

Assessment of dental anxiety among patients attending College of Dentistry in Sana'a, Yemen

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Financial support:

This study was supported by the author himself.

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هذه الدراسة قيمت تواجد القلق من طبيب الأسنان بين عينة من المرضى البالغين. أجري البحث على عينة بلغ مجموعها 252 زائر ذكور وأناث. استخدم في هذه الدراسة أستييان يتضمن معيار معدل لقياس القلق من طبيب الأسنان (MDAS) وتم توزيعه على المرضى المنتظرين دورهم في المعالجة في عيادات كلية طب الأسنان بجامعة صنعاء. أظهرت النتائج أن نسبة القلق في العينة المأخوذة وصلت إلى 28.17%. ووجد أن نسبة القلق بين مجموعة الإناث أكثر من نصيرتها بين الذكور. ووجد أن مقدار القلق كان عالياً بين الإناث اللواتي زرن طبيب الأسنان من قبل مقارنة باللواتي لم يزرن طبيب الأسنان. التجارب السيئة السابقة لدى طبيب الأسنان مثلت نسبة 46.48% من أجمالي العينة. لم تظهر هذه الدراسة وجود علاقة بين مستوى التعليم أو الدخل وعلاقتهم بمستوى الخوف من طبيب الأسنان ربما بسبب نوعية المرضى المتوافدين للعلاج في عيادات الكلية.

Abstract

Background: The assessment of dental anxiety among patients would provide information on their behavior and aid in planning treatment. The prevalence and factors affecting dental anxiety in new patients visiting a teaching dental clinics in Sana'a University - Yemen, were measured.

Materials and methods: The cross-sectional study utilized a self-reported questionnaire based on Modified Dental Anxiety Scale (MDAS) translated into Arabic. Research was based on interviews with 252 patients, aged 18 years-old and over, attending College of Dentistry's teaching dental clinics in Sana'a University, Yemen from January to March 2009.

Results: It was realized that 28.17% of the study sample was dentally anxious, according to the MDAS. Dental anxiety in both males and females was significantly different regarding gender as measured by (MDAS). The time elapsed since the onset of initial symptoms was more than 7 (seven) days for 44.44% of the participants. A large proportion of anxious women returned to treatment during the past year. A previous traumatic experience with dental treatment was identified in 46.48% of the dentally anxious patients. No significant relation between level of education or income and dental anxiety was observed.

Conclusions: Assessment of dental fear is an extremely useful tool for the dental practitioner, who can use it to customize behavioral treatment and management for individual patients. Dentally speaking, females seemed to have higher dental anxiety as compared to the males. Previous experience seems to be an important factor contributing to avoidance of dental care.

Introduction

Anxiety and its associated symptoms are anticipatory in nature; that is: they are often felt when a stimulus is not present or readily identifiable [12]. Dental anxiety is a complex fear with a number of components involving personality or psychological traits as well as conditioning experiences and vicarious learning [13]. It is an important component of distress to patients in the dental operator [12]. Not only the dental treatment itself but even the anticipation of such treatment can give rise to fear and anxiety. Anxiety are often reported as causes of irregular dental attendance, delay in seeking dental care or even avoidance of dental care [13] and may lead to deterioration of oral and dental health [12 & 14]. Moreover, dentists find phobic patients difficult to manage, thus, affecting the effective provision of dental care to such patients [13]. Assessment of level of dental anxiety among patients would provide information on their behaviour and aid in planning treatment. Dental anxiety is most commonly measured using questionnaires and rating scales [14 & 15]. Various scales have been composed to measure the many aspects of dental anxiety. A commonly applied questionnaire is Corah's Dental Anxiety Scale (DAS) [5]. Translated versions of it have proved to be valid and reliable measures of dental anxiety in culturally diverse populations [13]. The present study was conducted using the Modified Dental Anxiety Scale (MDAS) to assess the dental anxiety among patients visiting

the teaching dental clinics on College of Dentistry in Sana'a, Yemen.

