ECRONICON OPEN ACCESS

EC DENTAL SCIENCE
Research Article

# Symptoms of Temporomandibular Disorders among Dental College Students in Baghdad

**Emad Hammody Abdulla*, Mena Faiz, Ali Adnan and Zainab Dhiaa**

*College of Dentistry, Ibn Sina University of Medical and Pharmaceutical Sciences, Baghdad, Iraq*

***Corresponding Author:** Emad Hammody Abdulla, Assistant Professor, College of Dentistry, Ibn Sina University of Medical and Pharmaceutical Sciences, Baghdad, Iraq.

**Received:** September 11, 2021; **Published:** September 25, 2021

## Abstract

**Introduction:** The temporomandibular Joints (TMJs) are two joints connecting jawbone to the skull. conditions affecting the TMJ, muscles of mastication and/or associated structures are named the Temporomandibular disorders (TMDs). TMDs have a collecting variety of clinical signs and symptoms related to the TMJ and/or the associated structures.

**Aim of this Study:** The aim of the study was to examine the symptoms of Temporomandibular disorders in Iraqi dental colleges students.

**Materials and Methods:** Study include hundred dental students from Colleges in Baghdad capital of Iraq. There percentages were as a 28% males and 72% females, their age ranged from 18 to 25 years.

Results: In the study 81% were free of limitation in mouth opening, About 6% of the population had limitation in mouth opening, while 13% sometime suffering from this problem. 82students (82%) had T.M. joint locking, 10% feel sometime and 8% had T.M joint locking. It is clear that the percentage of students suffering from previous two problems was significantly lower than the percentage of student free from these problems. About 5.1% had muscular pain during chewing, 74.7% free of pain and 20.2% feel sometimes. 26.3% of students had frequent headache, neck pain and toothaches while 46.5% free of pain. 7% suffer from pain around ears, cheek and temple.26% noticed T.M.J. clicking while chewing or opening the mouth and 25% feeling sometimes. 11% had arthralgia in other joints of body while 78% free of arthralgia. About 12% of students their jaws get stiff, tights or tired regularly. 5.1% of sample suffered from recent trauma to their head, neck and jaws. 16% felt recent changes in their bite under want orthodontic treatment. 31% considered their self as nervous and 50% had stress. 32% had experience of pain during eruption of wisdom tooth while 49% did not have this experience. the study revealed that only 5.1% received treatment for unexplained pain and jaw joint problems. The results also showed that the 46.9% had some habit such as nail biting, clenching of teeth, chewing gum of them had some kind of TMJ problem.

**Conclusion:** The symptoms and severity of TMJ could be identified by a simplified questionnaire.

***Keywords:*** *Temporomandibular Joints (TMJs); Temporomandibular Disorders (TMDs); Dental College Students*

## Introduction

The temporomandibular Joints (TMJs) are two joints connecting jawbone to the skull. TMJs are a bilateral synovial articulation between the temporal bone of the skull and the mandible. The TMJ is connected to the mandible, so the right and left joints must function together and dependent on each other [1].

The Temporomandibular disorders (TMDs) are a collection of conditions affecting the TMJs, muscles of mastication and/or associated structures [2]. TMDs a collecting term for a variety of clinical signs and symptoms confined to the TMJ and/or the related masticatory musculature, bone and facial structures. Symptoms and signs of TMDs include facial pain, headache, earache, and joint pain both on rest position and during jaw movement, and signs may include limited jaw movement, jaw deviations, joint noises, jaw locking, dislocation, traumatic occlusion and wear of dentition due to anxiety, stress and Para functional habits (clenching and bruxism) [3,4].

The TMDs symptoms are often associated with jaw movement (e.g. opening and closing the mouth, chewing) and pain in the preauricular, masseter, or temple region. Another cause of orofacial pain should be suspected if pain is not affected by jaw movement. An accidental sounds of the jaw (e.g. clicking, popping, grating, crepitus) occur with TMDs, but may occur in about up to 50% of asymptomatic patients [5].

Arthritis are a group of degenerative/inflammatory joint disorders affect the TMJ, the Internal derangement of the joint involves a displaced disc, dislocated jaw, or injured condyle [6]. There are 1- Genetic, hormonal, and anatomical, factors which appear to predispose to TMDs.2- Trauma, occlusal changes and parafunction, factors which may precipitate it. 3- Stress and parafunction, factors which may prolong it [7].

Research into the causes of TMDs, namely a psychosocial theory and a theory of occlusal disharmony [8]. The diagnosis of TMDs is based on history and physical examination.

