Proceeding S.Z.P.G.M.I. Vol: 29(1): pp. 17-21, 2015.

Frequency of TMJD Among Medical Students vis-à-vis Non-Medical Students

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ABSTRACT

The temporomandibular joint (TMJ) is the synovial joint that connects the lower jaw to the base of the skull. Temporomandibular Joint Dysfunction TMJD is the commonest disorder seen with this joint which appears with common signs and symptoms like clicking sounds, limited mouth opening, jaw pain, headaches, earaches, toothaches and other types of facial pain. TMJ disorder is seen to be an increasing problem especially among the students with higher burden of studies and excessive stress during exams. **Methdos:** This study was conducted to determine the frequency of TMJ dysfunction in medical students in comparison to non-medical students and its association with different variables. A structured questionnaire was designed and administered on 80 medical students and 80 non-medical students irrespective of gender, age ranging from 17-25. **Results:** The data collected was then entered into the SPSS-16 and tabulated into percentages and bar charts. It is seen that the TMJD is seen to be more common among Medical Students (p= 0.001) and has a significant correlation with study hours and stress (p = 0.032 and 0.00) respectively. **Conclusion:** Frequency of TMJD is more among medical students than non-medical students in regard of tough studies, excessive stress during exams and study hours.

Keywords: Temporomandibular Joint Dysfunction, Studies, Stress. Malocclusion, Derangements

INTRODUCTION

The Temporomandibular joint is the joint of the jaw and is frequently referred to as TMJ. There are two TMJs, one on either side, working in unison. The unique feature of the TMJs is the articular disc. The disc is composed of fibro-cartilaginous tissue which is positioned between the two bones that form the joint. Temporomandibular Joint Dysfunction TMJD is a term used to refer to a group of problems involving the TMJs and the muscles, tendons, ligaments, blood vessels, and other tissues associated with them.[1] The most common causes of TMJD include internal derangements, degenerative joint diseases, para-functional habits, stress, malocclusion and injury or trauma. The common symptoms of TMJD includes clicking sound, pain in the joint, limited mouth opening and associated symptoms like neck pain, earache and frontal headaches.[2,3]

TMJ disorder is seen to be an increasing problem, especially among the students with higher burden of studies and excessive stress during exams.[4] As more frequent the TMJD is occurring little is done to eradicate the problem or at least reduce it. Management if is not done at early stages ends up into severe complications like limited mouth opening and requiring surgical intervention. A study was undertaken to determine the prevalence of TMJ dysfunction in medical students in comparison to non-medical students and its association with different variables in order to determine its frequency and also to increase its awareness.

MATERIALS AND METHOD

A Comparative Cross-sectional Study was performed among the medical and non-medical

students of the Sharif Educational complex. A total of 162 students were short listed which were fulfilling the inclusion and exclusion criteria were included in the study. The age ranges from 17-25 years. Of the total 81 were medical students from Sharif Medical and Dental College and were included in Group A having a mean age of 20.762 years. Second group of students were taken from Sharif Institute of Engineering and Technology and COMSAT University Lahore and also included 81 students and were included in group B. There mean age was 20.00 years. A structured questionnaire was administered on these students, out of 162 questionnaires only 2 were incompletely filled and hence discarded. The total response rate was 98.7%. The data collected was then entered in to SPSS-16 and tabulated into percentages and bar charts.

Inclusion Criteria

1. Students were selected who were studying in the above mentioned professional colleges only.
2. They were selected irrespective of gender.
3. Students befalling in the age section of 17-25 were only included.

Exclusion Criteria

1. Students on already diagnosed TMJD or taking its treatment were excluded from the study.
2. Students on any other medication from any systemic condition were also excluded from the study.
3. Students with the history of fall, trauma to jaw or any accident were also excluded from the study.
4. Students with any psychiatric disorders were also excluded.
5. Students showing clinical features of any malocclusion were also excluded.
6. Students undergoing orthodontic treatment were also excluded from the study.

RESULTS

There were two groups *i.e.*, Group A containing 80 medical and Group B containing 80 non-medical students. Group A comprised of 72 females and 8 males whereas Group B consisted of 41 females and 39 males. The students were divided into 3 age groups i-e 17-19 years, 20-22 years, and 23-25 years.

Both the groups were analyzed for the TMJD through the questionnaires. The variables of stress, pain in joint, clicking sound, trismus, pain on yawing, long study hours and sleeping disturbances were the key factors in determining the TMJD. It was observed in Group A the frequency of TMJD was higher in comparison to Group B as shown the Figure 1. About 36% of students in Group A were having significant symptoms of TMJD whereas in Group B it was reduced to 12.5%. The Figure 2 shows the frequency of TMJD in association with the genders. It's observed that females are affected 2.33 times more than the males.

