



Comparing the Anxiety Level between Myofascial Pain Dysfunction Syndrome Patients and Others

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Abstract

Myofascial pain dysfunction syndrome (MPDS) is the most common temporomandibular disorder and a psychophysiological disease that primarily involves the muscles of mastication and can cause pain, mouth opening limitation, mandibular deviation during mouth opening and closing and tenderness of one or more masticatory muscles or tendons. Among various ideas about the etiologic factors of MPDS, two main reasons are occlusal disorders and mental health problem. More researches recently, focus on mental health problem as the main and initial factor of MPDS. Anxiety is one of the most fundamental psychological problem that exists in almost all societies, it increases muscle's tonicity and thus leads to pain. Considering the high prevalence of anxiety in patients suffering from this syndrome, this study is to investigate anxiety intensity in these patients and compare that with two control groups. The first control group were 30 patients who referred to dental school because of any problems except MPDS, and the second one included 30 Shiraz citizens. All three groups were informed about the procedure of the study and then completed Spielberger Anxiety Intensity Questionnaire, that had been validated before. Then a psychologist checked and graded the questionnaires. Using spss v.15 we analyzed the data with ANCOVA and Chi-Square tests. This study demonstrated that the MPDS patients had more anxiety than the common people of the society. The significant point in our study was the comparison of anxiety level in MPDS patients with the other patients that referred to dental school with a reason other than MPDS which revealed no significant statistically difference. According to this result, we can say that the high anxiety level in MPDS patients may be not related to the disease and can be due to the situation they share with others who refer to dental school, so the anxiety may be the result of their disease and not the cause.

Keywords: Myofascial Pain Dysfunction Syndrome (MPDS); ANCOVA; Temporomandibular Disorder

Introduction

Any dysfunction in chewing system such as muscles, temporomandibular joint and related parts, can cause pain and disorders in the region [1,2]. Myofascial pain dysfunction syndrome (MPDS)

is the most common temporomandibular disorder (TMD) [3,4], the most common cause of chronic orofacial pain and after toothache is the most prevalent cause of patient's refers to dentists' office [5,6]. MPDS is a psychophysiological disease that primarily involves the

muscles of mastication and can cause pain, mouth opening limitation, mandibular deviation during mouth opening and closing and tenderness of one or more masticatory muscles or tendons [7]. Patients also may suffer from some problems such as headache, earache, hypertrophy of masticatory muscles and abnormal attrition of occlusal surfaces of teeth [7,8]. Among various ideas about the etiologic factors of MPDS, two main reasons are occlusal disorders and mental health problem [8,9]. Some studies show that occlusal disorder is the main factor of the syndrome. For example, Cooper, *et al.* demonstrated a positive correlation between the clinical symptoms of MPDS and unhealthy mandibular position at occlusion, accompanied by specific unhealthy muscle activity [10]. On the other hand, some other studies express that occlusal disorder is not the initial factor but plays as an intensive and secondary factor in MPDS [11]. However, more researches recently, focus on mental health problem as the main and initial factor of MPDS [8]. Anxiety is one of the most fundamental psychological problems that exists in almost all societies. It can be demonstrated as a vague fear and being concerned [12]. Patients suffering from MPDS are not exempt, and all have experienced some degrees of anxiety [9]. Studies have shown that reason of the anxiety of MPDS patients may be that they think their condition will be progressive and exacerbation, and related pain may become more severe and lead to future disabilities [13]. Anxiety increases muscle's tonicity and thus leads to pain. When one has a disorder that is encountering muscle spasm and pain, he/she should consider mental stress and anxiety [5,14]. Stress activates the hypothalamus then autonomous system increases gamma efferent fiber activity to make muscle contracts. Thus, a slight strain produces reflex, contraction and increases the tonicity in muscles. High level of stress, in addition to increasing the spasm of head and neck muscles, increases parafunctional activities such as bruxism and clenching [5]. Stress can be the result of a physiologic phenomenon like an exam that continues for a short period of time or personal and mental disorders such as depression, anxiety and semi physical disorders [9].

