ORIGINAL ARTICLE

Assessment of Temporomandibular Ailments and their Severity in Dentistry Undergraduate Students

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ABSTRACT

Objective: To assess the prevalence of temporomandibular ailments and their severity in dental undergraduate students.
Study Design: Cross sectional study
Place and Duration of Study: Department of Orthodontics, Bacha Khan Medical & Dental College, Mardan from1st October 2020 to 31st March 2021.
Methodology: Five hundred and fifty dentistry students were enrolled. After ethical approval each student and written permission for participating in this study was taken. A Fonseca questionnaire was used for assessing the temporomandibular ailments. Responses in form of yes, no and sometimes were scored as 10, 0 and 5 points. A score between 0-15 was considered as nil for temporomandibular disorders while 20-40 as mild, 45-65 as moderate and 70-100 as severe.
Results: Three hundred and forty-seven students were nil for temporomandibular, 112 were mild, 58 were moderate while 33 were severe.
Conclusion: A 37% had temporomandibular disorders in dentistry students with severity common in 6 percent.
Keywords: Temporomandibular ailment, Prevalence, Severity

INTRODUCTION

The formation of a temporomandibular joint also known as tmj consist temporal bone insertion of mandibular condyle insider the mandibular-fossa. The main reason for the joint movement is mastication muscles. The disorders of temporomandibular bone causes cranio-facial pain as well as muscle mastication or the innervations of head and neck muscles.[1] A non-dental pain is commonly caused by the temporomandibular disorders (TMD). Almost ten to fifteen percent pf adult population is affected by this ailment.[2,3] The highest number of patients suffering from this pain are between the age of 20-40 years with females being more commonly effected than males.[4] Clinical symptoms ranges from slight to severe jaw limitations.[5]

Kindler et al[6] have shown a twofold increase in TMD cases in depressed population than healthy individuals. However, there was 1.8 fold ascend of TMD in anxiety cases. Smoking has also been associated with increasing the TMD chances especially in young female ages less than thirty years.[7]

The categorization of TMD could either be intra articular or extra articular.[8] Almost half of the cases of TMD are due to musculoskeletal illnesses.[9-10] The intra articular TMD is caused by the displacement of the articular-disk which further involves an association with condyle disk.[11] Various methods are used for the screening of the TMD in a population yet no standard protocol is available. Studies have shown consensus on use of Fonseca questionnaire which seems an efficient way of assessing the severity level of TMD.[12,13] The present study was designed to assess the prevalence of TMD in young dentistry students for better understanding and health burden of TMD on these students. This could further lead in better management and enhancing their mental and physical efficiency for their professional growth.

MATERIALS AND METHODS

It was a cross sectional study carried out at Department of Orthodontics, Bacha Khan Medical & Dental College, Mardan from1st October 2020 to 31st March 2021. A total of 550 students were enrolled after ethical committee approval and consent from each student. Dentistry students from all 4 years of dentistry and age 18-24 years were enrolled. Each student was given as Fonseca form/questionnaire for assessing and identifying TMD. Those students who had any dental treatment in past or any TMD episode or systematic illness were excluded from this study. A scoring method was used for classifying each participant TMD severity level. The scoring technique applied the conversion of participant responses into yes, no or sometimes answers where no was given 0 points, yes 10 and sometime as 5 points for each question. The total number of points attained by each participant was then counted. Those participants who got 0-15 scores were categorized as nil for TMD, whereas 20-40 scored were taken as mild, 45-60 were considered to have moderate TMD while severe cases were identified with 70-100 scoring. Data was analyzed by SPSS-25.

RESULTS

There were more female students in this study than males with a frequency of 56.37% in comparison with 43.63% males. However, the number of males was also not very low than females (Table 1). The mean age was 24.5±0.6 years and majority of the selected students who consented for their participation in this research belong to final years of their education and were in the age group of 22-24 years (Table 2).

The scoring results showed that highest yes score was documented for the pain query of teeth articulation dissymmetry (22%) which was followed by 10.9% cases having pain in mandible side wise movement. Similarly lowest query of sometimes pain in mouth opening was documented by 16.1% participants while 39.5% were such patients having an articulation dissymmetry of teeth (Table 3).

