the first Educational Conference to Develop the Curriculum of Temporomandibular Disorder and Orofacial pain proposed several curriculum models specifically for predoctoral, postdoctoral, and continuing education.[10]

In the recent years, many progresses have been made in the attempt to design reference principles for the diagnosis and treatment. This led to the diffusion of internationally recognized academic guidelines for the assessment and management of patients with TMD in the clinical setting.[11]

Materials and Methods:

A total of 100 Postgraduate dental students (PGDs) of all specialties and General dental practitioners (GDPs) practicing currently were included in this survey by their own free will. Ethical approval was taken from institute review board.

A questionnaire comprising of 21 issues regarding TMDs was formulated from appropriate regular text books1,7,10 which was the basis of assessing both groups. The questionnaire comprised of 4 components i.e. demography, knowledge, attitude and practice.

Demographic component consisted further 5 questions. A discrete question was incorporated in questionnaire to understand the view of dental practitioners in regard to the sufficiency of knowledge delivered on TMDs in the course of under graduation.

The component of questionnaire on knowledge comprised of seven questions concerning four domains, namely, etiology, epidemiology, symptoms, and diagnosis of TMDs. The component of questionnaire on attitude comprised of five questions. The component of questionnaire examining practices of dental practitioners regarding TMDs comprised of four questions.

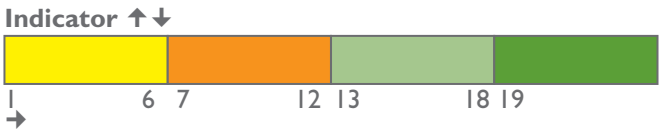
This questionnaire was pre-assessed on selected individuals already included in the study in order to check its validity. Difficulties encountered by the individuals were noted, and the final questionnaire was updated.

The updated questionnaires were circulated in person or through electronic media via emails. After receiving responses, scoring was done as follows.

In knowledge component, correct answer was assigned a +1score, incorrect answer was assigned a -1score and unanswered question was assigned a 0 score. On basis of their net score, the knowledge level of individuals in this study was classified as having low, fair, good or high, as shown figure 1.

SCORE	KNOWLEDGE LEVEL
1 - 6	Low
7 - 12	Fair
13 - 18	Good
19 and above	High

Figure.1 Classification of knowledge level



Chi-square test was used to assess difference in knowledge level of PGDS and GDPs.

In attitude component, 1 score was assigned to correct answer (answer in aggreement with regular text books) and 0 score was assigned to incorrect answer or unanswered question. On basis of their net score, attitude level of the individuals in this study was classified as positive (0-2), negative (3-4)and questionable (5-↑).

The difference in the attitude of PGDS and GDPs were noted. Pearson's correlation coefficient test was used to assess the correlation of attitude scores between both groups.

In practice component, descriptive analysis was carried out for the answers in proforma.

Results:

There was a total of 50 PGDS and 50 GDPs as shown in fugure 3

The assessment of knowledge level reported that half 50% of the PGDS revealed a high knowledge level and 10% revealed a fair knowledge level. While 30% of GDPs revealed a high knowledge level and 20% revealed a little or low knowledge level.A statistical difference was observed in knowledge scores of the PGDS and GDPs. (P=0.0003), as shown in figure 3.

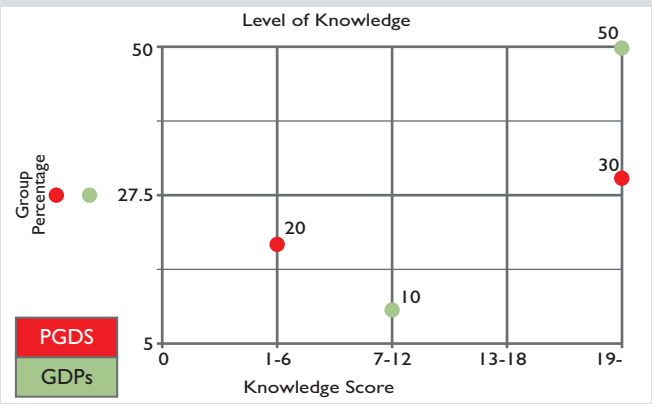


Figure 3. Knowledge level evaluation in survey subjects (PGDs and GDPs)

23% PGDS revealed positive attitude level in diagnosing and treating TMDs, whereas 25% PGDS revealed a questionable attitude and 2% PGDS revealed a negative attitude. (Figure4)

15% GDPs revealed a negative attitude level towards TMDs, while 25% GDPs had questionable attitude level and 10% GDPs revealed a positive attitude. A statistically significant difference was found among attitude level of both groups (P=0.0404). (Figure 4)