Khan studied on Zimbabwean people in mid and lower socio-economic level who account for more than 80% of the population of the country. The survey revealed a very low incidence of MPDS in this society [15]. Another study by Akhter, *et al.* in Bangladesh which was on patients with TMD determined that the group who were suffering from myofascial pain had a higher level of stress and anxiety in their lives [16]. Vojdani, *et al.* also showed that the prevalence of anxiety and depression in TMD patients is higher than healthy people [17]. Schimithier, *et al.* found in their study that who suffers from myofascial pain clearly has more chronic social stress than others [18]. Khatun, *et al.* studied on 50 MPDS patients and found that all of them had experienced degrees of anxiety and received several treatments for this syndrome. Evaluation of the treatment results showed that occlusal disorder is not the pri-

mary reason and a complex psychophysiological mechanism is the etiologic factor of this pain [19]. Honarmand, *et al.* studied on 57 MPDS patients and demonstrated that all of them (100%) suffered from at least one psychiatric disorder, and also 93% of them had anxiety disorders [9]. In Yap Au, *et al.* investigation 50.6% of MPDS patients had moderate to severe depression [20]. Esenyel, *et al.* demonstrated 89.3% of their patients suffering from anxiety disorders [21]. Considering the high prevalence of anxiety in patients suffering from this syndrome, this study is to investigate anxiety intensity in these patients and compare them with others in society.

Materials and Methods

This case-control study is done from January 2012 to February 2013 in Oral and Maxillofacial department of Shiraz dental school. In this research the anxiety intensity of 30 Myofascial pain dysfunction syndrome (MPDS) patients was compared with two control groups. We choose the first control group randomly among the patients who referred to dental school because of any problems except MPDS. The second control group included 30 Shiraz citizens. Sampling of the this group was accidentally done from different regions of Shiraz City. MPDS patients whose disease was diagnosed by an Oral and Maxillofacial medicine specialist, and had more than 18 years old consisted the case group. Among them the patients who had systemic disease with joint involvement or took medications effective on the disease or had history of surgery or trauma in TMJ region were excluded. Furthermore MPDS patients who had been treated or had inappropriate prostheses or had a recent dental procedure with occlusal interferences or those who had moderate to severe known depression were also excluded. All three groups were informed about the procedure of the study and then completed the Spillburgure Anxiety Intensity Questionnaire, that had been validated before. Then a psychologist checked and graded the questionnaires. Using spss v.15 we analyzed the data with ANCOVA and Chi-Square tests.

Results

In this study, the severity of anxiety in 30 Myofascial Pain Dysfunction Syndrome (MPDS) patients is compared with two control groups. The first control group consisted of ones who referred to dental school for a reason other than MPDS and the second one included the persons who were accidentally chosen from different zones of Shiraz. The mean age of these three groups were 37.73 (sd = 12.40), 37.80 (sd = 11.97), 30.57 (sd = 11.19) while the age range were 18 - 74, 18 - 66 and 18 - 60 respectively. Among the MPDS patients, 27(90%) of them were female and just 3 (10%) were male. In the first control group, 17 (56.7%) were female and 13 (43.4%) were male while in the second control group, 18 (60%) were female and 12 (40%) were male. The occupation distribution between these three groups can be seen in table 1. Data of anxiety severity is available in table 2.

	Housekeeper	Self employed	University Students	Clerk	Unemployed	total
Group 1	21 (70%)	4 (13.3%)	3 (10%)	1 (3.3%)	1 (3.3%)	30 (100%)
Group 2	14 (46.7%)	9 (30%)	2 (6.7%)	4 (13.3%)	1 (3.3%)	30 (100%)
Group 3	1 (3.3%)	4 (13.3%)	13 (43.3%)	12 (40%)	0	30 (100%)

Table 1: Occupation distribution.

