Turkish Journal of Health Science and Life

EVALUATION OF DENTAL ANXIETY LEVELS OF THE ORAL AND DENTAL HEALTH PROGRAM STUDENTS

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ARTICLE INFO

RESEARCH ARTICLE

Article history:
Received: 18 May 2023
Accepted: 16 August 2023
Available : 31 August 2023

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Turkish Journal of Health Science and Life
2023, Vol.6, No.2, 69-74
DOI: https://doi.org/10.56150/tjhsl.1297421

ABSTRACT

Objective: This study aimed to compare the dental anxiety levels of 1st and 2nd year oral and dental health program students.
Method: A total of 91 students, 47 1st year and 44 2nd year students, studying in the oral and dental health programs were included in our study. The modified dental anxiety scale (MDAS), which consists of five questions frequently preferred for assessing dental anxiety and questionnaires containing demographic information, were distributed to the participants. The participants with an MDAS score of 19 and/or above were considered to have a high level of dental anxiety. Statistical analysis of the data obtained was performed using Student's t-test and one-way analysis of variance.
Results: In all questions, the 1st year students had higher MDAS scores, and in the third and fourth questions, a significant difference was found between the groups in terms of scores ($p < 0.05$). The mean MDAS score obtained from the 1st year students (12.72 ± 4.72), was found to be significantly higher than the mean MDAS score obtained from the 2nd year students (10.29 ± 4.22) ($p < 0.05$).
Conclusion: As oral and dental health programs students' level of knowledge about dental treatments increases, their dental anxiety decreases. In line with these data, dental anxiety levels can be reduced by increasing the level of education and dental knowledge of individuals.

Keywords: dental anxiety, modified dental anxiety scale, oral and dental health program student

1. INTRODUCTION

Anxiety is defined as a disturbing emotional state in anticipation of a feared stimulus in the future, with or without an immediate physical threat (1). Dental anxiety is a major anxiety condition and complication that is common worldwide. Dental anxiety is a stress that occurs in response to dental treatment, where the triggering stimuli can vary from a specific cause to an uncertain cause, or it occurs in the absence of a specific cause (2). The patient's personal characteristics, traumatic dental experiences, sex, age, education level and social status, and dental experiences shared by others can affect the level of dental anxiety (3-7).

The treatment process and management of patients with dental anxiety are more difficult, and this is a significant source of stress for the dentist (8). In patients with dental anxiety, it is important for the dental team to manage the treatment process. Because canceling, avoiding, or postponing dental visits is a common observation among anxious and vulnerable individuals (1, 9-11). If dental anxiety is not controlled, patients avoid going to the dentist because of their fear, which leads to the problems to worsen, requiring more intensive and potentially traumatic treatment. This leads to increased dental anxiety in patients, leading them to avoid continued treatment (12). Although there are many technological advances in modern dentistry, dental anxiety related to dental treatment persists in society (13).

Dental assistants are in one-to-one communication with the patient and help the dentist in patient relationships and stress management. Therefore, measuring the personal dental fear levels of dental assistants is important in terms of the

attitude they will show toward a stressed patient. As students continue to study in the oral and dental health program, their level of dental anxiety may change. This study aimed to evaluate 1st and 2nd year students studying in the oral and dental health program. This study aimed to compare the dental anxiety levels of students individually and between each other using the modified dental anxiety scale (MDAS) (14).

2. MATERIALS AND METHODS

A total of 91 students studying in the 1st year (n: 47) and 2nd year (n: 44) Oral and Dental Health Program in Burdur Mehmet Akif Ersoy University were included in our study, which was initiated after getting approval from the Burdur Mehmet Akif Ersoy University Non-Interventional Clinical Research Ethics Committee (Decision Number: GO 2022/546). Ninety-one students were informed about the study and agreed to participate in the study, and then completed the questionnaire distributed after approving the voluntary consent form. The questionnaire included a descriptive information form and the MDAS (14-16) (Table 1), which is frequently used to measure dental anxiety.

MDAS (14-16) consists of a five-point scale, with an answer to each question ranging from "not anxious" to "extremely anxious" Therefore, the maximum score that can be obtained from each question is 5 and the minimum score is 1. The maximum score of the scale is 25, and the minimum score is 5. The score obtained from each question was summed, and the value obtained was recorded taking into account the year the student was in. The students with an MDAS value ≥19 were considered to have high dental anxiety (15).