Methods

Research was based on structured interviews, undertaken with patients who sought the emergency treatment in teaching dental clinics on College of Dentistry in Sana'a University, Yemen between January and March 2009, while waiting to be attended. An average of seven hundred patients of all ages is attended per month at this clinics. The major complaint in the majority of cases was toothache, resulting either from tooth decay and its consequences or from periodontal disease. Inclusion criteria for participating in this study were: being 18 years old or over and agreeing to participate in the study and signing a term of informed consent. Patients who did not know how to read were not excluded from this study. In these cases, the term of consent and the questionnaire were read to those who wished to participate. All interviews were conducted by the same person. The patients interviewed were selected by systematic random sampling, comprising a sample of 252 patients (9.1%) among the 2,698 who attended this clinics during the study period. On the average, seven patients participated in this study per day, in alternate days of the week so as to contemplate all days. One patient was allotted to participate in the investigation among each three who fulfilled the requirements mentioned above. The rate of refusal was small: only 5 of 257 patients who were invited to participate

did not agree to fill out the questionnaire.

Patients were characterized according to age, sex, level of education and family income. They were asked questions concerning the time period elapsed since their last visit to a dental service and between the onset of the current symptoms and the present visit to the teaching dental clinics. Each patient was also asked to state the current complaint, intensity of pain (if he/she was not in pain at the moment of the interview, the patient was asked to reply how intense the pain would have to be, supposing he/she was in pain, for him/her to seek a dentist) and if he/she associated any previous experience with his/her anxiety of dental treatment.

Dental anxiety was measured by the Modified Dental Anxiety Scale (MDAS) method. Reliability and validity of the Dental Anxiety Scale described by Corah had been use in different studies. [5, 6 &7].

Results

104 (one hundred and four) men and **148** (one hundred forty eight) women, varying from 18 to 80 years old were interviewed. Among the patients attending teaching dental clinics on College of Dentistry in Sana'a University, Yemen, **61.5% (155/252)** had come due to pain not associated to any other complaints. Other complaints such as swelling, periodontal diseases, bleeding, bad breath, lesions and trauma, occurred in **4.8% (12/252)** of the cases. Pain associated to one of the other complaints mentioned above occurred among **17.5% (44/252)** of the respondents.

Complaints not involving pain, such as stitch removal, cementation of temporary crowns or professional advice, was the motive for attending the service among **16.3% (41/252)** of the patients. The time elapsed between the onset of the current symptoms and the present visit to the teaching dental clinics was greater than seven days in **44.4% (112/252)** of the study sample and **48.0% (121/252)** of the patients stated that, when in pain, they only sought or would seek treatment once the intensity of the pain became unbearable. The proportion of patients classified as anxious (**Figure 1**) according to the MDAS was **28.2% (71/252)**.

There was a greater number of anxious women than men, being that statistically significant differences ($\chi^2=0.01$) between the sexes were observed in relation to the MDAS scores.

The procedures most frequently conducted were related to endodontics (**134/252**), followed by those related to periodontics (**32/252**) and to caries (**30/252**).

Patients were asked how much time had elapsed since the last dental visit and the date of the interview. In the past 12 (twelve) months, **64.8% (46/71)** of the patients who presented dental anxiety had visited the dentist and **70.2% (127/181)** of the patients who were not anxious had also done so.

Among the anxious patients who sought dental treatment in the past year (**46**), the majority were women (**37**). Differences related to the sex of anxious patients who visited the dentist in the previous year were statistically significant ($\chi^2=0.01$), according to the MDAS.

Among the respondents, there were no statistically significant differences between age groups and anxiety ($\chi^2 > 0.05$) (Figure 2).

Among the 252 patients interviewed, 55 stated they had a previous traumatic experience. A previous tooth extraction was reported by 17 patients; 11 patients were afraid of local anesthesia, 7 were afraid of drilling and the remaining 20 patients referred to diverse past experiences. Previous trauma was identified in **46.5% (33/71)** of the patients who presented dental anxiety, according to MDAS scores. There were statistically significant differences between this group and that of the patients with no anxiety ($\chi^2 = 0.01$).

As to family income, Table 1 shows that there were no statistically significant differences among groups when they were compared to one another ($\chi^2 > 0.05$). The proportion of patients who presented dental anxiety, according to MDAS scores were not distributed in a significantly different manner among the group composed of respondents whose families earned up to six minimum wages per month and the one composed of respondents whose families earned more than six minimum wages.