Anxiety severity	Group1		Group2		Group3		Total	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Low	0	0	0	0	0	0	0	0
Moderate	4	13.3	11	36.7	20	66.7	35	38.9
Severe	26	86.7	19	63.3	10	33.3	55	61.1
	30	100	30	100	30	100	90	30

Table 2: Severity of anxiety.

Controlling the effect of age and sex in groups, there was no meaningful difference in anxiety level between case group and the first control group ($p \approx 0.057$) but there was a significant difference between MPDS patients and the second control group ($p \approx 0.00$) (Table 3).

Group	Mean	sd
1	50.93	2.15
2	45.51	1.91
3	40.43	1.95

Table 3: The mean and standard deviation of anxiety in 3 studied groups by controlling the effect of age and sex (Group 1: MPDS patients, Group 2: The patients who referred to dental school because of any problems except MPDS. Group 3: 30 Shiraz citizens).

Discussion

In our study the prevalence of MPDS in women was more than men with the ratio of 9 to 1 and that is the same as other studies [20,22-24]. Higher incidence of painful disorders in women can be because of their lower tolerance to pain [5]. There is also a concept that women pay more attention to receive treatment than men. However, these cannot be a definite reason for the large deference between men and women groups [25,26].

The mean age of our patients was 37.73 ± 12.4 whereas it was reported 32.4, 35, 26.6, 33.5 and 31.3 in the studies of Hon-

armand, Mortazavi, Madani, Deboever, and Alithday respectively [9,11,22,27,28]. The higher mean age in our study in contrast with others can be because of that we had no limitation for older patients (our patients were older than 18 years old) whereas in other studies there were higher limit for age (14 - 65, 15 - 61, 14 - 48 and 18 to 49 in studies of Honarmand, Mortazavi, Mandani, and Darbandi respectively) [9,11,22,23]. Having higher limit just can lead to miss some cases such as our 74 years old patient with no reason. Having an outlook on our patients occupation revealed that 70% of them were homemakers, 13.3% were self employed and just 10% were university students. In other studies just Mortazavi, *et al.* reported the patients occupation while 51.2% of them were homemakers, 15.3% were students, 12.7% were teachers and 10.23 were retired [11]. According to their study and ours, it seems that MPDS can be more prevalent between homemakers than others.

This study shows that the MPDS patients have more anxiety than the common people of the society ($p < 0.05$) that is similar to the results of the researchers such as AKhter, *et al.* [16] and Schim-mter, *et al.* [17]. Vojdani's Study revealed that the anxiety level was more in TMD patients than the healthy people [18]. On the other hand there are still studies which demonstrate no difference between the anxiety level of TMD patients and normal control groups. In Honarmand's study that investigated the frequency of psychiatric disorders in MPDS patients [9], there is not any comparison between these patients and other members of the society. So, we cannot attribute the anxiety level to their disease. The significant

point in our study is the comparison of anxiety level in MPDS patients with the other patients who referred to dental school with a reason other than MPDS. Which revealed no significant statistically difference. According to this result, we can say that the high anxiety level in MPDS patients may be not related to the disease and can be due to the situation they share with others who refer to dental school, so the anxiety may be the result of their disease and not the cause [13].

According to the result of our study, the anxiety level was high in all three groups. Also non of these 3 groups had low anxiety level and all of them suffered from at least a moderate anxiety. This can indicate that the anxiety level in Shiraz City may be moderate to high and it seems to need to pay more attention and investigate more on the anxiety level of society.

Conclusion

According to the results of our study, although the level of anxiety was high in MPDS patients and although there was a significant difference between them and other members of the society but there was not a significant difference between the anxiety level of MPDS patients and other patients referring to dental school because of a reason other than MPDS. So we can say that the high anxiety level in MPDS patients may be not related to the disease and can be due to the situation they share with others who refer to dental school, so the anxiety may be the result of their disease and not the cause.

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