Research Article

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Pervasiveness of Bruxism and Stress and the Association Between them Among Undergraduate Students at BUITEMS

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Abstract

Bruxism, a common oral para-functional activity recognized by the grinding of teeth or jaw clenching during the sleep and awaking and it causes different problem to the oral system which include the pain in jaws, teeth damage (dental problem), facial pain etc. This cross sectional study was conducted among the undergraduate students at BUITEMS. The participants included in this study were selected randomly from different departments keeping the sample size 200. Study was conducted with the help of a self-developed validated questionnaire designed to find information about bruxism and its association with stress. Data from this study revealed that etiological factor of bruxism in term of stress were evident more in the self-reported Bruxists which was found to be (69%) in females undergraduates as compared to (42%) in males that had prominent dental fractures.

Key words: Bruxism, Stress, BUITEMS, Undergraduates

Introduction

Bruxism is defined as a parafunctional oral disorder characterized by continuous gnashing, crunching, scrunching and grinding of teeth during the sleep and awaking and it causes different problem to the oral system which include the pain in jaws, teeth damage (dental problem), facial pain and pain in mind. It is the disorder which is found in every age with different types [1], [2]. Bruxism is considered to be an important etiological factor of oral diseases [3],[4],[5],[6] This may either be due to the detrimental motor activity of exerting undue force on the dentition or to the associated precipitated stress resulting in manifestations of symptoms on the teeth, periodontium, and musculoskeletal system [7]. The centrally-mediated theory views bruxism as a sleep-related disturbance, whereas the local mechanical theory views it as an occlusion-related problem. [8], [9], [10]. There is difference in the measurement of the activity of bruxism during the sleep conditions and during the non-sleep conditions measured by different medical devices. Awake bruxism (the jaw grinding) is reported about 20% founded in adult population and its reasons are anger, stress and anxiety. When the patient of bruxism does the activity of crunching

teeth, he doesn't know until his family members make him know or tell him about the disorder and the result of such disorder is clear which lead to almost problem in facial anatomy. By recent studies it is reported that sleep bruxism occurs 7 to 14 times per hour of sleep [11]. Epidemiology of bruxism has been relatively neglected as no comprehensive study on bruxism in Pakistan or other countries in the region exist in the literature [12], [13]. The purpose of this study was to determine self-reported bruxism experience among undergraduate at BUITEMS and also to find correlation between emotional stress and bruxism.

Materials And Methods

This study was a cross sectional study conducted among the undergraduate students at Balochistan University of Information Technology, Engineering and Management Sciences (BUITEMS). Informed consent was obtained from the participants. The participants included in this study were selected randomly from different departments keeping the sample size 200. Study was conducted with the help of a self-developed validated questionnaire designed to find information about bruxism and its association

with stress, its causes, and obvious signs in acute and severe form and also to devise interventions to reduce or control its incidence. This self-administered questionnaire elicited information on demographic characteristics (age, gender), bruxism experience, chewing difficulty, shocking sensation, stress/anxiety, and dental care experience. Undergraduates were diagnosed with Bruxism by the appearance of prominent dental wear facets associated with the presence of one of the following signs or symptoms such as self-report of tooth-grinding, increased tooth sensitivity, jaw pain, discomfort in the jaw musculature upon waking. Statistical analysis of the data was done using Microsoft excel.

Results

Out of 200 undergraduates, 100 males and females were selected at random, studying in different departments at BUITEMS.

Graph 1 depicts the gender wise incidence of bruxism among the undergraduates indicating higher incidence rate (69%) in females undergraduates as compared to males (42%) out of the total n= 200 as given in Table 1.

Table 1: Gender wise incidence of teeth clenching/grinding (bruxism) among the students

S.no		(N=200)	
		Male (n=100) (%)	Female (n=100) (%)
1	No of students (with bruxism)	42	69
2	No of students (without bruxism)	58	31
		Total=100	Total=100

Graph 1: Gender wise incidence of teeth grinding or clenching (bruxism) among the students

Graph 2 among the students and it was found that the students whether male or female that had prominent fractured or cracked tooth mainly suffers from bruxism as indicated in Table 2 represents dental condition wise incidence of bruxism

Table 2: Dental condition wise Incidence of bruxism among the students

S.no	Dental conditions	(N=200)	
		Male (n=100) (%)	Female (n=100) (%)
1	Tooth fractures/ cracked tooth	41	59
2	increased tooth sensitivity	7	9
3	tooth nerve damage	3	5
4	None of the above	49	27
		Total=100	Total=100

Graph 2: Dental condition wise Incidence of bruxism among the students

Graph 3 depicts the gender wise incidence of stress among the undergraduates and it was found to have higher incidence rate (61%) in females undergraduates as compared to males (37%) out of the total n= 200 as given in Table 3.

