



Evaluation of Dentists' Knowledge about Symptoms and Treatments of Temporomandibular Disorders in Shiraz, Iran -2014

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ABSTRACT

To assess the knowledge of general dentists and dental specialists on temporomandibular disorders (TMD) in Shiraz. A questionnaire including 20 questions was given to 50 randomly selected general dental practitioners and specialists, Mean score of diagnosis and treatment knowledge of all participants was 27.4 ± 4.9 out of 40 achievable scores. There was a significant difference between the knowledge of specialists and that of general dental practitioners ($P < 0.05$). Age, gender, years of practice and university of education did not make any significant difference to the scores. The results of this study indicated an acceptable knowledge of participants regarding TMD.

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Introduction

Temporomandibular joint (TMJ) is one of the most complex joints in the body which contains an articular disk allowing hinge and sliding movements. Such a complex combination of movements allows painless and efficient chewing, swallowing and speaking. The synovial joint capsule and surrounding musculature are supposed to be the primary source of pain in TMJ disorders (1). Although strange, up to 75% of the population have at least one sign of temporomandibular disorders (TMD) (2). TMD is defined as a group of disorders characterized by: pain in periauricular area and TMJ, limitations/deviations of the mouth opening path and TMJ sounds during jaw movements (3). Causes of TMD are not clearly diagnosed yet but it can be associated with some factors such as bruxism, trauma to the mandible or TMJ as physical factors and also anxiety and depression as the psychosocial factors (4,5). Headache, earache, tinnitus, vertigo and dysphonia may be expected in cases of TMD (6). For TMD patients, dentists are the first doctors to be referred to; hence, it is highly needed that general dental practitioners have sufficient knowledge and skills regarding TMD to assess any irregularities in the TMJ and refer the patients to qualified TMD experts if necessary (7). The result of a study in Sweden (2001) showed that practitioners did not follow any protocol to treat TMD cases and had to refer them to orofacial pain specialists (8). Similar results were obtained in Korea in 2001 (9). Another research in Tehran-Iran showed that there was lack of knowledge of TMD among dental practitioners (10).

Concerning the results of the above stated studies that showed TMD patients were referred to specialists by general dental practitioners, and regarding the high prevalence of TMD, this

study was designed to assess the knowledge of dentists in Shiraz about symptoms and treating protocols of TMD, to evaluate the effect of variables such as degree, age, gender, the university of study and years of experience in order to use the results to revise the educating curricula if necessary

Materials and Methods

This cross-sectional study was so conducted to include dentists practicing in dental clinics and private offices in Shiraz-Iran in 2014. A questionnaire consisting of 11 multiple-choice questions about knowledge of anatomy, sign and symptoms and diagnosis, and 9 multiple-choice questions covering treatment protocols of TMD, all chosen from a regarded textbook [10] was confirmed by a team of specialists in prosthodontics (1), maxillofacial surgery (1), oral radiology (1) and oral medicine (2) of Dental School, Shiraz, Iran for validity. Demographic questions such as: university of study, years of experience, age, gender and degree were also included in the questionnaires to obtain essential information about the participants and in order to differentiate teaching methods in different universities. To ensure the reliability, the questionnaire was handed randomly to 20 general practitioners out of the study, and the evaluation was repeated in ten days. The reliability was assessed by determining the agreement of the answers in two trials using Spearman's correlation coefficients ($r = 0.982$, $P < 0.001$) and a Cronbach's alpha of 76%. ($P < 0.05$) was considered statistically significant.

Fifty dentists, chosen from a list of Fars Dental Association by using simple random sampling method, (came up to consist 41 general dental practitioners and 9 specialists), were directly referred; each of them was notified the aim of the study and the confidentiality of their answers.

The questionnaires collected after 3 days, were graded for 2 positive points for every correct answer, zero for every incorrect one and 0.5 positive point for the choice "No Idea". To evaluate knowledge, the following classification was applied:

- scores 0-22: weak
- scores 23-32: acceptable
- scores 33-40: good

The extracted data were analyzed with SPSS software (version 14, SPSS, Chicago, USA). Pearson's correlation coefficient was applied to determine the relationship between the quantitative components (age & experience) and knowledge of participants. Mann-Whitney U Test was used for the components: degree and gender and Kruskal-Wallis Test was applied for the component: university of study. The significance level was set at ($P < 0.05$).

Results

Total response rate of dentists was 100%. All the questionnaires were fully completed and none of them was lost. Among 50 participants (26 men and 24 Women) having a mean age of 38.9 ± 10.8 and mean years of practice 12.5 ± 10.4 , there were 41 general dental practitioners and 9 specialists. Mean score of diagnosis and treatment knowledge of all participants was 27.4 ± 4.9 out of 40 achievable scores (specialists: 32.2 ± 3.07 and general practitioners: 26.4 ± 4.6). Distribution of participants based on the university of education was as following: governmental 70%, non-governmental 14% and abroad 16%. Of the total 50 participants, 24 of them (19 general dental practitioners and 5 specialists) were graduated from Shiraz University of Medical Sciences. There was not any difference between their mean knowledge (mean score: 27.6 ± 5.2) and that of the whole participants (mean score: 27.4 ± 4.9) ($P = 0.366$). There was a significant difference between the knowledge of specialists and that of general dental practitioners ($P < 0.001$). The percentages of correct answers of the two groups are compared in Table 1. The factors: age, gender, years of practice and university of study did not make any significant difference to the results. P values of the above stated factors that probably influence the knowledge of diagnosis, of treatment and the total knowledge among participants are shown in Table 2. Finally 72% of all participants had acceptable knowledge, 12% were good and 16% were recognized as weak.