A large retrospective study (n = 4,528) done by an examiner for more than 25 years found that the signs and symptoms patient present with were facial pain (96%), ear discomfort (82%), headache (79%), and jaw discomfort or dysfunction (75%) [9]. The diagnosis may be supported by Physical examination of TMD may include abnormal mandibular movement, tenderness of masticatory muscles, decreased range of motion, signs of bruxism, neck or shoulder muscle tenderness and pain with dynamic loading. Clinicians need to assess for malocclusion, acquired edentulism, restorative occlusal rehabilitation and hemifacial asymmetries [10]. A clicking, crepitus, and locking of the TMJ may accompany joint dysfunction [11]. Tenderness to palpation of TMJ is suggestive of intra-articular derangement. Masseter, Temporalis and surrounding neck muscles tenderness, may distinguish myalgia, myofascial trigger points, or referred pain syndrome.

The mandible Deviation toward the affected side during mouth opening may be pointed to anterior articular disk displacement [12]. Prevalence of TMDs in general population is high [13], range between 40% to 60% [14].

## Aim of the Study

Our study aimed to find the temporomandibular symptoms percentages in Iraqi dental students and to initiate a statistical information to be compared with other studies.

## Materials and Methods

The sample consisted of hundred dental students from Dental Colleges in Baghdad capital of Iraq. There were 28% males and 72% females as a percentage, their age ranged from 18 to 25 years (Figure 1). The sample comprised; 1 (1.0%) first year students second year students; 17 (17%) third year 2 (2%) students; 40 (40%) fourth year students; and 40 (40%) Of the 100 students, 70(70%) were studying in University of Ibn fifth year students (Figure 2). Sina,10(10%) in Baghdad University,9(9%) in Al-Rasheed University College,6 (6%) in Usool aldiyn University College,3(3%) in Mustansiriya University,1 (1%) IN Al Farahidi University College,1 (1%) in Isra University College (Figure 3). This research was carried out in 12/12 / 2020- 20/6 /2021 at IBN SINA University for Medical and Pharmaceutical Sciences in Baghdad. A case sheet designed especially for this study questionnaire was make up and distributed randomly to students belonging to Dentistry College, questionnaire case sheet proposed by Fonseca and the researchers modified them [15]. The students chosen

with no history of systemic, neurological disorders or musculoskeletal. Each student was given a study. The questionnaire contained 17 questions related to the signs and symptoms of TMDs. The questionnaire contained the following items regarding the different symptoms of TMDs, and other possible risk factors:

