

Evaluation of Knowledge of the Symptoms, Diagnosis, and Treatment of Temporomandibular Disorders among Dental Students and Dentists in Iraq

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Abstract

Back ground and aim: - Temporomandibular joint (TMJ) disorder refers to a cluster of conditions characterized by pain and tenderness in the TMJ or its surrounding tissues, functional limitations of the mandible, or clicking in the TMJ during motion. This study aimed to determine the knowledge of (general dentists , dental specialists and dental students) on temporomandibular disorders (TMD) in Iraq.

Materials and Methods: A cross-sectional study was conducted using a web-based questionnaire distributed to dental students and dentists in Iraq. The questionnaire consisted of multiple-choice questions assessing knowledge of TMD etiology, anatomy, signs and symptoms, diagnosis, and management. Knowledge scores were calculated based on the number of correct responses and analyzed using SPSS version 28.

Results: A total of 730 participants were included in the study. The mean age was 29.0 ± 7.8 years, and the mean knowledge score was 93.5 ± 10.7 out of 100. Knowledge scores showed statistically significant associations with age, sex, years of experience, and type of work. Participants with higher academic qualifications demonstrated higher knowledge scores than dental students.

Conclusion: -The participants demonstrated a generally high level of knowledge regarding TMDs, particularly in relation to their diagnosis and treatment. However, significant differences in knowledge were observed according to selected demographic and professional characteristics. Further educational and continuing professional development programs may help strengthen knowledge and clinical management of TMDs among dental professionals and students in Iraq.

Keywords: temporomandibular disorders; Dentists; knowledge; Dental students.

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I. Introduction

Temporomandibular joint (TMJ) is a synovial joint and in the body it is one of the most complicated joints; tmj is used for chewing, speaking, yawning, by the movements achievable at this complex:- depression; elevation; lateral deviation; retraction; protrusion and different combinations of these movements (1). TMD refer to a multiple conditions remarkable by pain and tenderness in the area of TMJ in addition there could be a limitations in mandible movement or clicking in the TMJ(2).even though TMD could define as pain and dysfunction in the orofacial area; headaches; fibromyalgia; irritable bowel syndrome; tinnitus; chronic fatigue syndrome; depression and sleep disturbances are common painful and non-painful comorbidities of common painful TMD (3).Among persons have TMD; clinical pathways that assist early diagnosis and management are expected to enhance prognosis, life quality and decrease health-care costs for TMD patients(4).

Goals for treatment of TMDs can be isolated into levels, both of which are equally important. The first level consist of:- pain control , enhance movement of mandibular; and rehabilitate function as near to normal as possible .The second level consist of:- brunt to the patient by the pain; technique to improve general functioning; and method for prevention of relapse. Patient specific factors along with available health care expertise determine the relative importance and timing of performing each level (5).

The aim of this study was to inspect the degree of knowledge, attitudes and practice of students in dental college and post graduated dentists concerning TMD in Iraq.

Null Hypothesis (H_0) postulated that There is no statistically significant association between the participants' knowledge of temporomandibular disorders (TMDs) and their demographic and professional characteristics, including age, sex, academic qualification, years of professional experience, and type of work

II. Materials and Methods

In this cross-sectional study; dentists and dental students, general dentists and dental specialists in Iraq. received a web-based questionnaire by Social media. The purposes of the questionnaire and the anonymous nature of response were informed to the participants.

The questionnaire consisted of two sections. The first section contained the demographic questions, including age, gender, Qualification, Specialty, number of years of practice, and type of work were asked to the participants. The second section consisted 20 questions with multiple-choice adapted from the Okeson reference textbook dealing with etiology, anatomy, signs and symptoms, diagnosis, and management of temporomandibular disorder(TMDs) (6).

Number 1 marks was graded for each item with correct answer, and zero for each item with incorrect answer. The total knowledge score was calculated by summing the scores obtained for all 20 questions and converting the result to a percentage score out of 100.

For the assessment of knowledge level, scores were categorized as follows: fair knowledge (0–69%) and good knowledge (70–100%).