Table 2 shows that the level of the educational patients participating in this study did not present statistically significant differences ($\chi^2 > 0.05$) when groups A+B+C (illiterate + elementary school + incomplete junior high school education), D+E (complete junior high school + incomplete high school education) and F+G+H (complete high school + incomplete undergraduate +

complete undergraduate education) were compared with each other, according to MDAS score.

Discussion

In spite of improvements in dental equipments and procedures and methods of prevention, dental anxiety, pain and/or discomfort associated to dental treatment seem not to have changed over the years.

In this investigation, the patients were 18 years old and over, and they were interviewed while waiting to be attended in the teaching clinics of a dental college in Sana'a university, Yemen. In this setting, both individuals who were anxious due to the situation and those who had dental anxiety could be found. In a study carried out among new patients of a dental emergency clinic, Kaakko et al [7] (1999) found a 21.8% prevalence of dental anxiety. Among adults interviewed at home, prevalence of dental anxiety ranged from 7.2% to 23.4%, when using utilizing diverse instruments developed in order to measure dental anxiety [2, 8 & 9].

This study indicated that women admit their anxiety more than men do, which is consistent with the results found in other studies as well. [2 & 4].

Women whose scores indicated the presence of dental anxiety sought treatment more frequently than men and returned to the dentist in less than one year, which was sooner than their male counterparts. The majority of the dentally anxious patients had sought treatment within the 12 months prior to the current dental visit. In this case, the results of our study differ from those of

Hakeberg et al [4] (1992), in which anxious patients resumed treatment after a period of over two years.

It wasn't possible to establish a relationship between age and anxiety in the study sample, in consonance with Doer et al [2] (1998) and Kaakko et al [7] (1999). However, some authors affirm that there is an inverse relation between these factors [3 & 4].

Fear is a primary emotion that indicates that a dangerous situation was recognized, leading the individual to concentrate all his attention on this event. Anxiety represents a fear which was transferred from a real to an imaginary situation, resulting from similar facts or that recall a previous situation [11]. Thus 46.48% of the patients classified as anxious reported having lived a traumatic experience related to recent odontological procedures. However, Anderson [11] (1997) states that dental anxiety and fear is often a consequence of a previous traumatic story of treatment, which frequently occurs in childhood.

Educational level and family income were not associated to anxiety in this study, a result similar to that found by Hakeberg et al [4] (1992). However, it should be considered that the majority of patients that sought this outpatient clinics were from low income families and their level of education corresponded to high school graduates or less. It would be necessary to increase the number of individuals in the sample with larger family incomes and higher levels of education in order to confirm that there was no relationship between these factors and anxiety.

Based on the anxiety scale it was found that, In the present study, anxious women were present in greater number at the outpatient dental clinics. Previous history of trauma was an important factor in the development of dental anxiety.

The fact that treatment is available free of charge makes it easier for low income patients to seek out this service. However, it should be considered that the health-disease process is multi causal, insofar as socio-economic factors, genetic factors and those associated with family organization are among the first level of causation and may influence factors located at lower levels, such as behavioral factors, where we find the role of the dentist as well as knowledge and attitudes related to dental health, among which are anxiety. Therefore, other factors besides those included in this study may be further investigated so as to shed some light on the problem of dental anxiety.

