

# PREVALENCE OF BRUXISM IN UNDERGRADUATE STUDENTS, CLINICAL STAFF AND PATIENTS AT REHMAN COLLEGE OF DENTISTRY

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## ABSTRACT

*The objective of this study was to determine the prevalence of bruxism in undergraduate students, clinical staff and patients at Rehman College of Dentistry, Peshawar.*

*This cross sectional descriptive study was conducted at Rehman College of Dentistry, Peshawar on 130 participants. The inclusion criteria were both genders, Pakistani nationals, age 20 to 60 years, dentate patients and mentally sound participants. The bruxism diagnosis was based on the criteria of the American Academy of Sleep Medicine. SPSS 20.0 was used for data analysis. Descriptive statistics were computed. Stratification of bruxism among genders and age groups were conducted using chi-square test. P-value less than 0.05 were considered significant.*

*Males (n=72, 55%) were more in number than females (n=58, 44.6%). The mean age was 30.32±10.64 year with a range of 20 to 60 years. Overall 59(45.38%) participants had the habit of bruxism. High prevalence of bruxism was found in patients (n=35, 58.3%) followed by clinical staff (n=9, 45%) and least was in undergraduate dental student (n=15, 30%). These differences were statistically significant (P<0.05). Age and gender had no effect on the prevalence of bruxism (P>0.05).*

*About half of our sample had the habit of bruxism. High prevalence of bruxism was found in patients followed by clinical staff and undergraduate dental student. Age and gender had no effect on the prevalence of bruxism (P>0.05).*

**Keywords:** *Bruxism, clenching, dental patient, undergraduate dental student*

## INTRODUCTION

Masticatory system activities can be classified into two categories; functional category comprises of mastication, phonation, and parafunctional category includes clenching or grinding of the teeth (called bruxism). Muscle hyperactivity is a term sometime coined for parafunctional activity.<sup>1</sup> Bruxism is considered a pathological entity if associated with involuntary sliding motions of the mandible. The features of bruxism/parafunctional habit are clenching and/or grinding of teeth, capable of cause damage to the integrity of the stomatognathic system structures.<sup>2</sup> The other features of bruxism are extreme sliding movements in the temporomandibular joint, gross attrition on the incisal edges of the anterior and the cusps of the posterior teeth,

pterygoid muscles involuntary contraction accompanied by obnoxious night-time grinding sounds.<sup>3,4</sup>

Treatment is often a challenge for occlusal related disorders from both the dental surgeon and the patient perspective. From its associated symptoms of these conditions, it is frequently difficult to diagnose.<sup>5</sup> At present, no definite care exists that can eliminate sleep bruxism. But, behavior modification based therapy for instance habit awareness, habit reversal therapy, relaxation techniques, and biofeedback massed therapy, may stop awake bruxism.<sup>6</sup> To decrease the harmful sequela of bruxism, a variety of methods have been proposed. The most frequent modality is the use of different inter-occlusal appliances such as occlusal splints, night guards, etc., Recent reviews have been drawn conclusion that these appliances are useful adjuncts in the management of sleep bruxism but not a definitive or curative treatment of bruxism.<sup>1,6</sup>

In young people aged between 18 and 29 years, the prevalence of bruxism was 13%.<sup>7</sup> Another study on Brazilian population on undergraduate students showed that 31.6% of the students had bruxism.<sup>8</sup>

Investigations have found an association between

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bruxism and temporomandibular disorders (TMD), and that both may be involved in triggering and/or maintaining these conditions.<sup>9, 10</sup> Students affected by bruxism have tendency to have an irregular sleep pattern, delay in the beginning and ending of sleep.<sup>11</sup>

No local literature is available on this topic so this study will help to the status of bruxism in local population. Dental treatment needed to modify while providing patients having bruxism. The objective of this study was to determine the prevalence of bruxism in undergraduate students, clinical staff and patients at Rehman College of Dentistry, Peshawar.

## MATERIALS AND METHODS

This cross sectional descriptive study was conducted at Rehman College of Dentistry, Peshawar. This study was approved by the research ethics committee of the hospital. The participants were informed about the nature of research and its objectives and procedures. After this explanation, informed consent was taken.

Sample size of 130 was calculated by WHO calculator at 95% confident interval, 8% margin of error using the prevalence of bruxism in undergraduate students to be 31.6% from previous study.<sup>8</sup> The participants were undergraduate dental students, clinical staff and patients and were selected by convenient sampling technique. This comparison among diverse was made to know group is more to bruxism. The inclusion criteria were genders, Pakistani nationals (assessed on basis of CNIC), age 20 to 60 years, dentate patients

and mentally sound participants. Participant having psychiatric disorder, unable to give proper answer to questionnaire and uncooperative were excluded.

In the current study, the bruxism diagnosis was based on the criteria of the American Academy of Sleep Medicine<sup>12</sup> reporting tooth-grinding or clenching in combination with at least one of the following conditions by intraoral examination: abnormal tooth wear, sounds associated with bruxism, and jaw muscle discomfort. Data were collected using pre-structured questionnaire.