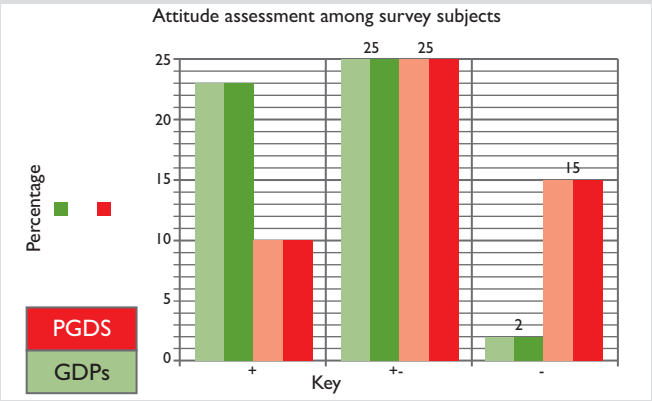


Figure 4. Evaluation of attitude among survey subjects (GDPs, PGDS)

The scrutiny of the questions in practice component reported that 13% PGDS revealed full confidence in treating TMDs patients and many, i.e 87%, revealed little confidence. Among the GDPs, 34% revealed little confidence and 66% revealed no confidence as shown in figure 5. The most commonly used therapeutic modality was pharmacotherapy which was used by 36% PGDS while heat therapy was used by 14% PGDS as shown in figure 6. The most commonly used therapeutic modality was occlusal interference correction which was used by 40% GDPs while pharmacotherapy was used by 32% GDPs. The least practiced was physical therapy by both groups, as shown in figure 7.

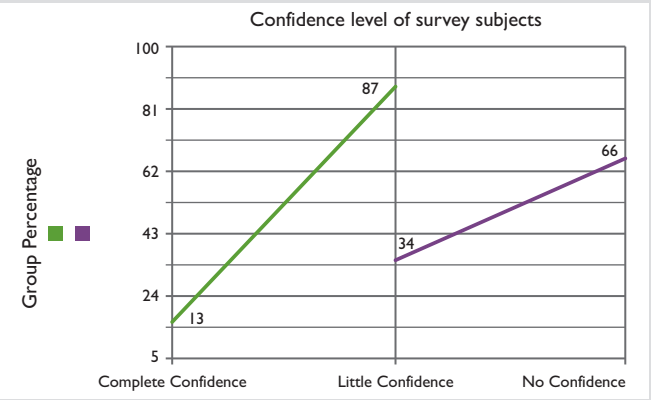


Figure 5. Evolution of practice among survey subjects (GDPs, PGDS)

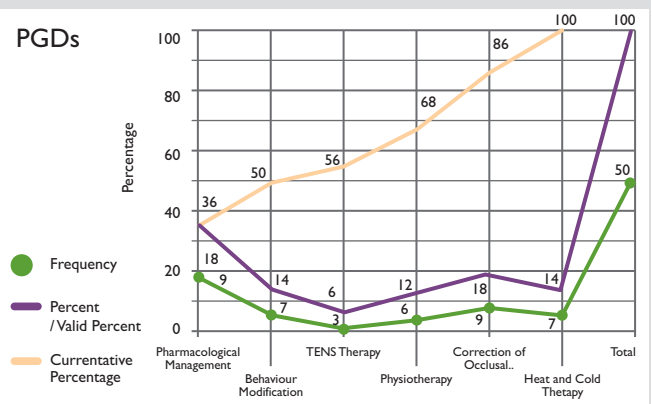


Figure 6. Therapeutic modalities used by PGDs.

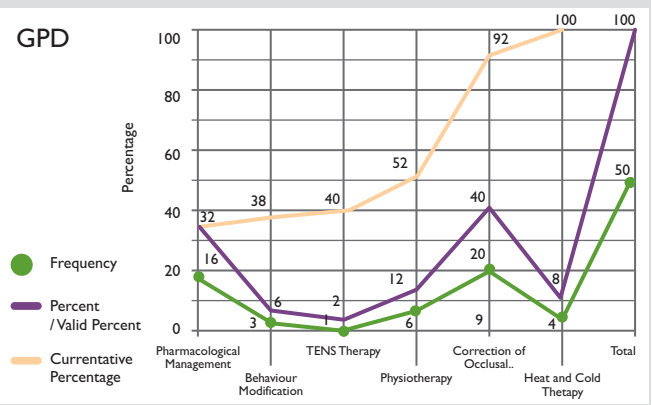


Figure 7. Therapeutic modalities used by GDPs

Discussion:

In present study, it was apparent that regarding TMDs, the knowledge level was good in greater number of PGDS as compared to GDPs who had low/fair knowledge level. Thus, it was observed that there was a significant difference in knowledge level between both groups, specifically when it comes to diagnosing TMDs for instance osteoarthritis, myofacial pain dysfunction syndrome, and articular disc disorders.

