



Association Of "Depression, Anxiety, And Stress In TMD Patients: A DASS21 Survey"

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Abstract

Purpose: Only about 5% of the general population seeks treatment for temporomandibular disorder (TMD), despite the fact that 60–70% of them are likely to suffer at least one symptom over their lifetime. However, anxiety and depression in adults are now acknowledged as major public health issues. Anxiety disorders are high-risk, chronic conditions that can lower quality of life and cause dysfunction. So the study aims is to evaluate the depression, anxiety and stress in young adults and elderly patients suffering from chronic TMD.

Methods: This study investigated the prevalence and characteristics of Temporomandibular Disorders (TMD) among two distinct groups: young adults and elderly patients, each consisting of 22 participants. Volunteers first responded to questions regarding the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) in order to gather data. Both groups then filled out the Depression, Anxiety, and Stress Scale (DASS-21) questionnaire.

Result - High DASS survey scores were found to be significantly associated with TMD symptoms, indicating a substantial correlation between TMD symptoms and stress, depression, and anxiety. According to the study, the most effective cause of TMD is stress alone.

Conclusion - Within the scope of present study as compared to young adults, depression, anxiety and stress levels are found to be more in elderly patients of chronic TMD.

Keywords - Cone-beam computed tomography. Temporomandibular disorders. Depression, anxiety and stress scale.

Introduction:

The mandibular condyle inserts into the mandibular fossa of the temporal bone to produce the temporomandibular joint. Since it is regarded as a ginglymoarthroidal joint, it can move in both hinge and gliding modes (1). A diverse set of musculoskeletal and neuromuscular illnesses known as temporomandibular disorders (TMD) affect the temporomandibular joint complex as well as the surrounding muscles and bony structures (2). It can also be characterized by pain in the temporomandibular joint (TMJ), masticatory muscles, or preauricular area. Other symptoms include a clicking sound in the TMJ during mandibular function and a restriction or deviation of motion (3).

According to Laskin (1969), the main cause of TMD is muscle hyperactivity brought on by psychological stress and chronically bad dental habits. Muscle fatigue also creates spasms, which in turn cause temporomandibular dislocation. Laskin added that this displacement results in muscle change, articular deformation, and occlusal abnormalities, all of which contribute to organic pathology (4). Psychological variables have been deemed crucial in the assessment of TMD (5). The direct link between anxiety and depression and the ensuing symptoms of TMD is a strongly debated issue, and depression and anxiety are now acknowledged as major issues in adults' general health. However, many are ignorant of TMD and its symptoms since they are frequently overlooked or mistaken for headache, odontogenic pain, or sinus pain (6). Research suggests that myofascial pain and functional somatic disorders, such chronic fatigue syndrome and fibromyalgia, are related conditions that may be brought on by psychological causes. Myofascial pain and discomfort are often associated with periods of stress and tension, which can result in parafunctional habits and muscle hyperactivity. Psychosocial variables like stress, anxiety, and depression may therefore play a significant role in the etiology of TMD (7).

Material and methods:

The current study was conducted to assess the comparative evaluation between depression, anxiety and stress with chronic TMDs in young adults and elderly patients. It was approved by the institutional ethical committee.

In this study, a total of 44 people participated which were divided in two groups: 22 in young adults and 22 in elderly patients. Patients suffering from TMD who were diagnosed according to TMD/RDC criteria with symptoms of TMD for minimum of 3 years and patients who were willing to answer completely the questionnaire with or without the help of study investigator were included in the study. Trauma to the jawbone, infection, prostheses, maxillofacial surgery, patients below 18 years of age and patients suffering from psychiatric disorder and receiving treatment for the same were excluded from the study. Participants initially responded to questions regarding the RDC/TMD, which Schiffman created in 1992 as a suitable procedure to identify patients who might have simple to complex TMD (8). Participants in this study were given portions of Axis I, a straightforward, valid, and acceptable self-report instrument that has a sensitivity and specificity of 0.95 for determining whether any kind of TMD symptoms are present (9). The patients then filled out a valid depression, anxiety, and stress questionnaire (DASS-21), which has 21 questions and three subscales measuring the cognitive and emotional aspects of psychological distress. Each subscale has seven questions, and the final score of each is determined by adding the scores of related questions.

DASS-21 scale:

The Depression, Anxiety, and Stress Scale-21 (DASS-21) was developed by Peter and Syd Lovibond in 1995. The DASS-21 is a shortened version of the original 42-item Depression Anxiety Stress Scales (DASS). Respondents are asked to rate how statements pertain to them over the course of the last week in the DASS-21, a self-report questionnaire. There are 21 items on the scale, with seven items for the subscales measuring stress, anxiety, and depression. Each statement is rated by respondents on a four-point Likert scale, ranging from 0 (never) to 3 (almost frequently). It can help determine if a person's symptoms are normal, mild, moderate, severe, or extremely severe.

Statistical analysis:

Data obtained was entered and sorted in Microsoft Excel (v.2013). Statistical analysis was performed using Statistical package for social sciences (SPSS) software (IBM Corp) (v.21.0). Frequency statistics was performed for all the parameters assessed in the study. Mann Whitney-U test was used to assess significant comparison between the 2 groups. All statistical tests were performed at 95% confidence intervals. A p value of less than 0.05 was considered as statistically significant in the study.

