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Original Research Article

Knowledge and Practice of TMJ Examination among the Undergraduate Dental Students of Riyadh Elm University

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Introduction: Stress and TMJ disorder has been linked to a great extent as well. This is strongly associated with bruxism, which affects the overall quality of TMJ health. Materials and methods: This study was conducted using closed-ended survey using Google forms and was sent to the students using their emails. A total of 500 students were aimed to take part in this study, with both males and females being involved. Results: A total of N=321 dental students responded to the online survey; out of which, n=208 (65%) were males and n=113 (35%) females. As far as the levels of dentistry were concerned, n=43 (13%) participants were from level 9, n=71 (22%) from level 10, n=57 (18%) from level 11 and n=152 (47%) from level 12 students. Conclusion: Overall knowledge and awareness of TMJ examination was found to be satisfactory.

Keywords: Knowledge, TMJ, Oral examination, Dental students.

INTRODUCTION

Temporomandibular joint (TMJ) is one of the essential components of the extra-oral examination of dental patients. It indicates any joint related problem, which may affect the usual oral functions of the patients. Several types of examinations and investigations have been reported, which may prove to be helpful in the diagnosis. Clinical examination is mandatory in patients suspected of having idiopathic arthritis (Muller et al, 2009). Furthermore, TMJ has been involved in rheumatoid arthritis as well. It has been proven that 30-40% of RA patients suffer from TMJ problems. This enhances the importance of TMJ examination even more (Bayar et al, 2016).

Moreover, stress and TMJ disorder has been linked to a great extent as well. This is strongly associated with bruxism, which affects the overall quality of TMJ health (Ohmi et al, 2016). Dental students have also been reported to have TMD, which is higher due to the stress-related habits acquired during their hectic schedule. This might encourage these students to improve their skills as far as routine TMJ examination for their patients is concerned (Bugaighis et al, 2017).

Theoretical, as well as clinical education related to TMJ plays a vital role in improving the knowledge and confidence of undergraduate dental students to perform TMJ examinations. A Swedish study demonstrated an increased amount of competency among students who recently received this education (Nordin, Dawson & Ekberg, 2016). Simmons (2016) stated that dentists are not trained enough in their dental schools to screen and diagnose temporomandibular disorders. He emphasized the importance of educating the students in the USA to be briefed more on this issue.

Few studies have been conducted in order to measure the knowledge of dental students regarding this topic. An investigation done in India determined to assess the relationship of dental curriculum exposure with the knowledge of TMJ examination and problems. It was revealed that the first year students lacked the knowledge as compared to senior dental students who exhibited better awareness (Choudhary et al, 2016). A similar study was conducted in Croatia to determine the knowledge of undergraduate students. The overall knowledge was found to be satisfactory; however, there is a need to educate the students to treat geriatric patients with TMJ disorders (Badel et al, 2017).

AIMS OF THE STUDY

- To assess the knowledge of undergraduate dental students regarding TMJ examination.
- To compare between male and female students.
- To compare among different levels of dental students.

METHODOLOGY

This study was conducted using closed-ended survey using Google forms and was sent to the students using their emails.

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A total of 500 students were aimed to take part in this study, with both males and females being involved.

The survey included questions related to different components of TMJ examination and their knowledge and practice among the participants. All clinical level students were included in this study.

Collected data was analyzed using Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics was done along with comparisons among the study sub-groups using Chi-square tests. The value of significance was kept under 0.05.

RESULTS

A total of N=321 dental students responded to the online survey; out of which, n=208 (65%) were males and n=113 (35%) females. As far as the levels of dentistry were concerned, n=43 (13%) participants were from level 9, n=71 (22%) from level 10, n=57 (18%) from level 11 and n=152 (47%) from level 12 students (Figure 1, 2).

Comparisons were made on the basis of gender and levels of dentistry, which revealed interesting results. No statistically significant differences between males and females were found when inquired about receiving training to examine TMJ through lectures (p-value: 0.687), training from clinics (p-value: 0.932), checking for TMJ clicking (p-value: 0.337), inquiring about pain in ears (p-value: 0.400), inquiring about pain on chewing (p-value: 0.392), inquiring about lockjaw (p-value: 0.997), injury to jaw (p-value: 0.708) and inquiring about arthritis (p-value: 0.864).