S.no		(N=200)	
		Male (n=100)	Female (n=100)
1	No of students (with stress)	37	61
2	No of students (without stress)	63	39
		Total=100	Total=100

Table 3: Incidence of stress among the students

Graph 3: Gender wise incidence of stress among the students

Graph 4 shows the association of bruxism with stress among the undergraduates which was found to be significantly prevalent in those students which suffers from stress as indicated by Table 4.

Table 4: Association of bruxism with stress among the students

Graph 4: Association of bruxism with stress among the students

Graph 5 and Table 5 shows the association and prevalence of bruxism with different factors

Table 5: Situation wise incidence of bruxism among the students

S.no	Situation	(N=200)	
		Male (n=100) (%)	Female (n=100) (%)
1	stress	37	63
2	facial pain/ jaw pain	2	0
3	smoking	17	0
4	any other (specify)	44	37
		Total=100	Total=100

Graph 5: Situation wise incidence of bruxism among the students

DISCUSSION

Our study revealed that higher incidence of bruxism was found to be among female undergraduates 69% while 42% males out of 100 suffered from this dental condition (n= 200).The females significantly reported

S.no		(N=200)	
		Male (n=100) (%)	Female (n=100) (%)
1	No of students (with bruxism)	42 (n=100)	69 (n=100)
	No of students (with stress)	37 (n=100)	61 (n=100)
2	No of students (without bruxism)	58 (n=100)	31 (n=100)
	No of students (without stress)	63 (n=100)	37 (n=100)

bruxism more than males which were opposite to report of study among Japanese working population [14] but similar with findings of a study in Istanbul, Turkey [15]. High incidence of bruxism in female undergraduates accounts for their sensitive nature as indicated by their high stress level due to fearful anticipation, irritability, restlessness, inability to relax, depression etc. However on the other hand low stress level was observed in males which accounts for their low incidence of bruxism among them as they take the effect of these factors or feelings less. Therefore the level of stress was also found to be minimum among male undergraduates which was found to be 37%. So it was clear that stress contributes etiologically to bruxism as bruxers report more symptoms of stress than the nonbruxers [16], [17], [18]. Association between stress and bruxism may lie in previous reports that cited bruxism as an outcome of emotional or psychological disturbances faced by an individual [19]. Bruxists reported higher history of dental injury as indicated in Table 2 that undergraduates that suffers from bruxism had prominent fractured or cracked tooth. The prevalence of self-reported bruxism was related with tooth fractures, increased tooth sensitivity, high stress level, smoking in males etc, [20]. Smokers had a 2.72-fold higher risk of bruxism than nonsmokers [21]. There are other factors that might contribute in causing bruxism such as shocking sensation, tooth mobility, nail biting, chewing difficulty, jaw injury, joint noise/pain on mouth opening and/closing etc [22]. Number of limitations were present in this analytical study such as socioeconomic status of the students, financial issues, substance abuse were not elicited. The report of this study may be limited by the fact it is solely on self-report as other objective methods of assessment of bruxism such as detailed clinical oral examination and electromyography do exist. However, self-reporting is accepted mode of evaluation as it will help to establish if the problem exists and facilitates the utilization of other more objective evaluation methods.

CONCLUSION

Data from this study revealed that etiological factor of bruxism in term of stress were evident more in the self-reported bruxists. Therefore it is essential to report this problem at university level because it might have disturbing effects in the future. There is also a need for dentists to suspect bruxism in undergraduates at BUITEMS presenting with oral health problems such as shocking sensation, tooth mobility, nail biting, chewing difficulty, jaw injury, joint noise and pain on mouth opening/closing, to give a holistic care.

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