Data were collected and entered in SPSS version 20.0. Descriptive statistics in the form of frequencies and percentages were computed for qualitative variables like gender, prevalence of bruxism. Mean and standard deviation were calculated for age of the participants. Stratification of bruxism among genders and age groups were conducted using chi-square test. P-value less than 0.05 were considered significant.

## RESULTS

Total participants in this study were 130. Males (n=72, 55%) were more in number than females (n=58, 44.6%). Of participants; 20 were clinical staff, 50 were undergraduate students and 60 were patients. The mean age was 30.32±10.64 year with a range of 20 to 60 years. Most common age group was 20-30 years (n=84, 64.6%) followed by 31-40 year (n=23, 17.7%). Least of number of participants were in age groups 51-60 years (n=8, 6.2%).

TABLE 1: FREQUENCY OF BRUXISM STRATIFIED BY PARTICIPANTS

Participants	Bruxism				P-Value*
	Yes		No		
	N	%	n	%	
Clinical Staff	9	45.00	11	55.00	0.012
Under graduate Student	15	30.00	35	70.00	
Patient	35	58.30	25	41.70	

\*Chi-square test

TABLE 2: FREQUENCY OF BRUXISM STRATIFIED BY AGE GROUP

Age group	Bruxism				P-value *
	Yes		No		
	N	%	n	%	
20-30	32	38.10	52	61.90	0.116
31-40	12	52.20	11	47.80	
41-50	10	66.70	5	33.30	
51-60	5	62.50	3	37.50	

\*Chi-square test

TABLE 3: FREQUENCY OF BRUXISM STRATIFIED BY GENDERS

Gender	Bruxism				P-value*
	Yes		No		
	n	%	n	%	
Male	31	43.10	41	56.90	0.552
Female	28	48.30	30	51.70	

\*Chi-square test

Overall 59(45.38%) participants had the habit of bruxism. High prevalence of bruxism was found in patients (n=35, 58.3%) followed by clinical staff (n=9, 45%) and least was in undergraduate dental student (n=15, 30%). These differences were statistically significant (P<0.05). (Table 1) Age and gender had no effect on the prevalence of bruxism (P>0.05). (Table 2 & 3)

## DISCUSSION

This study was aimed to determine the prevalence of bruxism. Bruxism is a diurnal or nocturnal para-functional activity of the jaw muscles that includes the habit of tooth grinding, clenching, squeezing, or touching of the teeth.<sup>13</sup>

In the current study males were more than females. This may be due to more number of males in staff of this institute and financial independence of male patients to present to private treatment. Soares et al.<sup>8</sup> in a study on prevalence of bruxism in undergraduate students had more females than males. Their study included only undergraduate dental student; females may more in their institute than males. Of participants; 20 were clinical staff, 50 were undergraduate students and 60 were patients. We have employed convenient consecutive sampling technique to get larger sample.

Our findings showed that overall 45.38% participants had the habit of bruxism. This prevalence is higher than international studies. This may be due to more tension and stress in our country as compared to other countries. Serra-Negra et al.<sup>11</sup> in research in Brazil prevalence of 21.5% of nocturnal bruxism self-reported by patients. This difference in prevalence of bruxism from the current study may be due to diagnostic criteria and indexes used, socioeconomic condition, cultural factors, geographical locations, and population characteristics.

Soares et al.<sup>8</sup> conducted a study on Brazilian undergraduate dental students and reported that 31.6% had bruxism. In our study in undergraduate student 30% had bruxism. These results are similar to Soares et al.<sup>8</sup>

To our knowledge no study has been reported in literature regarding bruxism in clinical staff of dental institute. The more prevalence of bruxism in clinical

staff than students in our study may be due to more stressful job of staff. The prevalence of bruxism in the present study was 58.30% in patients reporting for dental treatment. Previous study showed that 5 to 20% in general population.<sup>14</sup> The difference may be due to diagnostic criteria used, socioeconomic condition, cultural factors, geographical locations, and population features.

The current results showed that bruxism is not different among genders. Similar results were reported by Friedman Rubin et al.<sup>15</sup> But in their study the secondary outcome was the prevalence of temporomandibular disorders and they performed their study on orphans. However, another study conducted on the students attending Necmettin Erbakan University, Faculty of Dentistry showed that the rate of bruxism was higher in females than males.<sup>16</sup>

Another study investigated that the prevalence of awake and asleep bruxism and its correlation with perceived stress in a group of 278 Italian undergraduate students. They reported that University students showed higher bruxism and stress levels compared to the general population.<sup>17</sup> These results are in favor of our study in the way that in our findings the prevalence of bruxism in dental students was higher than patients.

## CONCLUSION

The prevalence of bruxism was much higher. High prevalence of bruxism was found in patients followed by clinical staff and undergraduate dental student. This may show increased stress in patients and clinical staff as compared to students. Age and gender had no effect on bruxism.

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#### CONTRIBUTIONS BY AUTHORS

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## CORRIGENDUM

Article titled "Assessment of Correlation between cranial base angle & skeletal dysplasias" Published on page-3 in Vol 39, No.1 March 2019 issue. Correct address of first author should be read as Farah Saleem

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