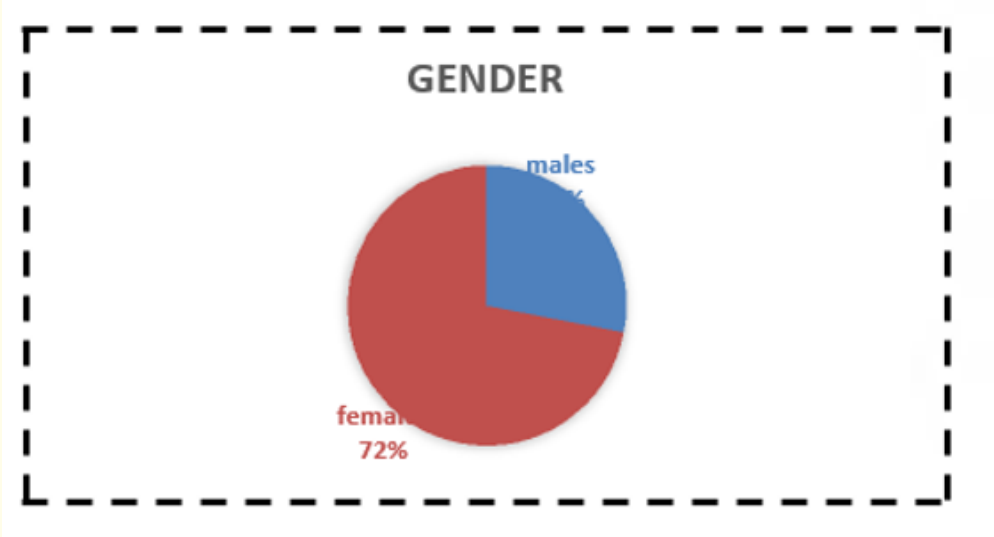


***Figure 1***

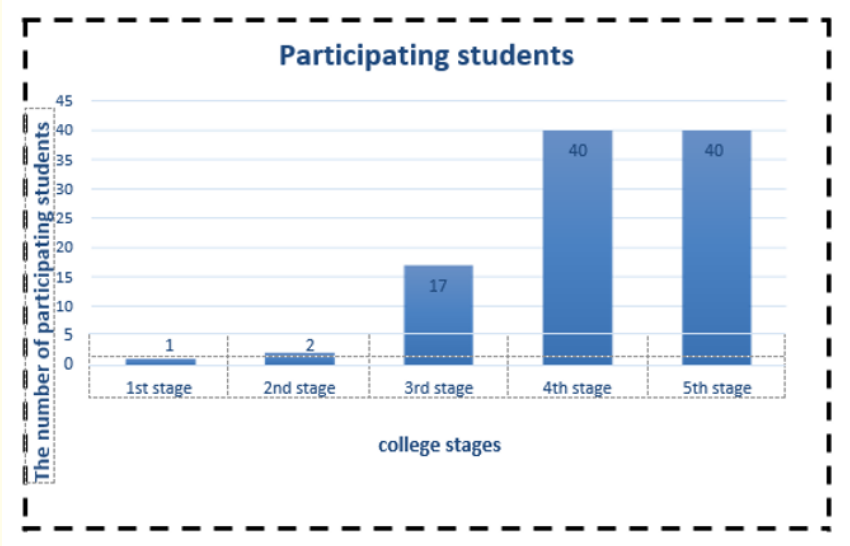


***Figure 2***

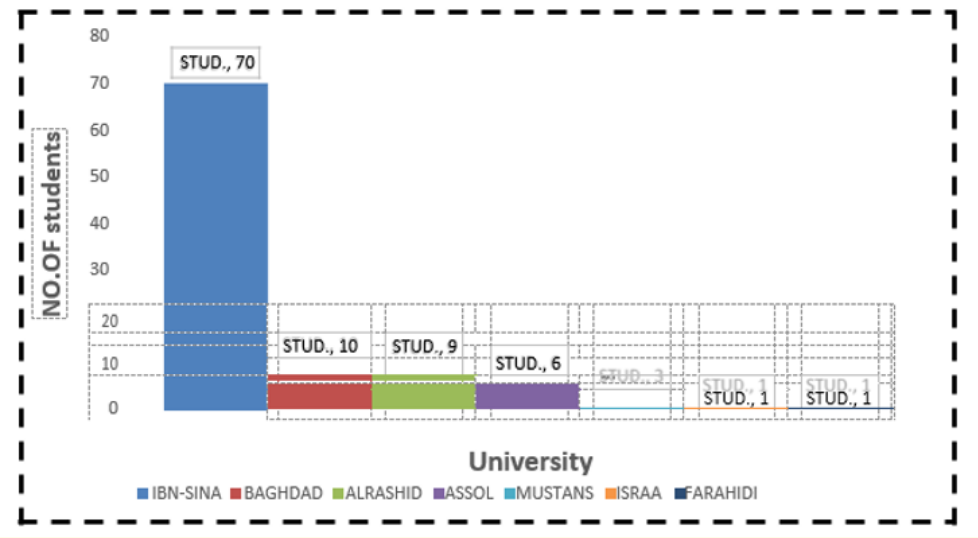


***Figure 3***

1. Do you have any limitation in mouth opening?
2. Have you ever had T.M. joint locking?
3. Do you have followings habits. (a- nail biting. b-clenching of teeth. c-grinding of teeth. d-biting on objects. e-chewing gums.).
4. Do for you hard to move your mandible side to side
5. Do you feel muscular pain while chewing?
6. Do you get frequent headache, neck pain or toothaches?
7. Do you have pain in or around your ears, check or temple?
8. Have your noticed any T.M.J clicking while chewing or opening your mouth
9. Do you hear joint sounds?
10. Do you have arthralgia in your joints in other part of the body?
11. Do your jaws get stiff, tights or tired regularly?
12. Have you suffered recent trauma to your head, neck and jaws?
13. Have you felt any recent changes in your bite or under want any orthodontics treatment?
14. Have you had any recent treatment for unexplained pain or jaw joint problem?