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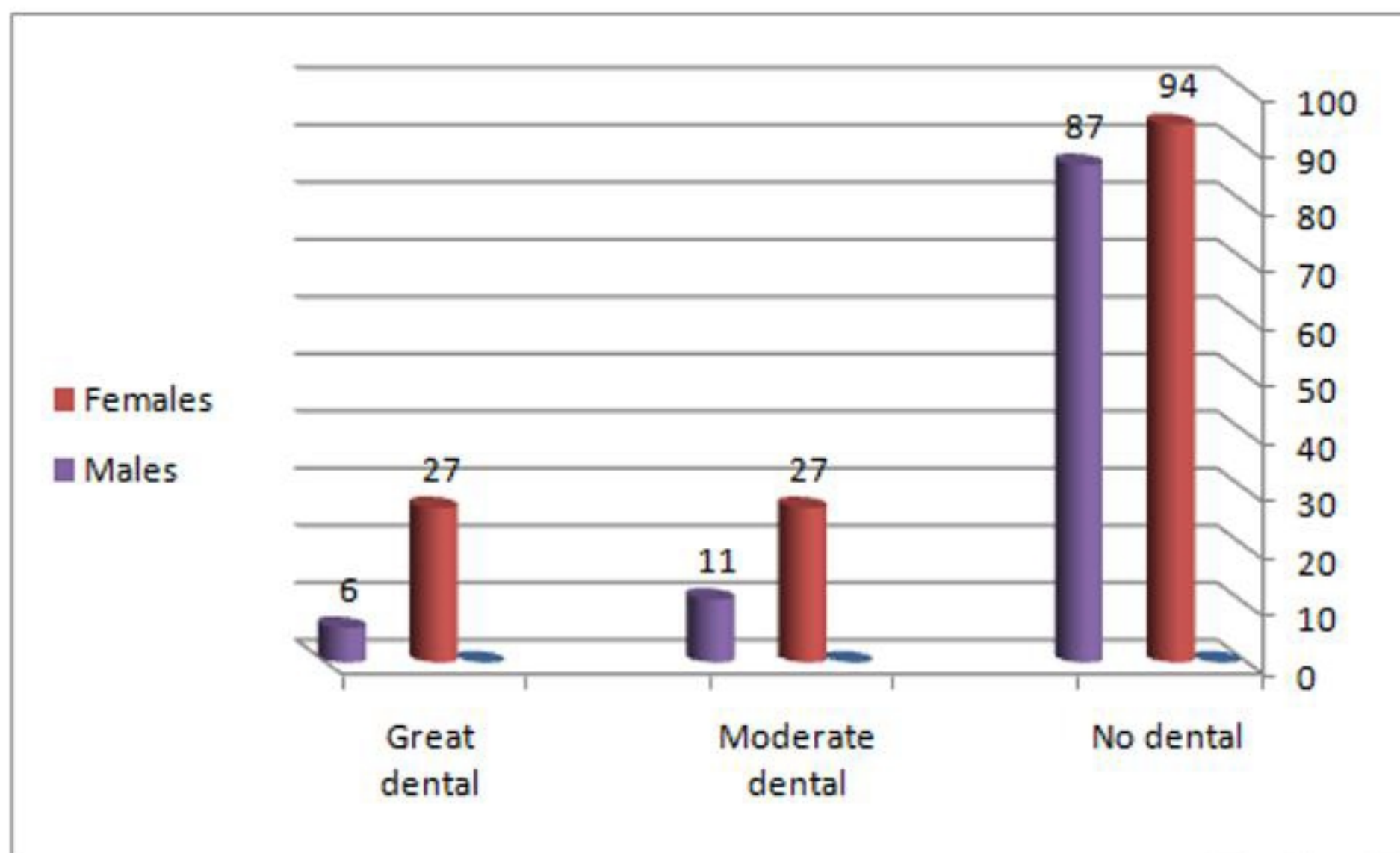


Figure 1 - Distribution of patients according to the Modified Dental Anxiety Scale (MDAS).