The extracted data was analyzed by the use of IBM SPSS Statistics version 28. Descriptive statistics were used to summarize the demographic and professional characteristics of the participants and their knowledge scores. The Pearson correlation coefficient was used to assess the association between knowledge scores and quantitative variables, such as age and years of professional experience. Appropriate statistical tests were used to examine associations between knowledge level and categorical variables, including sex, academic qualification, and type of work. A p -value < 0.05 was considered statistically significant.

III. Results

A total of 730 participants were included, with a mean age of 29.0 ± 7.8 years and a mean TMD knowledge score of 93.5 ± 10.7 out of 100. Females comprised 558 (76.4%) participants and males 172 (23.6%). Dental students represented 326 (44.7%), bachelor's degree holders 214 (29.3%), and higher-degree participants 190 (26.0%). Regarding experience, 417 (57.1%) had less than 5 years and 313 (42.9%) had more than 5 years. Most participants worked in private practice or dental colleges (477, 65.3%), while 253 (34.7%) worked in governmental or combined settings (Table 1).

Table 1: essential characteristics of study in dependent variables			
		N	%
Gender	Male	172	23.6%
	Female	558	76.4%
Specialities	Dental student	326	44.7%
	Bachelor's	214	29.3%
	High Degree	190	26.0%
Years of experience	less than 5 years	417	57.1%
	More than 5 years	313	42.9%
Type of work	private or in collage of dentistry	477	65.3%
	Governmental or Private and gove	253	34.7%

the majority of participants demonstrated a good level of knowledge regarding TMDs. Among dental students, 302 (92.6%) demonstrated good knowledge, while 24 (7.4%) demonstrated fair knowledge. Among participants with a bachelor's degree, 210 (98.1%) demonstrated good knowledge and 4 (1.9%) demonstrated fair knowledge. Among participants with higher academic degrees, 188 (98.9%) demonstrated good knowledge and 2 (1.1%) demonstrated fair knowledge. A statistically significant association was observed between academic status and knowledge level ($p = 0.001$).

According to the years of experience the knowledge level Among participants with less than 5 years of experience, 389 (93.3%) demonstrated good knowledge and 28 (6.7%) demonstrated fair knowledge. Among those with more than 5 years of experience, 311 (99.4%) demonstrated good knowledge and 2 (0.6%) demonstrated fair knowledge. A statistically significant association was observed between years of professional experience and knowledge level ($p = 0.001$).

According to the type of work the knowledge level Among participants working in private practice or dental colleges, 451 (94.5%) demonstrated good knowledge and 26 (5.5%) demonstrated fair knowledge. Among those working in governmental or combined governmental and private settings, 249 (98.4%) demonstrated good

knowledge and 4 (1.6%) demonstrated fair knowledge. A statistically significant association was observed between type of work and knowledge level ($p = 0.012$).

Table 2: Knowledge level according to specialty, Years of experience, Type of work

		knowledge level				
		Good		fair		
		Count	Row N %	Count	Row N %	
Specialties	Dental student	302	92.6%	24	7.4%	0.001
	Bachelor's	210	98.1%	4	1.9%	
	High Degree	188	98.9%	2	1.1%	
Years of experience	less than 5 years	389	93.3%	28	6.7%	0.001
	More than 5 years	311	99.4%	2	0.6%	
Type of work	private or in collage of dentistry	451	94.5%	26	5.5%	0.012
	Governmental or Private and gove	249	98.4%	4	1.6%	

Correlation between age and knowledge score = 0.154 p value=0.001 (fig 1)