However, we found some statistically significant differences when students were asked whether they examine the patient for trismus (p-value: 0.041). In response, 59% females responded with 'sometimes', whereas 52% males 'never' examined the patient for Trismus. 87% male students reported that they needed more training on how to examine the TMJ as compared to females (75%), with the p-value being 0.044. When inquired about the importance of TMJ examination in any treatment, 94% females believed it was highly important, as compared to males (86%), with this comparison being significant (p-value: 0.030).

Similarly, we compared the findings on the basis of dentistry levels and found majority of the comparisons to be statistically insignificant. These results included students receiving training to examine TMJ through lectures (p-value: 0.190), examining patients' trismus (p-value: 0.549), clicking of TMJ (p-value: 0.996), pain in or around ears (p-value: 0.738), pain on chewing (p-value: 0.883), lockjaw (p-value: 0.932), injury to jaw (p-value: 0.382), arthritis (p-value: 0.990) and needing more training on how to examine TMJ (p-value: 0.236). 97% of level 10 students reported that they had received training to examine TMJ through clinics, whereas 99% of level 9 students believed that TMJ examination was a very important part of treatment. Both of these findings were statistically significant with p-values 0.048 and 0.049 respectively.

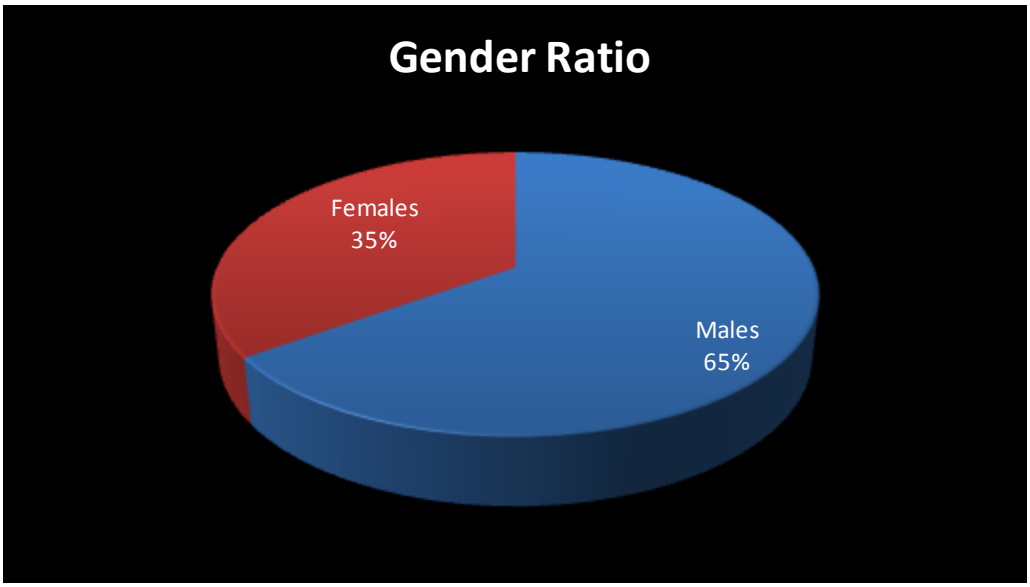

Figure 1: Gender ratio of the participants