Discussion

As to the high prevalence of TMD and concerning that it is the second most frequent cause of orofacial pain (3) and with regard to the fact that most TMD patients initially refer to dentists, it is a matter of great importance to dental practitioners to have a comprehensive knowledge of TMD to present a correct diagnosis and effective treatment. Considering the results of this study, the majority of general dental practitioners and specialists had "acceptable" knowledge of TMD (75% & 55% respectively) while 45% of the specialists and just 5% of general dental practitioners were categorized as good. There was no difference between the graduates of Shiraz University of Medical Sciences and other participants, in the knowledge of TMD.

Several studies regarding dentist's knowledge of TMD have been carried out in different countries. One study carried out in Tehran-Iran in 2010 assessing general dental practitioners and specialists' knowledge of TMD, rated their knowledge as following: 3% low level, 72% relatively low level and 25% fair. It should be noted that they considered

scores between 56% to 77% as "relatively low level of knowledge", the range of scores that we evaluated as acceptable. This means that the results were similar but were interpreted differently. A part of their questionnaire concerning practice indicated that with increasing knowledge on TMD, the dentists showed a growing tendency to manage such patients. They also showed that with increasing age and years of practice the knowledge of participants diminished, a result in contrast to ours that may be due to the existence of specialized clinics to manage facial pain, the consequence of which was that less patients with TMD would refer to general practitioners resulting in a gradual decline in the knowledge of older clinicians on TMD (7).

Jamalpour et al investigated knowledge of general dental practitioners of Sanandaj in three domains: diagnosis, treatment and chronic pain and compared it to that of TMD experts; that comparison showed that the most of the agreement existed in treatment domain and the least in the chronic pain. This was the only factor investigated and the results could not be assessed as reliable because the questionnaire had two-choice answers only (11).

A complicated study in three counties of Sweden was performed by Tegelberg et al among public dentists on several domains such as: demographic data, quality assurance, clinical experience and expertise, attitudes and the need for specialist resources; their questionnaire covered many more domains than ours. 25%-55% of the dentists had good experience concerning diagnostics and therapy decision: a result significantly different from ours. This may be due to probable attendance in TMD courses in Sweden universities. In spite of the above mentioned fact and the fact that 55% of the participants had positive attitude, 98%-100% of public dentists had great need for specialists to consult with or to make referrals. This may be because of adequate insurance coverage on such expenses in Sweden (8).

A research conducted in Seoul on dentists' knowledge regarding TMD showed good understanding of psychophysiological and psychiatric disorders in the etiology of TMD by practicing dentists but considerable discrepancies between them and TMD experts on the pathophysiology of TMD including diagnosis and treatment of chronic conditions (9). In fact, the findings in treatment and diagnosis domains were almost the same as the current study.

By considering the high prevalence of TMD among the population and with regard to the complexity of the issue and concerning probable rapid-growing knowledge about TMD during the days allotted to complete the questionnaire that could lay the results open to interpretation, it may be concluded that the presumed ability of the majority of dentists especially general dental practitioners is not high enough to present correct and effective treatment of TMD. According to the results of this study we highly suggest that the curricula be strengthened and a unique Golden Standard questionnaire be prepared for such studies.

Conclusion

The results of this study indicated an acceptable knowledge of participants regarding TMD that seems not to be sufficient to diagnose and treat patients efficiently.

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Table 1. Distribution of correct answers.

Item	Experts response	General practitioners response
How is maximum jaw opening measured and where is normal range of mouth opening located?	75%	66.6%
How is "restricted mouth opening" defined?	87.5%	80.5%
Which etiologic factors may be associated with the onset of temporomandibular disorder (TMD)?	100%	97.2%
Which type of premature contacts is the worst?	87.5%	50%
Where the fingers should be placed on the face to examine the temporomandibular joint (TMJ)?	100%	91.6%
Which muscle does not participate in elevating the mandible?	75%	47.2%
Which muscle retrudes the mandible upon contraction?	25%	25%
Condyle is normally positioned inof the disk.	100%	50%
Item	Experts response	General practitioners response
Primary screening technique for TMD is:	75%	63.8%
Clicking sound will not be heard in:	62.5%	50%
What is your diagnosis for a patient with deviation of right TMJ without pain or tenderness?	62.5%	47.2%
What maneuver you will use to treat a recent subluxated mandible?	100%	97.2%
What is the treatment of choice: "patients complaining of clicking sounds only"?	75%	58.3%
Which of the following is a form of supportive therapy?	25%	25%
Which medication may be used in TMD remedies?	100%	75%
In which situation of disc dislocation without reduction surgical options can be applied?	75%	58.3%
If the right medial pterygoid muscle is spasmodic:	37.5%	38.8%
What is the treatment of choice: "patient with recent masticatory muscle spasm"?	37.5%	36.11%
What is the best treatment for a patient with clicking sound and the pain that worsen at waking up?	100%	88.8%
What is the first treatment for a patient with anterior disc dislocation without reduction?	87.5%	66.6%

Table 2. P values of the factors that probably influence the knowledge of participants.

Factors	Gender	Age	Experience	Being a Specialist	University of Study
Diagnosis	(p=0.459)	(p=0.510)	(p=0.488)	(p=0.001)	(p=0.205)
Treatment	(p=0.498)	(p=0.214)	(p=0.277)	(p=0.039)	(p=0.404)
Total knowledge	(p=0.891)	(p=0.267)	(p=0.287)	(p=0.000)	(p=0.795)

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