TMJD was also assessed in the different age groups. Among the three age groups, symptoms of TMJD were seen to be more common in 20-22 years in Group A and 17-19 years in Group B. (>70% & 90% respectively). Showing that non- medical students are affected during the first two years but it eventually vanishes as they reach the senior classes which are different to medical students. In medical students TMJD is present in the first two years which increases immensely as the classes progresses to senior grades as can be seen in Figure 3.

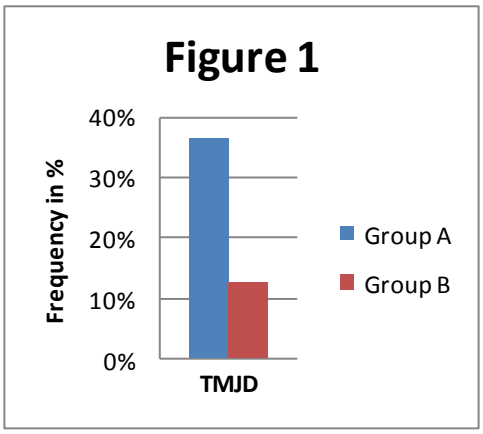

Fig. 1: Prevalence of TMJD in Group A and B.

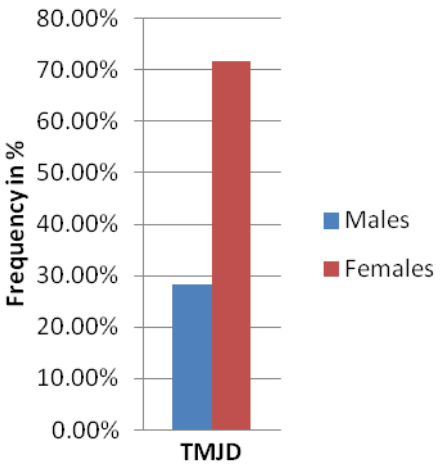

Fig. 2: Prevalence of TMD in males & females.

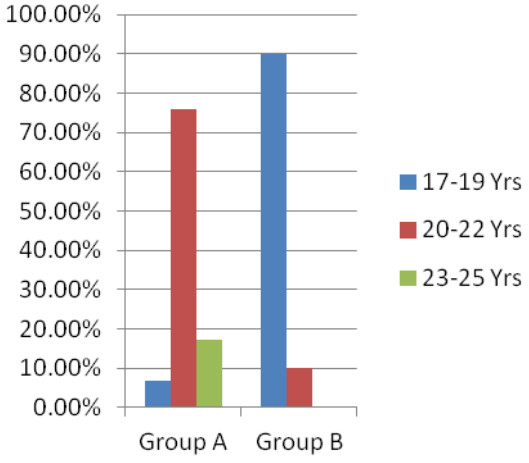

Fig. 3: Prevalence of TMJD in different age groups of medical and non-medical students.

Figure 4 displays a bar chart representing most common sign and symptoms of TMJD, its seen that in Group A about 80% of the students had clicking of TMJ as a most common symptom whereas in Group B 70% population had pain in joint as the most common symptom.

Results showed that stress and stress related factors were significant in Group A, with more than 75% population having excessive stress during exams, 46 %having stress in routine life and upto 38% experiencing clenching of teeth. However, in Group B the stress related factors were reduced to 30% ,8% and less than 10% respectively.

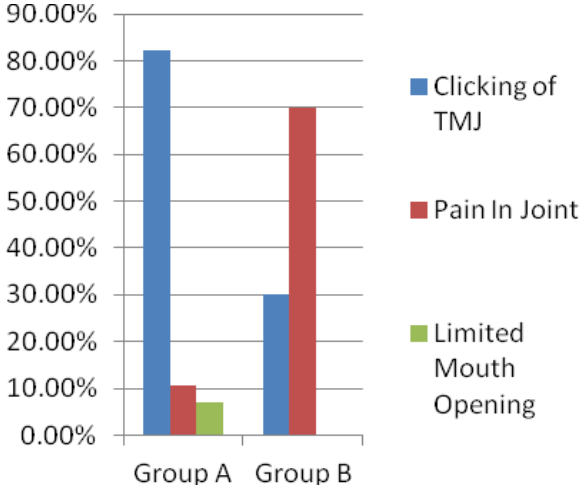

Fig. 4: Common Symptoms in both groups.