15. Do you consider yourself as a nervous person?

16. Did your experience any pain during eruption of wisdom tooth?

17. Do you have stress, or feel that you under stressful conditions?

## Results

The study revealed that, of hundred students, 9 (9%) were without any symptoms of TMDs. About (91) 91% of the population had some kind of TMD problem, in our study that, of 100 students, 81% were free of limitation in mouth opening, about 6% of the population had limitation in mouth opening, while 13% sometime suffering from this T.M. joint locking, 10% feel sometime and 8% had T.M problem. 82 students (82%) had it is clear that the percentage of students suffering from previous two. Joint locking significantly lower than the percentage of student free from these problems was about 5.1% had muscular pain during chewing, 74.7% free of pain and 20.2%. Problems feel sometimes 26.3% of students had frequent headache, neck pain and toothaches while 46.5% free of pain. 7% suffer from pain around ears, cheek and temple. 26% noticed T.M.J. clicking while chewing or opening the mouth and 25% feeling sometimes. 11% had arthralgia in other joints of body while 78% free of arthralgia. About 12% of students their jaws get stiff, tights or tired regularly. 5.1% of sample suffered from recent trauma to their head, neck and jaws. 16% felt recent changes in their bite under want orthodontic treatment. 31% considered their self as nervous and 50% had stress. 32% had experience of pain during eruption of wisdom tooth while 49% did not have this experience. The study revealed that only 5.1% received treatment for unexplained pain and jaw joint problems.

The results also showed that the 46.9% had some habit such as nail biting, clenching of teeth, chewing gum (high prevalence 26.5% of 100 students), grinding of teeth and etc. while 53.1% were free from these habits (Figure 4a) and (Figure 4b). Table 1 shows factors associated with distribution of the TMDs symptoms in the sample.

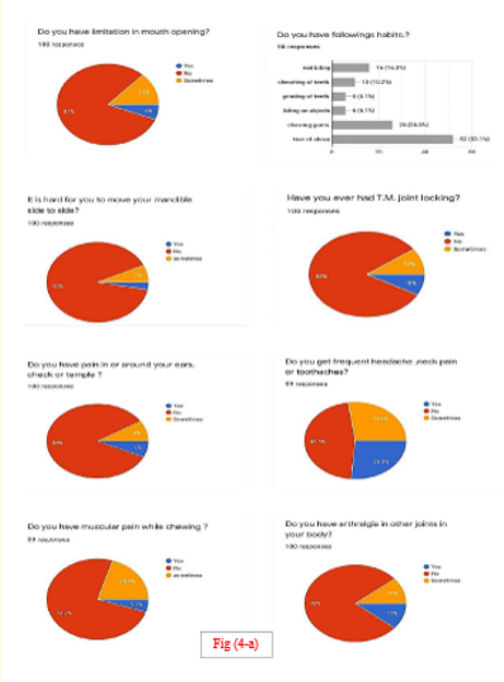

Fig (4-a)

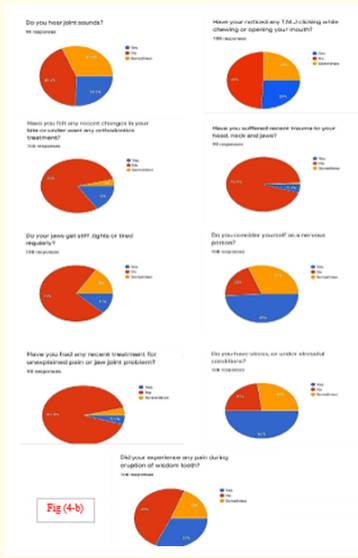


***Figure 4***

| Answers questions | Yes (%) | No (%) | Sometimes (%) |
|---|---|---|---|
| 1-Do you have limitation in mouth opening? | 6 | 81 | 13 |
| 2-Have you ever had T.M. joint locking? | 8 | 82 | 10 |
| 3-Do you have followings habits<br>a-Nail biting.<br>b-Clenching of teeth.<br>c-Grinding of teeth.<br>d-Biting on objects.<br>e-Chewing gums. | 64 | 36 | - |
| 4- It is hard for you to move your mandible side to side? | 3 | 90 | 7 |
| 5-Do you have muscular pain while chewing? | 5.1 | 74.7 | 20.2 |
| 6-Do you get frequent headache, neck pain or toothaches? | 26.3 | 46.5 | 27.3 |
| 7-Do you have pain in or around your ears, check or temple? | 7 | 84 | 9 |
| 8-Have your noticed any T.M.J clicking while chewing or opening your mouth? | 26 | 49 | 25 |
| 9-Do you hear joint sounds? | 25.3 | 43.4 | 31.3 |
| 10-Do you have arthralgia in other joints in your body? | 11 | 78 | 11 |
| 11-Do your jaws get stiff, tights or tired regularly? | 12 | 72 | 16 |
| 12- Have you suffered recent trauma to your head, neck and jaws? | 5.1 | 93.9 | 1 |
| 13- Have you felt any recent changes in your bite or under want any orthodontics treatment? | 16 | 80 | 4 |
| 14-Have you had any recent treatment for unexplained pain or jaw joint problem? | 5.1 | 90.8 | 4.1 |
| 15-Do you consider yourself as a nervous person? | 49 | 20 | 31 |
| 16-Did your experience any pain during eruption of wisdom tooth? | 32 | 49 | 19 |
| 17-Do you have stress, or under stressful condition? | 50 | 23 | 27 |