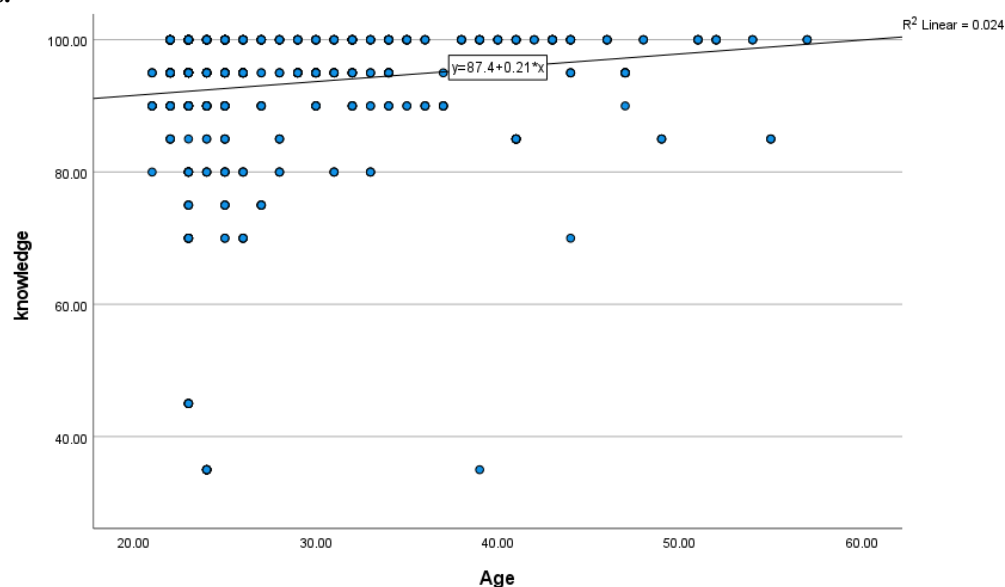
Out of 100 achievable marks; dentists with higher degrees achieved the highest correct response rates, while bachelor's holders had the second best response, and dental students participating in this questionnaire provided the lowest correct response rate.

- * 302 dental students participated in the questionnaire
- * 210 Bachelor's participated in the questionnaire
- * 188 high degree participated in the questionnaire

279 Good – 23 Fair
204 Good – 6 Fair
186 Good – 2 Fair



This indicates that the difference in age and experience has an effect on the rate of knowledge of TMJ disorders.



(Fig3)

Relation between age and knowledge

IV. Discussion

TMD is highly prevalent and is considered the second most common cause of orofacial pain. The vast majority of patients with TMD initially refer to dentists. Therefore, to correctly diagnose and effectively treat TMD, dentists should have comprehensive knowledge of the disease.

According to the findings of our study, 76% of participants had acceptable knowledge of TMD, 14% demonstrated good knowledge, and 10% had insufficient knowledge. Although dentists with higher academic degrees (26%) showed better knowledge and dental students (44.7%) achieved lower scores, no significant difference in TMD knowledge was observed according to specialty ($p = 0.154$).

The questionnaire allowed participants to select more than one specialization, which may have influenced the results. Since it is important to identify which professionals need to improve their knowledge of

TMD, future studies should allow participants to select only their primary or most practiced specialization. Conservative dentistry is a common discipline in daily practice and may have been selected by specialists from other fields.

In our study, TMD knowledge increased with increasing age and years of professional practice. Female dentists (67.8%) showed better knowledge than male dentists (32.2%).

Several studies have assessed dentists' knowledge of TMD in different countries. In 2010, Baharvand et al. assessed the knowledge of general dental practitioners and specialists regarding TMD in Tehran, Iran. Their findings showed low knowledge in 3% of participants, relatively low knowledge in 72%, and fair knowledge in 25%. It is worth noting that scores between 56% and 77% were considered relatively low in the Iranian study, whereas the present study considered scores between 50% and 80% as acceptable. (7)

A study conducted in Seoul also assessed dentists' knowledge of TMD. The results showed good awareness of psychiatric and psychophysiological disorders associated with TMD etiology. However, considerable differences were found between participants and TMD experts regarding knowledge of TMD pathophysiology, particularly in the diagnosis and management of chronic conditions (8). Overall, these findings were consistent with those of our study regarding diagnosis and treatment choices.

In 2015, Candirli et al. assessed dentists' knowledge of TMD and treatment approaches using occlusal splints in Turkey. Among 370 practitioners, knowledge was generally insufficient and decreased with increasing years of professional practice. In contrast, our study showed that older dentists had better knowledge, with TMD knowledge increasing with age and years of professional practice (9).

The decline in theoretical knowledge reported among clinicians after graduation highlights the importance of regular professional education. Periodic updates can help dentists retain fundamental knowledge acquired during their academic studies and learn new approaches in TMD management, ultimately contributing to better patient care.

V. Conclusions

Based on the results of the current study, most of the participants had adequate knowledge regarding TMD. It appears that the high level of knowledge of the respondents is relatively good for diagnosing and treating patients in the country

Conflict of Interest We declare that we have no conflicts of interest.

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