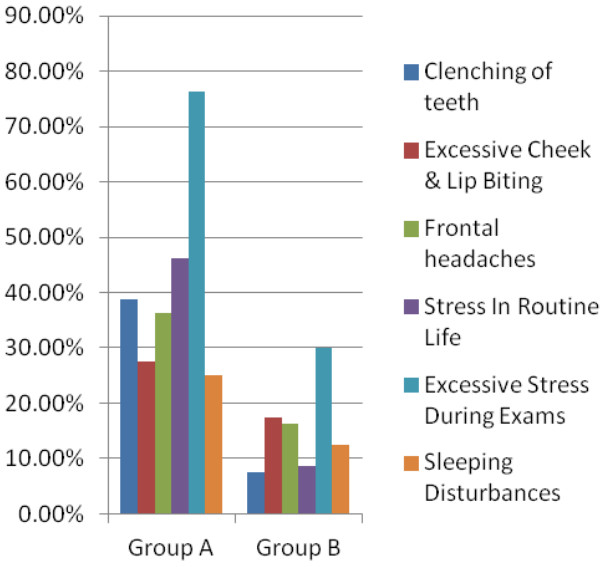

Fig. 5: Comparison of stress and stress related factors in both groups.

A comparative analysis was also done on the hours of study and its frequency in both the groups as shown in Figure 6. Its seen that although the non-medical students (Group B) were studying uptil 12 hours a day but the maximum frequency was seen the group studying for 5-8 hours. Similarly its observed that medical students (Group A) were studying upto 16 hours and above with the maximum frequency of 9-12 hours.

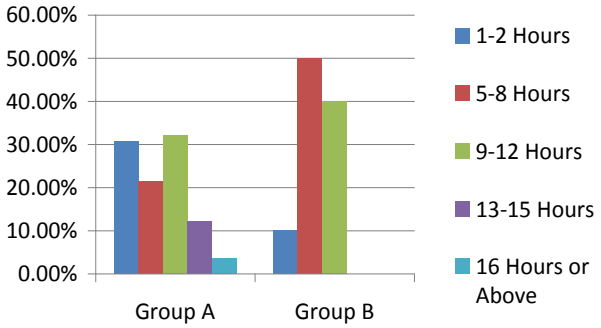

Fig. 6: Comparison of study hours in students suffering from TMJD in both groups.

DISCUSSION

Temporomandibular joint is a hinge that connects the jaw to the temporal bones of the skull, which are in front of each ear. It permits the jaw up and down and side to side movement aiding in speech, chewing and yawning. TMJ disorder is seen to be an increasing problem, especially among the students with higher burden of studies and excessive stress during exams. TMJD requires immediate management in order to avoid complications like clicking sound, severe pain and limited mouth opening which requires surgical intervention. A study was undertaken to determine the prevalence of TMJ dysfunction in medical students in comparison to non-medical students and its association with different variables in order to determine its frequency and also to increase its awareness.

The results of present study showed that the symptoms of TMJD were prevalent among both the groups with females affected 2.33 times more than the males which is accordance to Pedroni CR et al, Conti PC et al and Poveda Roda R et al.[5-7] Medical students were affected up to 36% in comparison to non-medical students who were only up to 10%. This is in agreement with the studies conducted on university students in Jordan,[8] University of Taiwan[9] and Brazilian University Population[5] results of all of which showed that symptoms of TMJD were remarkably prevalent among the students particularly among students of health and science studies, which signify the role of stress in the development and/or progression of TMJD.

This study demonstrated that clicking of joint is the most common symptom among medical students with the pain in joint being the second most common symptom whereas opposite is true for non-medical students. The possible explanation to this is the matter of awareness regarding TMJD symptoms among the medical students and that they would seek an early treatment for the possible complications like pain killers as a symptomatic remedy. It is in contrast to the study conducted at university of Jordan[8] where pain in or around the ears was the most common symptom in the overall sample investigated but other studies demonstrated clicking of joint as the most common symptom.[5,9]

This study demonstrated a significant relation of TMJD with stress and stress related factors e.g. clenching of teeth, excessive chewing of lips and cheeks, sleeping disturbances and frontal headaches which are the expressions of excessive stress in one way or the other. Students in medical colleges have a significantly high risk of developing TMJ Disorder. It may be due to curricula that puts the medical students under greater study loads. It is obvious that students in medical colleges are likely to suffer from stress and anxiety. These findings support a study which investigated the experience of recent stressful life events in 85 TMJ dysfunction patients and 85 control patients in the 6 months prior to onset and stated that almost 50% of TMJ dysfunction onsets were attributable to life events which played a formative role in onset.[10] And also in agreement with another study which arrived at same conclusion. [11]

CONCLUSION

TMJD and its associated symptoms are more frequent among Medical Students because of higher burden of studies that causes excessive stress and stress related factors e.g. clenching of teeth, lip & cheek biting or sleeping disturbances, in routine life and during exams which in result has the tendency to develop TMJD.

RECOMMENDATIONS

Early diagnosis is the key to early management. Stress management is very crucial to prevent the development and progression of TMJD which can be achieved by relaxation exercises. Universities should assess the students for stress levels and then revise their education pattern accordingly. Good head, neck and back posture should be maintained while studying. Students should avoid taking excessive caffeine. Avoid Para functional habits *e.g.* clenching of teeth. More studies are required to identify risk factors associated with TMJD to establish measures for prevention and treatment.

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