Statistical analysis of the obtained data was performed using student's t-test and one-way analysis of variance (ANOVA) in the SPSS program (SPSS 20.0, Inc., Chicago, IL, USA). $P < 0.05$ was considered statistically significant. In descriptive statistics, number, mean, and percentage distributions were given.

Table 1. MDAS (Modified Dental Anxiety Scale)

Please indicate by inserting 'x' in the appropriate box
1) How would you feel if you were going to the dentist tomorrow?
a) I would think it would be a fun experience.
b) I would not care and worry about it.
c) I would feel very little restlessness.
d) I would be scared because I would think something unpleasant and painful would happen.
e) I would be very scared of what the dentist would do.
2) You are in the dentist's office and waiting for your turn. How would you feel?
a) I would feel comfortable.
b) I would feel a little restless.
c) I would feel tense.
d) I would feel anxious and distressed.
e) I would feel very scared; I would feel changes in my body such as sweating and nausea.
3) You are sitting in the dentist's chair and waiting for your doctor to prepare the rotating instruments for root canal treatment. How would you feel?
(Same options given for the answer to the second question)
4) You sit in the dentist's chair and waiting for the doctor to prepare his scraping tools to clean your tartar around your gums. How would you feel?
(Same options given for the answer to the second question)
5) How would you feel if your dentist gave you a local anesthetic on your gum above your upper back tooth?
(Same options given for the answer to the second question)

Table 2. Sociodemographic characteristics of the participants

		Class 1		**Class 2**	
Sociodemographic characteristics		n (%)	Mean (± SD)	n (%)	Mean (± SD)
Sex	Female Male	37 (78,7) 10 (21,2)		29 (65,9) 15 (34)	
Mean age			18,87±1,11		20,5±1,11

Table 3. Mean MDAS and MDAS scores of 19 and above (≥19)

	Class 1			**Class 2**	
	n (%)	Mean (± SD)	p value	n (%)	Mean (± SD)
MDAS ≥ 19	8 (17,02)		0,6	1 (2,27)	
MDAS Average		12,72±4,72	**0,011**		10,29±4,22

Table 4. Average MDAS scores of questions

	Class 1	**Class 2**	**p value**
Question 1	2,78±1,12	2,5±0,95	0,19
Question 2	2,10±1,08	1,81±0,97	0,18
Question 3	2,87±1,27	2,11±1,01	**0,002**
Question 4	2,25±1,09	1,68±0,85	**0,006**
Question 5	2,70±1,38	2,18±1,10	0,05

3. RESULTS AND DISCUSSION

3.1. Results

The sociodemographic characteristics of the participants are summarized in Table 2. While n = 37 (78.7 %) of 47 participants from class 1 were female, n = 10 (21.8%) were male, n = 29 (65.9 %) of 44 participants from class 2 were female and n = 15 (34 %) male. While the average age of the participants was 18.87 ± 1.11for the 1st year students, the average age of the 2nd year students was found to be 20.5 ± 1.11, being older.

MDAS ≥ 19 and mean MDAS score values of 1st and 2nd year students are given in Table 3. While the score of n = 8 (17.02) students in 1st class was MDAS ≥19, this value was found as n = 1 (2.27) in second class, but there was no significant difference between classes (p = 0.6; p > 0.05). While the MDAS average was 12.72 ± 4.72 for 1st year students, it was lower for 2nd year students and was 10.29 ± 4.22. There is a significant difference between the classes in terms of MDAS mean (p = 0.11; p < 0.05).

The average MDAS scores for each question of the 1st and 2nd year students who participated in the survey are given in Table 4. The highest level of anxiety was found in the thought of root canal treatment (2.87 ± 1.27) in the 1st year and in the idea of going to the dentist (2.5 ± 0.95) in the 2nd year. The MDAS scores of the first graders were higher in all questions. There was a significant difference between the classes in terms of scores in the third (p = 0.002; p < 0.05) and fourth (p = 0.006; p < 0.05) questions.

3.2 Discussion

Anxiety about dental treatments negatively affects oral and dental health and quality of life (17-20). To evaluate dental anxiety, the Corah's Dental Anxiety Scale (CDAS) and MDAS, the reliability and validity of which have been demonstrated by various studies in the Turkish population, are commonly used (15, 21, 22). CDAS was introduced by Corah in 1969 and consists of a total of four questions (23) and the sum of the numerical equivalents of the answers to the questions gives information about the person's level of dental anxiety. Although CDAS is easy to administer and has adequate assessment criteria, it excludes an assessment of local anesthetic injection. MDAS is a dental anxiety assessment scale consisting of five questions and five options for each question with a total score ranging from 5 to 25 with the addition of a question about the local anesthesia injection (14). The MDAS scale was used in this study because local anesthesia injection is thought to be an important criterion for assessing dental anxiety.