Table 1: Frequency of genders (n=550)

Gender	No.	%
Males	240	43.63
Females	310	56.37

Table 2: Distribution of age according to genders

Age (years)	Males	Female	Total
18-19	50(20.8%)	54(17.41%)	104(18.9%)
20-21	54(22.55)	59(19.03%)	113(20.5%)
22-24	136(56.6%)	197(63.54%)	333(60.5%)

Table 3: Fonseca's Query question and response frequency

Pain Query	Yes	Sometimes	No
Mouth opening	16(2.9%)	89(16.1%)	445(80.9%)
Mandible sidewise movement	60(10.9%)	195(35.5%)	295(53.6%)
Chewing	46(8.3%)	198(36%)	306(55.6%)
Cranio-mandibular ache	11(2%)	96(17.5%)	443(80.55)
Clicking with mastication	9(1.6%)	168(30.54%)	373(67.85)
Teeth articulation dissymmetry	121(22%)	217(39.5%)	212(38.55)
Anxiety driven	34(6.1%)	94(17.1%)	422(76.7%)

For rest of the three Fonseca query questions it was seen that 46.1% participants were sometimes having firm neck problem which was also confirmed by yes reply by other 4.7% students (Fig. 1). The results showed an overall 6% response of all the questions as yes, followed by 31% answers reply as sometimes while 63% had no TMD presented in them (Fig. 2). Within this prevalence there were 20.36% were those students who had mild TMD, 10.54% had moderate while 6% had severe TMD. Rest of the 63% did not suffer from any temporomandibular ailment (Fig. 3)
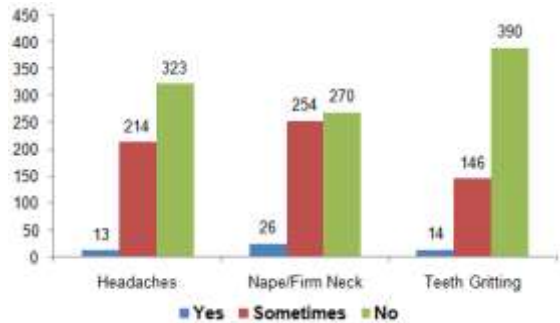

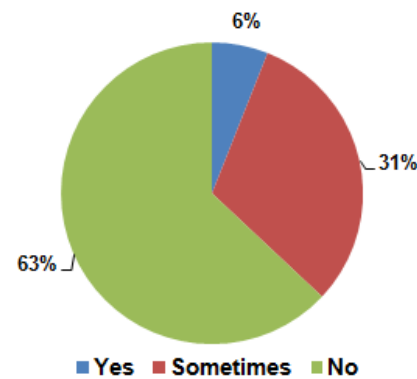Fig. 1: Fonseca questionnaire queries related to headaches, firm neck and teeth gritting

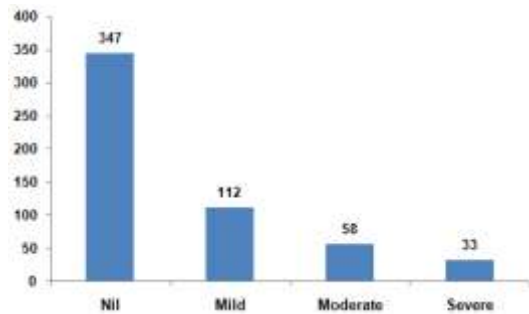Fig. 2: Prevalence of TMD in dentistry students

Fig. 3: Severity chart of TMD among dentistry students

DISCUSSION

The mean age of the participants enrolled was 25 years. Roberta and his colleague[5] in 2015 elaborated the fact that majority of the adults who suffered from TMD were between the age group of 20-40 years with females being more prone towards this condition than males as also seen in the current research.

The present study analyzed in depth the prevalence of TMD among dentistry student and revealed surprising results. The results showed a prevalence rate of 37% students who were suffering from TMD. In addition to this there were 6% those cases who were having severe conditions of temporomandibular ailment.

The international FAI based rate of TMD has been described as around 42% in some studies while other has also reported a higher rate as 68%.[14-17]

The alteration in the exact frequencies similarity could be attributed to cultural disparities, sampling size as well as physical changes. Anxiety has a major contribution in causing TMD as has been mentioned in many earlier studies[18,19] as well as the present reported study.