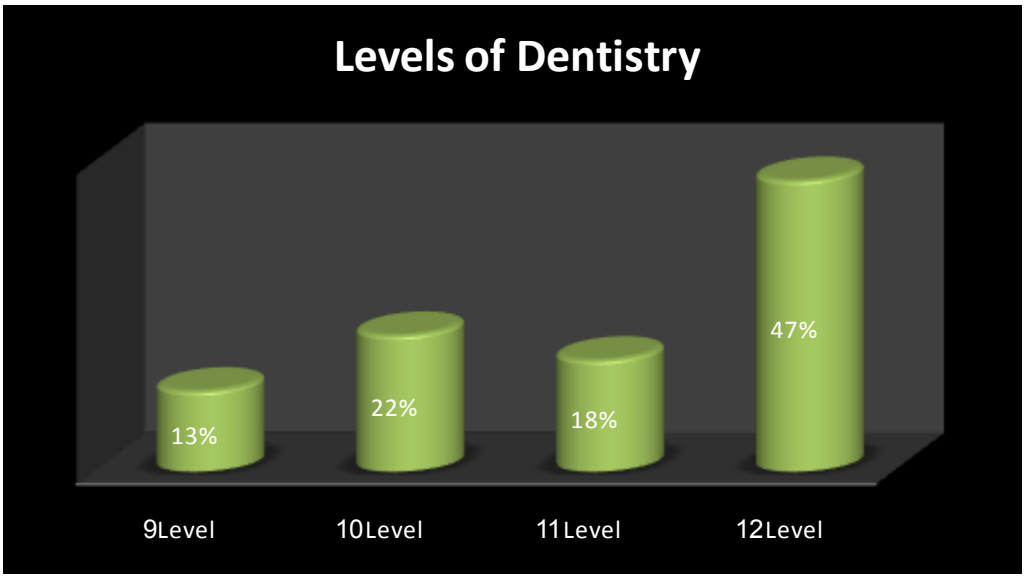

Figure 2: Students from various levels of dentistry with their frequencies

Table 1: Gender comparison of the survey questions related to TMJ examination

Item	Males	Females	P-value
Received training to examine TMJ through LECTURES?	Yes: 98% No: 2%	Yes: 97% No: 3%	0.687
Received training to examine TMJ through CLINICS?	Yes: 91% No: 9%	Yes: 90% No: 10%	0.932
Do you examine the patient for Trismus?	Always: 3% Sometimes: 45% Never: 52%	Always: 6% Sometimes: 59% Never: 35%	0.041
Do you examine the patient for sounds in TMJ?	Always: 9% Sometimes: 51% Never: 50%	Always: 6% Sometimes: 46% Never: 48%	0.337
Do you inquirepatient about any pain in or around the ears?	Always: 5% Sometimes: 53% Never: 42%	Always: 4% Sometimes: 61% Never: 35%	0.400
Do you inquire patients about pain on chewing?	Always: 7% Sometimes: 54% Never: 39%	Always: 8% Sometimes: 46% Never: 46%	0.392
Do you inquire the patients about lock jaw?	Always: 3% Sometimes: 38% Never: 59%	Always: 4% Sometimes: 38% Never: 58%	0.997
Do you inquire the patients about any injury to jaw?	Always: 3% Sometimes: 54% Never: 43%	Always: 4% Sometimes: 58% Never: 38%	0.708
Do you inquire the patients about arthritis?	Always: 5% Sometimes: 32% Never: 63%	Always: 4% Sometimes: 33% Never: 63%	0.864
Do you need more training on how to examine TMJ properly?	Yes: 87% May be:12% No: 1%	Yes: 75% May be:23% No: 2%	0.044
TMJ examination is very important part of treatment?	Yes: 86% May be:13% No: 1%	Yes: 94% May be:6% No: 0%	0.030