In a study by Humphris et al.(14) on 1392 patients, the reliability of the MDAS scale was shown. Humphris et al.(24) also reported in their study investigating the reliability and validity of MDAS that patients with a score of 19 and above had dental phobia. İlgüy et al.(15), in their study investigating the validity and reliability of MDAS in Turkish patients, reported that individuals with a score of 19 and higher had dental phobia and that the scale had appropriate sensitivity at this value.

Students who are in the 1st year of their education in the oral dental health program do not have any knowledge about dental practice except their traditional dental knowledge. Students who are in the 2nd year of the oral dental health program have a certain level of knowledge about the practice of dentistry through theoretical courses and internship practices. There are many studies in the literature showing the relationship between education level and dental anxiety (25-29). In this study, we evaluated whether the dental anxiety level of oral dental health program students, which is thought to have an important place in patient treatment, changes as they gain knowledge about dental practices.

Although there was no statistically significant difference between the groups in terms of dental phobia, there were eight students (17.02%) with dental phobia (MDAS score of 19 and above) in the 1st year of the oral dental health program, whereas there was only one student (2.27%) in the 2nd year with an MDAS score of 19 and above. When the groups were evaluated in terms of mean MDAS scores, the mean MDAS score of 1st year students was significantly higher than the mean MDAS score of the 2nd year students ($p < 0.05$). This could be attributed the increased knowledge of students in the 2nd year of dental treatments because of the education they received and the observations they made in the clinic.

Education level has an important role in dental anxiety. Many studies have shown an inverse correlation between education level and dental anxiety (25-27). Arslan et al. (30) investigated oral and dental health attitudes and behaviors and dental anxiety levels of 1st, 2nd, and 3rd year dentistry students and reported that dental anxiety levels decreased with advancing years. In their study investigating dental anxiety levels of dental students, Peretz and Mann (31) reported that dental anxiety levels of students decreased with advancing years. In line with these studies, in this study, in which the dental anxiety level of the first and last year students of the oral and dental health program were compared, it was found that in all questions, the MDAS score of 1st year students was found to be higher. In root canal treatment and scaling procedures, the MDAS score of 1st year students was significantly higher than the MDAS scores of 2nd year students. This shows that the level of dental anxiety decreases as knowledge about dental practices increases. However, there are also studies in the literature reporting that people with higher levels of education have more anxiety about dental treatments (28, 29). This tendency may be the result of the patient's awareness of the treatment methods because of their own research, and this can be overcome by the dentist informing the patient who does not have enough information about the treatment procedure.

A limitation of this study is that it was conducted in a small group of students. A total of 91 students, including 47 students in the 1st year of education and 44 students in the 2nd year of education, participated in this study. Another limitation of this study is that 66 of 91 students who participated in the study were female. Although there are studies in the literature reporting that females have more dental anxiety (32-34), there are also articles reporting that there is no difference between sexes (4, 35). Nevertheless, in this study, it was found that dental anxiety levels decreased as the educational level of the students increased. Additionally, the approach of dental professionals may also play a role in reducing dental anxiety.

4. CONCLUSION

According to the data obtained from this study, the following conclusions were reached:

1. The MDAS score of 1st year students in the oral and dental health program was found to be higher in all questions compared to the 2nd year students.

2. The mean MDAS score of 1st year students in the oral and dental health program was significantly higher than that of the 2nd year students.

3. The MDAS score of 1st year oral and dental health program students in scaling and root canal treatment procedures was significantly higher than that of 2nd year students.

4. In line with these data, it has been shown that dental anxiety can be reduced by increasing the level of knowledge of individuals about dental treatments.

Acknowledgements: We would like to thank all the students who contributed to the research.

Financial Support: This research received no grant from any funding agency/sector.

Conflicts of Interest: The authors declared that there is no conflict of interest.

Ethical Statement: Ethical approval was obtained for this study from the Burdur Mehmet Akif Ersoy University Non-Interventional Clinical Research Ethics Committee (GO 2022/546)

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