Results:

In the present study 44 patients with chronic TMDs were included. The frequency distribution of depression severity in both young and old patients is shown in Table No. 1. According to the statistics, all 18 of the young patients (100.0%) had normal levels of depression; none of them fell into the mild or moderate categories. The distribution among elderly patients, however, exhibits a more diverse pattern. 10 patients (55.6%) among the 18 elderly patients had normal depression, 6 patients (33.3%) had mild depression, and 2 patients (11.1%) had moderate depression.

Table 2 displays the frequency and percentage of anxiety levels. According to the study, only a tiny percentage of young patients (5.6%) have mild anxiety, while the majority (94.4%) have normal anxiety levels. On the other hand, the distribution of anxiety levels in the elderly patient group is more varied. A considerable percentage of elderly people had more anxiety, with 33.3% reporting mild anxiety and 22.2% reporting moderate anxiety, despite 44.4% reporting normal anxiety levels. This suggests that elderly individuals are more likely than their younger counterparts to have more anxiety levels.

Table 3 displays the frequency and percentage of stress levels. According to the findings, the majority of young patients (77.8%) report having normal stress levels, while a lesser percentage (22.2%) report mild stress. On the other hand, stress is more common in the elderly patient population. While a sizable number (66.7%) of elderly patients suffer mild stress, only 33.3% report normal stress levels.

In this study, the comparison between two groups was performed using Mann Whitney-U test. Table No. 4 shows statistically significant p-values (<0.05) for depression, anxiety and stress, indicating that these characteristics change significantly between young and elderly TMJ patients. Compared to elderly patients, who may experience particular pressures associated with aging, health issues, and social isolation, young patients with TMJ disorders would need alternative coping mechanisms and supports.

Depression				
	Young patients		Elderly patients	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Normal	18	100.0	10	55.6
Mild	0	0	6	33.3
Moderate	0	0	2	11.1
Total	18	100.0	18	100.0

Table 1. Frequency distribution of depression between young and elderly patients

Anxiety				
	Young patients		Elderly patients	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Normal	17	94.4	8	44.4
Mild	1	5.6	6	33.3
Moderate	0	0	4	22.2
Total	18	100.0	18	100.0

Table 2. Frequency distribution of anxiety in two groups

Stress				
	Young patients		Elderly patients	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Normal	14	77.8	6	33.3
Mild	4	22.2	12	66.7
Total	18	100.0	18	100.0

Table 3. Frequency distribution of stress in two groups

	Young patient's vs old patients		
Parameter	Depression	Anxiety	Stress
Mann-Whitney U	90.000	79.000	90.000
P value	.002*	.001*	.008*

Table 4. *p value <0.05 statistically significant

Discussion:

The study aims to assess the relationship of depression, stress and anxiety in young adults and elderly patients suffering from chronic temporo-mandibular disorders. In the present study, two groups were made of young adults and elderly patients. A significant association between patients with TMD symptoms and high scores in DASS surveys was found, meaning that a significant association between stress, depression, anxiety with TMD symptoms could be seen. In this study, stress alone was identified as the most effective cause of TMD. Stress, anxiety and depression are well-known psychological issues that a person may experience at some point in life. Although the disease is often transient, anxiety and depression may also be a chronic mental illness and its health consequences have been extensively studied.

Being a multifactorial disease affecting the stomatognathic system, TMD is influenced by many factors which includes elevated anxiety levels, symptoms of depression and somatization, and psychological stress. These biopsychosocial factors may be involved in predisposition as well as progression of TMD(10). TMD affects up to 15 to 20% of adult patients, with a peak incidence at 20 to 40 years of age(1). It tends to be more common in women (2). Vojdani et al believed that it was a mistake to think that women were suffering more from TMD than men. Although extensive epidemiological studies showed that the proportion of TMD signs and symptoms was equal for both male and female subjects, women were more likely to seek treatment and more receptive to pain than men, so most patients, especially in dental cases, were women. Therefore, it seems that a combination of these factors has led to such a relationship between the two sexes (11). Kanehira et al recognized the important role of psychological factors such as stress in TMD, which suggested that not only these factors but also controlled studies should be considered in the treatment of TMD (12). A study by Sabrina Noda et al. (2017) evaluated the psychosocial aspects in patients with TMD, highlighting the role of catastrophic pain, anxiety, and depression. This aligns with our findings on the association between high DASS scores and TMD symptoms (13). Erick Alves dos Santos et al. (2022) conducted a systematic review that confirmed a significant association between anxiety and TMD. This supports our observation of a strong link between stress, depression, anxiety, and TMD symptoms (14). Mridul Arya et al. (2022) investigated the incidence of TMD in a non-patient population and found strong correlations between depression and TMD symptoms. This further supports our finding that stress is a significant cause of TMD.(15)

Conclusion:

While stress, depression, and anxiety are significantly associated with TMD symptoms, stress alone was identified as the most effective factor in developing TMD. Within the scope of present study as compared to young adults, depression, anxiety and stress levels are found to be more in elderly patients of chronic TMD.

Limitation: More-detailed clinical examination of TMD signs and symptoms and imaging tests to confirm the diagnosis would have been useful on a larger sample size.

Conflicts of interest: none declared

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