The findings of this study are in agreement with a study done by Rasche et al.[14], which concluded that knowledge level of GDPs was lower regarding the diagnosis, pathophysiology, and treatment of TMDs when compared to PGDS.[12] Another study

by Just et al. revealed that regarding the domain of etiology, knowledge levels of the GDPs group was deficient.[13] The fact that TMDs has been given insufficient importance in undergraduate course in india is the main reason that GDPs had a lower knowledge level. Many participants in the study also expressed this concern.

This was in agreement with a study by Baharvand et al., performed in Iran, which concluded that there was inadequate knowledge delivered in undergraduate dental programs regarding TMDs. This put emphasis on need to extend the undergraduate course in this field.[4] In this study, an encouraging attitude was observed regarding TMDs in many PGDS and GDPs. Attitude in study sample was not affected by education level but was affected by an increased level of practice.

In the present study, PGDS expressed different opinions regarding some established facts available in the literature. Many PGDS and GDPs believed that patients having TMDs should not initiate orthodontic treatment. Although contradictory reports have appeared in literature, a positive correlation has been found between an orthodontic treatment and decreased intensity of TMDs. In a study conducted on 210 subjects that were treated orthodontically in order to assess the relationship between orthodontic treatment and TMDs.

It was concluded that 17% subjects presented TMDs symptoms before orthodontic therapy, while after orthodontic treatment, only 7% subjects presented with TMDs symptoms.[14] Egermark and Thilander also observed a decrease in symptoms of TMDs 1in their study that was conducted in a time period of 10years on 293 children who were treated orthodontically.[15] Varga 18 in its study on TMDs and orthodontic treatment reported that TMJ dysfunction and pain should be treated before starting an orthodontic treatment. This was true for subjects who presented with symptoms like deviation and clicking without pain.

Most of the PGDS did not agree to literature that states, "relaxation training is an effective therapeutic modality in the management of myofacial pain." Sympathetic activity and muscle tone was found to be decreased by progressive muscle relaxation, self-controlled relaxation, autogenic training, meditation, deep breathing and paced breathing.[16]

Many GDPs and PGDS were of the opinion that treatment is needed for joint sounds of different types that is not in accordance with the literature which states that extent of dysfunction and pain indicates the need for treatment. Treatment is not needed in cases where joint noise persists for a long time and is asymptomatic with anterior disc displacement.[17]

According to literature, majority cases of TMDs could be diagnosed correctly only from clinical findings and past history. Radiography was of need only in some cases and should not be taken. Literature states that in most instances, a correct diagnosis of TMDs could be reached with the help of history and clinical findings. Imaging is of value only in selected cases and need not to be considered as a part of the routine assessment. Furthermore, diagnostic radiography is not important for conducting treatment, anticipating outcome of treatment and ascertain prognosis.[19] However, the present study concluded that many PGDS and GDPs considered a need for evaluation by radiography before planning of a treatment. Practice means the way in which the practitioners make use of knowledge and attitude regarding suitable diagnosis and treatment of patients.[20]

Astonishingly, a considerable number of both PGDS and GDPs showed a little confidence level in treating TMDs patients. This might be due to the inadequate knowledge delivered to GDPs in undergraduate programs. Moreover, this little confidence level by PGDS and GDPs, might be due to the lack of involvement in continuing education programs and disinclination towards studying reference textbooks. Many GDPs put emphasis on the need for an adequate number of PGDS. This creates a need for sufficient clinics of TMDs in private set-ups and universities.

Conclusion:

In present study, PGDs group expressed a good knowledge level and attitude regarding TMDs, whereas GDPs group expressed a low/fair knowledge level and a negative attitude. Many PGDs and GDPs had little confidence in TMDs treatment. PGDS were not in agreement with some conventional facts mentioned in literature. This recommends a need for continued knowledge update by PGDS and increase in communication among them by arranging panel discussions.

The present scenario can be made better by modifying the current curriculum in under graduate programs and to give more importance to TMDs in many post-graduate programs. The knowledge level regarding TMDs can be strengthened by these specific ways. Organizing and participating in continuing dental education programs would improve the level of confidence and attitude dentists.

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5. Muhammad Irshad- Data Collection
6. Munawar Aziz Khattak- Critical review