In this study the Fonseca's questionnaire based approach was adapted which seemed to be an efficient method of scoring and identifying the TMD cases in general dentistry student population. However, this is not the only reported approach. There are other methods also applied for describing and identifying TMD in population as mentioned in studies of Truelove et al[18] and Peck et al.[19]

CONCLUSION

There were 20.36%thosedentistry students who had mild TMD, 10.54% had moderate while 6% had severe TMD. Overall a 37% had temporomandibular disorders

REFERENCES

1. Scrivani SJ, Keith DA, Kaban LB. Temporomandibular disorders. N Engl J Med 2008;359(25):2693–2705.
2. Gonçalves DA, Camparis CM, Speciali JG, et al. Temporomandibular disorders are differentially associated with headache diagnoses: a controlled study. Clin J Pain 2011;27(7):611–5.
3. Lim PF, Smith S, Bhalang K, et al. Development of temporomandibular disorders is associated with greater bodily pain experience. Clin J Pain 2010; 26(2):116–20.
4. Maixner W, Diatchenko L, Dubner R, et al. Orofacial pain prospective evaluation and risk assessment study - the OPPERA study. J Pain 2011;12(11 suppl):T4–11.
5. Robert L. Gauer, and Michael JS. Diagnosis and treatment of temporomandibular disorders. Am Fam Physician 2015; 91(6):378-86.
6. Kindler S, Samietz S, Houshmand M, et al. Depressive and anxiety symptoms as risk factors for temporomandibular joint pain: a prospective cohort study in the general population. J Pain 2012;13(12):1188-97.
7. Sanders AE, Maixner W, Nackley AG, et al. Excess risk of temporomandibular disorder associated with cigarette smoking in young adults. J Pain 2012;13(1):21–31.
8. Okeson JP. Joint intracapsular disorders: diagnostic and nonsurgical management considerations. Dent Clin North Am 2007; 51(1):85–103.
9. Reiter S, Goldsmith C, Emodi-Perlman A, et al. Masticatory muscle disorders diagnostic criteria: the American Academy of Orofacial Pain versus the research diagnostic criteria/temporomandibular disorders. J Oral Rehabil 2012;39(12):941–7.
10. Stohler CS. Muscle-related temporomandibular disorders. J Orofac Pain 1999;13(4):273–84.
11. De Leeuw R, Klasser GD, American Academy of Orofacial Pain. Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management. 5th ed. Chicago, Ill.: Quintessence Publications, 2013.
12. Zaigham AM. Prevalence and severity of temporomandibular disorders in medical/dentistry undergraduate students. JPDA 2021;30(02).
13. Chandak RM, Pandhripande RM, Sonule SS, Chandak MG, Rawlani SS. To assess the prevalence of signs and symptoms of temporomandibular disorders in Vidarbha population by Fonseca's questionnaire. J Oral Res Review 2017; ;9(2):62.
14. Modi P, Shaikh SS, Munde A. A cross sectional study of prevalence of temporomandibular disorders in university students. Int J Sci Res Publ 2012;2:1-3.
15. Nomura K, Vitti M, Oliveira AS, Chaves TC, Semprini M, Siéssere S, et al. Use of the Fonseca's questionnaire to assess the prevalence and severity of temporomandibular disorders in Brazilian dental undergraduates. Brazi Dent J 2007;18:163-67.
16. Oliveira AS, Dias EM, Contato RG, Berzin F. Prevalence study of signs and symptoms of temporomandibular disorder in Brazilian college students. Brazi Oral Res 2006;20:3-7.
17. Zareef U, Arshad S, Abid M, Qureshi NR, Ali SA. Frequency of temporomandibular joint disorders among medical and dental undergraduate students in Karachi by Fonseca questionnaire. J Oral Hyg Health 2018;6: 242.
18. Truelove EL, Sommers EE, LeResche L, Dworkin SF, Von Korff M. Clinical diagnostic criteria for TMD new classification permits multiple diagnoses. J Am Dent Assoc. 1992;123:47-54.
19. Peck CC, Goulet JP, Lobbezoo F, Schiffman EL, Alstergren P, Anderson GC, et al. Expanding the taxonomy of the diagnostic criteria for temporomandibular disorders. J Oral rehabilitation 2014 ;41:2-3.