***Table 1:*** *Show distribution of the factors associated with TMD symptoms in the sample. Yes (green), No (red), Sometimes (yellow).*

## Discussion

In the Asian population, a prevalence about 43% Taiwanese university students had symptoms of TMDs [16]. Higher prevalence of TMDs has reported among university students in Riyadh, Saudi Arabia (46.8%) [17]. Prevalence of TMDs was higher (94.7%) in a study in north Saudi university students [18]. A low rate of TMDs (25.4%) was estimated in Arab students at Gulf Medical University Ajman, UAE [19]. The prevalence of TMDs in Indian students was (45.16%) [20]. Prevalence of TMDs be higher among the university students in Brazil (57.7%) [21]. Others studies mentioned the prevalence of TMDs in various communities including: Southern Portugal (25.2%) [22], Syrian (28%) [23]. A higher prevalence rate of TMDs has been reported from university Students in Sudan and Jordan (77.8% and 68.6% respectively) [24,25]. While the prevalence of TMDs among Yemeni dental students was (41.07%) [26]. In TMDs patients a high incidence of exposure to stressful life events, elevated levels of anxiety and stress related symptoms have been reported by Pesqueira., *et al* [27]. In our study 9 (9%) were without TMDs, about (91) 91% of the population had some kind of TMD problem, in our study 81% were free of limitation in mouth opening, about 6% of the population had limitation in mouth opening, while 13% sometime suffering from this problem. 82 students (82%) had T.M. joint locking, 10% feel sometime and 8% had T.M joint locking. It is clear that the percentage of students suffering from previous two problems was significantly lower than the percentage of student free from these problems. About 5.1% had muscular pain during chewing, 74.7% free of pain and 20.2% feel sometimes. 26.3% of students had frequent headache, neck pain and toothaches while 46.5% free of pain. 7% suffer from pain around ears, cheek and temple. 26% noticed T.M.J. clicking while chewing or opening the mouth and 25% feeling sometimes. 11% had arthralgia in other joints of body while 78% free of arthralgia. About 12% of students their jaws get stiff, tights or tired regularly. 5.1% of sample suffered from recent trauma to their head, neck and jaws. 16% felt recent changes in their bite under want orthodontic treatment. 31% considered their self as nervous and 50% had stress. 32% had experience of pain during eruption of wisdom tooth while 49% did not have this experience. the study revealed that only 5.1% received treatment for unexplained pain and jaw joint problems. The results also showed that the 46.9% had some habit such as nail biting, clenching of teeth, chewing gum (high prevalence 26.5% of 100 students), grinding of teeth and etc. (See figure 4a and 4b), while 53.1% were free from these habits. Table 1 shows factors associated with distribution of the TMDs symptoms in the sample. 49% of the students consider themselves as nervous persons, while 50% of them under stressful condition or they already have stress. More of the half of the students have different habits which may play role on the TMJDs about 64%. our study presented that TMDs were more related to stress experienced by the individual. Stress or anxiety is difficult to be measure as a variable. To find the prevalence of stress among TMDs patients, there is a need for long term studies in the population (Figure 4).

## Conclusion

Our study shows that a simplified questionnaire allows identifying a TMD patient and, classifies them according to disorder severity. In a relatively short period and at low cost Public health and screening services should adopt the questionnaire, as it can be obtained information for wide population coverage. Proper, early diagnosis could manage orofacial pain in a large group of people. Stress or anxiety is difficult to be measures long term studies is a need for this problems in population to find prevalence of stress among TMDs patients.

## Bibliography

1. Illustrated Anatomy of the Head and Neck, Margaret Fehrenbach and Susan Herring, Elsevier (2012): 118.

2. Al-Ani MZ., *et al*. "Stabilisation splint therapy for temporomandibular pain dysfunction syndrome" (2004).

3. Sakrania H., *et al*. "Prevalence of signs and symptoms of temporomandibular disorders in different malocclusion groups". *POJ* 7 (2015): 2-7.

