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Research Article

**ANALYSIS BETWEEN TEMPOROMANDIBULAR JOINT  
DISORDERS (TMDS) ASSOCIATED WITH BRUXISM IN  
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**Abstract:**

**Aims and objectives:** The main objective of the study is to analyse the temporomandibular joint disorders (TMDS) associated with bruxism in Pakistan.

**Material and methods:** This cross sectional study was conducted in Islamic International dental hospital Riphah University Islamabad during 2018 to 2019. Patients were categorized into two groups, the first group consisted of TMD associated with bruxism patients (experimental), and the second group was TMD only patients (control). The data was collected through a questionnaire.

**Results:** The data was collected from 50 patients. 16 participants were in TMD group and 34 participants were in TMD associated with bruxism group. The age ranged from 18 to 72 years with a mean age of 31 years. The sample power was 86 % at the level of significance 0.05. In this study, highly significant differences were observed between pain in the TMD group and the TMD associated with bruxism group. Pain in the TMD patients was higher than the TMD associated with bruxism patients.

**Conclusion:** It is concluded that the pain was more during mouth opening, chewing, yawning and talking in TMD patients than TMD associated with bruxism.

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**INTRODUCTION:**

Temporomandibular joint disorder (TMD) is a term guided by a cascade of circumstances afflicting the orofacial region and its neighboring masticatory muscles, temporomandibular joint (TMJ), and associated structures. TMD has a multifactorial etiology where several factors have been implicated by a recent systematic review to play a role in inducing, perpetuating, as well as aggravating TMD [1]. The authors asserted the relevance of early identification of possible etiological factors as well as the degree of independent involvement of each factor in hopes of inhibiting the downhill direction that untreated and unaddressed cases of TMD would ultimately lead to. This entails and is not limited to a worse prognosis in terms of pain, psychological discomfort, physical disability, and limitation of mandibular movement [2].

Bruxism is an excessive jaw-muscle activity identified by clenching or grinding of the teeth. Bruxism can occur during sleep "Sleep Bruxism" (SB) or while awake "Awake Bruxism (AB) or Diurnal Bruxism (DB). Many theories have suggested that bruxism have multifactorial etiology [3]. SB have a mutual relationship or connection with peripheral factors such as tooth interference in dental occlusion, psychosocial factors, stress or anxiety and central or pathophysiological causes involving brain neurotransmitters. Bruxism is not a threatening condition, but it affects the quality of human life, especially in cases of those problems which affect the oral and dental health such as tooth wear, fractures of dental restorations, prosthesis and pain in the orofacial area [4].

It is of interest that the peak of TMD symptom development is at its highest in the second to the fourth decade, which coincides with the childbearing years. This reflects on the progress of the condition where sleep bruxism decreases with age similar to the strength and tonicity of orofacial musculature which also decline with maturing age [5]. Hence, the complications of tonic and phasic bursts of clenching masseter and temporalis muscles dissipate in direct relation to the age of individuals as documented by

several studies. This is fascinating that it coincides with the peak of TMD symptoms [6].

**Aims and objectives:**

The main objective of the study is to analyse the temporomandibular joint disorders (TMDS) associated with bruxism in Pakistan.

**MATERIAL AND METHODS:**

This cross sectional study was conducted in Islamic International dental hospital Riphah University Islamabad during 2018 to 2019.

**Data collection:**

Patients were categorized into two groups, the first group consisted of TMD associated with bruxism patients (experimental), and the second group was TMD only patients (control). The data was collected through a questionnaire. The questionnaire comprised of 13 questions, the first five questions (Q1-Q5) were about the feeling of pain during mouth opening, chewing, yawning, talking and jaw lock during mouth opening/ closing. Whereas the remaining eight questions (Q6- Q13) were about the pain during palpation on specific anatomic locations with "Yes" or "No" options.

**Statistical analysis:**

The data obtained were analyzed using SPSS software version 20.0. Chi square test was performed to determine any significant difference between the groups.

**RESULTS:**

The data was collected from 50 patients. 16 participants were in TMD group and 34 participants were in TMD associated with bruxism group. The age ranged from 18 to 72 years with a mean age of 31 years. The sample power was 86 % at the level of significance 0.05. In this study, highly significant differences were observed between pain in the TMD group and the TMD associated with bruxism group. Pain in the TMD patients was higher than the TMD associated with bruxism patients.

**Table 01:** Analysis of screening of both groups

	Frequency, <i>n</i> (%)
<b>Chewing hard or tough food</b>	
Yes	39 (25.7)
No	113 (74.3)
<b>Opening your mouth or moving your jaw forward or to the side</b>	
Yes	31 (20.4)
No	121 (79.6)
<b>Jaw habits such as holding teeth together, clenching, grinding, or chewing gum</b>	
Yes	59 (38.8)
No	93 (61.2)
<b>Other jaw activities such as talking, kissing, or yawning</b>	
Yes	20 (13.2)
No	132 (86.8)

**DISCUSSION:**

There are many studies carried out on stress, but few that utilize DC/TMD together with PSS and headaches. A TMD tool for diagnoses is not clearly described in other studies; this study uses the DC/TMD symptom questionnaire and screener which has high validity and reliability together with the PSS. The robust statistical analysis used in this study helps elaborate the association between TMD, stress, and headache [7].

Myofascial pain is a common subset of TMD, and it is well known that jaw muscle pain and motor function are interrelated. This study was specifically designed to measure the correlation between the bruxism and TMD based on a clinician's interview/oral history taking besides clinical assessment [8]. Palpation was carried out on specific anatomic locations, which included symmetric points simultaneously. In this study, there was a significant differences between a TMD associated with bruxism group and TMD only group who had anterior disc displacement with reduction [9].

Significant finding was noticed from the result of palpating the temporalis muscles in both the study groups. The present study showed that during palpation of temporalis muscles, TMD associated with bruxism group felt more pain than the TMD group only [10].

**CONCLUSION:**

It is concluded that the pain was more during mouth opening, chewing, yawning and talking in TMD patients than TMD associated with bruxism. On the other hand, pain during palpation on temporalis muscles was more in the TMD associated with bruxism patients than the TMD patients only.

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