Table 2: Comparison of survey responses on the basis of dentistry levels

Item	Level 9	Level 10	Level 11	Level 12	P-value
Received training to examine TMJ through LECTURES?	Yes: 100% No: 9%	Yes: 98% No: 2%	Yes: 100% No: 0%	Yes: 96% No: 4%	0.190
Received training to examine TMJ through CLINICS?	Yes: 91% No: 9%	Yes: 97% No: 3%	Yes: 87% No: 13%	Yes: 78% No: 22%	0.048
Do you examine the patient for Trismus?	Always: 9% Sometimes: 49% Never: 51%	Always: 1% Sometimes: 48% Never: 51%	Always: 4% Sometimes: 46% Never: 50%	Always: 6% Sometimes: 47% Never: 47%	0.549
Do you examine the patient for sounds in TMJ?	Always: 5% Sometimes: 42% Never: 53%	Always: 4% Sometimes: 44% Never: 52%	Always: 4% Sometimes: 47% Never: 49%	Always: 4% Sometimes: 47% Never: 49%	0.996
Do you inquire patient about any pain in or around the ears?	Always: 2% Sometimes: 60% Never: 38%	Always: 4% Sometimes: 59% Never: 37%	Always: 5% Sometimes: 59% Never: 36%	Always: 4% Sometimes: 58% Never: 38%	0.738
Do you inquire patients about pain on chewing?	Always: 7% Sometimes: 47% Never: 46%	Always: 6% Sometimes: 59% Never: 35%	Always: 7% Sometimes: 53% Never: 40%	Always: 7% Sometimes: 50% Never: 43%	0.883
Do you inquire the patients about lock jaw?	Always: 2% Sometimes: 40% Never: 58%	Always: 3% Sometimes: 39% Never: 58%	Always: 2% Sometimes: 35% Never: 63%	Always: 5% Sometimes: 39% Never: 56%	0.932
Do you inquire the patients about any injury to jaw?	Always: 0% Sometimes: 56% Never: 44%	Always: 4% Sometimes: 65% Never: 31%	Always: 5% Sometimes: 47% Never: 48%	Always: 4% Sometimes: 54% Never: 42%	0.382
Do you inquire the patients about arthritis?	Always: 2% Sometimes: 31% Never: 67%	Always: 4% Sometimes: 32% Never: 64%	Always: 5% Sometimes: 30% Never: 65%	Always: 5% Sometimes: 34% Never: 61%	0.990
Do you need more training on how to examine TMJ properly?	Yes: 91% May be:9% No: 0%	Yes: 92% May be:6% No: 2%	Yes: 77% May be:21% No: 1%	Yes: 81% May be:18% No: 1%	0.236
TMJ examination is very important part of treatment?	Yes: 99% May be: 1% No: 0%	Yes: 96% May be:4% No: 0%	Yes: 77% May be:23% No: 0%	Yes: 86% May be: 12% No: 2%	0.049

DISCUSSION

Majority of the participants had similar attitudes towards the TMJ examination as the comparisons were found to be statistically insignificant. However, the overall impression of the findings suggested that the knowledge and attitude of female dental students were better than the male participants. As far as the levels of dentistry were concerned, the lower level of dental students revealed a better understanding of the TMJ examinations and its related knowledge.

Choudhary et al (2016) demonstrated in his findings that the knowledge and awareness of TMJ examination and related disorders improved as the dental students moved from lower levels of dentistry to higher levels. However, our results suggested that the lower levels of students exhibited better awareness of TMJ examination. Although the majority of the findings were not statistically significant, yet the overall readiness of lower level dental students was found to be higher as compared to senior dental students. This might be associated with knowledge and information received during lectures received by these lower level dental students, which can be noted from the high percentage of responses from the students in table 2.

A study conducted by Espinosa et al (2016) revealed an overall poor level of knowledge among the Mexican dental educators and students. The knowledge seems to be on the higher side as far as our findings were concerned. It was noted from the results that the students tend to have received knowledge regarding TMJ examination from their lectures more than the clinical training. It may be possible that the students focus on the treatment and earning points more than going through complete TMJ examination on every patient they treat. This issue can be resolved if the clinical instructors emphasize on the examination along with the treatment. This suggestion was supported by Alsafi et al (2015), when they investigated the competency of dental students regarding TMJ problems related knowledge and experience.

One of the limitations of this study was the uneven distribution of sample size especially when comparing the findings on the basis of dentistry levels. Almost half of the study participants belonged to level 12 of dentistry. On the other hand, remaining levels of the study only constituted merely half of the total sample size. We need to collect more data in order to generalize the results.

CONCLUSIONS

- Overall knowledge and awareness of TMJ examination was found to be satisfactory.
- Mainly this was because of female students, who showed better knowledge as compared to males.
- Intervention in clinical training may result in better knowledge among dental students as far as TMJ examination is concerned during their routine practice.
- No significant comparisons were found on the basis of various levels of dentistry.

CONFLICT OF INTEREST

There is no conflict of interest among the authors.

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