4. Milanez Oliveira FB and Rocha Paula AB. "Association between Temporomandibular Dysfunction and Depression in People Living with HIV/ AIDS". *International Archives of Medicine* 9 (2016): 393.

5. Scrivani SJ., *et al*. "Temporomandibular disorders". *The New England Journal of Medicine* 359.25 (2008): 2693-2705.

6. Ahmed and Abuaffan. "Prevalence of Temporomandibular Joint Disorders among Sudanese University Students Oral Hyg Health 4 (2016): 2.

7. Wassell R., *et al*. "Applied occlusion". London: Quintessence (2008): 73-84.

8. Greenberg MS and Glick M. "Burket's oral medicine diagnosis and treatment )10th edition). Hamilton, Ont: BC Decker (2003).

9. Cooper BC and Kleinberg I. "Examination of a large patient population for the presence of symptoms and signs of temporomandibular disorders". *Cranio* 25 (2007): 114-126.

10. Scrivani SJ and Metha NR. "Temporomandibular disorders in adults (2011).

11. Okeson JP and De Leeuw R. "Differential diagnosis of temporomandibular disorders and other orofacial pain disorders". *Dental Clinics of North America* 55.1 (2011): 105-120.

12. Emshoff R., *et al*. "Clinical versus magnetic resonance imaging findings with internal derangement of the temporomandibular joint: an evaluation of anterior disc displacement without reduction". *Journal of Oral and Maxillofacial Surgery* 60.1 (2002): 36-41.

13. Chuang SY. "Incidence of temporomandibular disorders (TMDs) in senior dental students in Taiwan". *Journal of Oral Rehabilitation* 29.12 (2002): 1206-1211.

14. Okeson JP. "Management of Temporomandibular Disorders".

15. Bevilaqua-Grossi D., *et al*. "Anamnestic index severity and signs and symptoms of TMD". *Cranio* 24 (2006): 112-118.

16. Lee JY., *et al*. "Evaluation of Korean teenagers with temporomandibular joint disorders". *Journal of the Korean Association of Oral and Maxillofacial Surgeons* 39 (2013): 231-237.

17. Habib SR., *et al*. "Prevalence and severity of temporomandibular disorders among university students in Riyadh". *Saudi Dental Journal* 27 (2014): 125-130.

18. Zwiri AM and Al-Omiri MK. "Prevalence of temporomandibular joint disorder among North Saudi University students". *Cranio* 34 (2016): 176-181.

19. Elyasi M., *et al*. "Prevalence of temporomandibular joint disorder among Gulf Medical University students". *Gulf Medical Journal* 5 (2016): S123-S130.

20. Majumder K., *et al*. "Prevalence and Sex Distribution of Temporomandibular Disorder and Their Association with Anxiety and Depression in Indian Medical University Students". *International Journal of Clinical Medicine* 6 (2015): 570-578.

21. Cabral RP., *et al*. "Temporomandibular Disorder in University Students of the Parque das Rosas Campus, Universidade Estácio de Sá That Practice Sports". *Health* 8 (2016): 18-23.

22. Minghelli B., *et al*. "Prevalence of Temporomandibular disorder in children and adolescents from public schools in Southern Portugal". *North American Journal of Medical Sciences* 6 (2014): 126-132.

23. Issa N., *et al*. "Prevalence of Symptoms of Temporomandibular Joint Disorder in Lattakia-Syria". 1 (2015): 23-28.

24. Ryalat S., *et al*. "Prevalence of Temporomandibular Joint Disorders among Students of the University of Jordan". *Journal of Clinical Medicine Research* 1 (2009): 158-164.

25. Ahmed LI and Abuaffan AH. "Prevalence of Temporomandibular Joint Disorders among Sudanese University Students". *Journal of Oral Hygiene and Health* 4 (2016): 200.

26. Al-sanabani JS., *et al*. "Prevalence of Temporomandibular Joint Disorders among Yemeni University students: A prospective, cross-sectional study". *International Journal of Oral and Craniofacial Science* 3.2 (2017): 052-059.

27. Pesqueira AA., *et al*. "Relationship between psychological factors and symptoms of TMD in university undergraduate students". *Acta odontológica Latinoamericana* 23 (2010): 182-187.

**Volume 20 Issue 10 October 2021**
**©All rights reserved by Emad Hammody Abdulla., *et al*.**