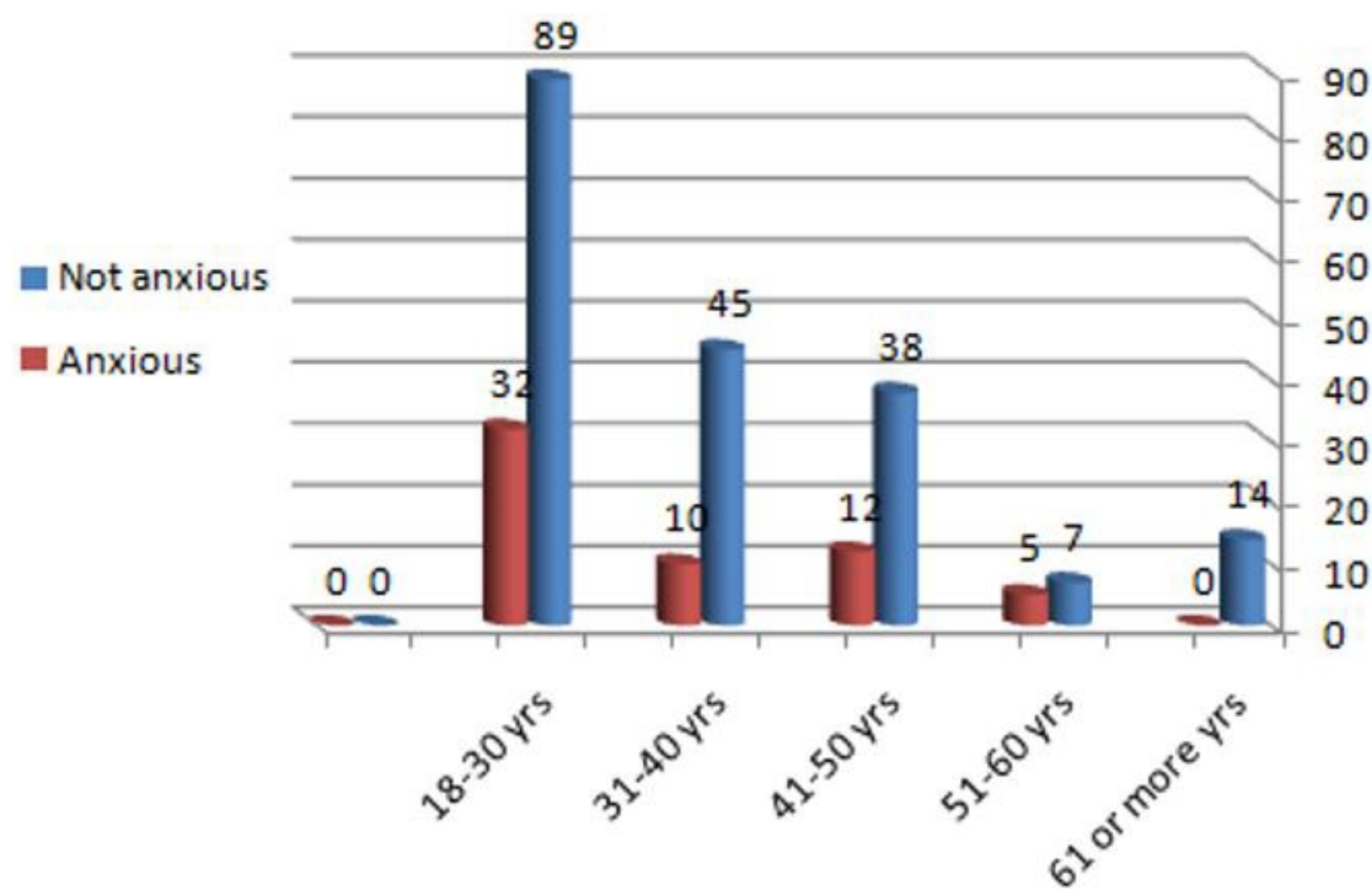


Figure 2 - Distribution of patients in relation to age groups according to Corah Scale.

Table 1 – Distribution of dentally anxious patients according to the MDAS Scale in relation to family income.

Family income	MDAS	
	Not anxious	Anxious
Less than one MW	3	6
One to three MW	62	33
Four to six MW	71	19
Seven to 10 MW	25	10
More than 10 MW	15	3
Doesn't know	5	0
Total	181	71

MW - Minimum Wage

MDAS – Modified Dental Anxiety Scale.

Table 2 – Distribution of patients according to level of education and relation to the MDAS Scale.

Family income	MDAS	
	Men	Women
A+B+C 7*/30** 21*/32**	A+B+C 7*/30** 21*/32**	A+B+C 7*/30** 21*/32**
D+E 7*/26** 18*/23**	D+E 7*/26** 18*/23**	D+E 7*/26** 18*/23**
F+G+H 3*/31** 15*/39**	F+G+H 3*/31** 15*/39**	F+G+H 3*/31** 15*/39**

A+B+C – illiterate + elementary school + incomplete junior high school education

D+E – complete Junior high school + incomplete high school education

F+G+H – complete high school + incomplete undergraduate school + complete undergraduate school

*/** - anxious/not anxious