#### **ORIGINAL ARTICLE**

# DENTAL ANXIETY LEVEL IN DENTAL STUDENTS AND STUDENTS FROM OTHER FACULTIES

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Abstract: Currently, dental anxiety affects up to 50% of the population and represents the emotional and physical response to an anticipated experience, which the individual perceives as threatening. Background: The objective of this study was to compare the level of dental anxiety in a group of students of Dental Medicine compared with a group of students from other faculties. Methods: The study was carried out over a period of 6 months, on 148 participants, who were divided into two study groups and assumed the completion of a questionnaire related to the state of anxiety they have in the dental office as a patient. Results: Of the students with a high level of anxiety, 68.75% are women and only 31.25% are men. The high level of anxiety is present only in 3.57% of the students of the faculty of dental medicine, these being female. For students of other faculties, the situation is significantly different: 15.21% have a high level of anxiety, 56.25% of them are women, and 31.25% are men. Conclusions: Anxiety towards dentistry considerably influences the dental treatment plan of patients with a high level of anxiety. Through the adequate management of anxious patients, the dentist manages to control their stress, thus obtaining the prerequisites for the success of the dental treatment.

Keywords: dental anxiety, dental medicine, fear, phobia.

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## 1. Introduction

Anxiety towards the dentist is frequently found in people who have had unpleasant dental experiences in the past. The dentist who comes into contact with the anxious patient has a difficult task, because in addition to the stress that dental treatment generally bring on patients, there is also the stress generated by the patient's fear, which makes him remember the unpleasant events in the office or to imagine that the pain he will have to endure for a certain treatment is very high [1-3].

Visits to the dental office have always been recognized as an unpleasant, if not painful, moment. Nowadays, this idea remains imprinted in the minds of some of the patients, despite the major efforts made by doctors to create an atmosphere of relaxation and trust [1,4]. The objective of the treatment of the "patient's fear" is for him to experience the feeling of success of the dental treatment, so the dentist must create a treatment plan in stages, starting with less traumatic and less painful therapies, to win patient trust [1,2,5].

Dental anxiety affects up to 50% of the population and represents the emotional and response physical to an anticipated experience, which the individual perceives as threatening. Identifying the specific traits of patients with anxiety problems could allow the introduction of specific stress control measures and the implementation of strategies to break the vicious circle of fear of dental interventions [3,6]. Trakyali G. et al. define anxiety as a set of behavioral manifestations that can be divided into states of anxiety and anxious character [7]. The state of anxiety is a transitory emotional state that varies in intensity and fluctuates over time, while the anxious character is a characteristic of the personality that remains the same over time. It involves a tendency towards fear and manifestations of anxiety even in the absence of external factors [2].

A lot of research has been done on how parents influence the development of anxiety in children, and they have identified numerous factors that can have an impact as a basic factor on the child's anxiety: modeling, encouragement, overprotection, interference or control, tolerance, support, promotion of avoidance. rejection, interpretation of parents, validation of emotions, expression of emotions. attachment, family conflict and parental psychopathology [6,8,9]. Some authors believe that the onset of this type of anxiety would have its origin in childhood, the peak period reaching the first part of the maturation period and then decreasing with age [8,10].

Enrico Facco et al. considered that dental fear is a universal phenomenon, since everywhere in the world about 25% of patients avoid visits and treatments, and about 10% reach the level of phobia [11]. Multiple causes have been discovered such as conditioned fear generated by a previous unpleasant experience, lack of trust in the dentist and intraoperative somatic reactions that can change depending on the dental experience [3,12]. Quentish Taani said that the main cause of anxiety in patients is the fear of facing pain. The sensation of pain is very complex, having biological, psychological and social dimensions [13]. Prabhakar A. et al. [14] have shown that anxiety lowers the pain threshold. The explanation lies in the fact that the patient who is stressed several days before he has an appointment with the dentist has a high level of anxiety and, respectively, a high level of plasma catecholamines that reduce the pain threshold [14]. Thus, the anxious patient perceives pain at the dentist much more acutely than the less anxious patient [14,15].

Anxiety plays an important role in how the patient remembers the pain caused by the dental treatment. Negative emotions act more strongly than pain intensity in memorizing a painful experience. Usually, the dentist's perception of pain is correct at the time and two weeks after, whereas after 6 months, an anxious patient tends to exaggerate the intensity of previously perceived pain [5].

Santhosh Kumar et al. consider that dental anxiety differs significantly with age and with the frequency of dental consultations [16]. Dental fear in children was determined in 3-21% of cases, more in girls than in boys [17]. The studies show that fear reaches its maximum at the age of 9-11 years, then gradually decreases. Exaggerated feelings of fear are rare in childhood and generally disappear by themselves; if they persist, they turn into phobias or clinical fear, situations that require appropriate treatment [6,17]. Following the studies done by Santhosh Kumar et al. it turns out that most females and older people show higher anxiety than males and their younger counterparts [16]. Stepwise linear regression analysis revealed that the best predictors of anxiety are, in descending order: occupation, sex and education [18].

A wide range of questionnaires are used to describe dental fear, the most used being the Corah Dental Anxiety Scale (DAS) and the Dental Fear Scale (DFS) [19,20].

The main objective of this study was to compare the level of anxiety towards the dentist that students of Dental Medicine have as patients with that felt by students from other faculties who do not have the same education.

# 2. Materials and method

The study was carried out over a period of 6 months, on a number of 148 participants, who were divided into two study groups, respectively 56 students of the Faculty of Dental Medicine and 92 students from other faculties. The participants were included in the study groups following written informed consent.

The study involved completing a questionnaire regarding the state of anxiety they have in the dental office as a patient. The questionnaire contained 4 sections with questions, after which information was obtained about personal data, about the general state of health, about dental health and about the level of anxiety felt in the dental environment.

The first section was related to the respondents' personal information and included questions related to name, date of birth, gender, domicile, marital status, professional status and monthly income.

The questions from the "General medical information" section were the following:

- 1. Have you had a serious health problem for which you were operated/hospitalized in the last 5 years?
- 2. Do you drink alcohol?
- 3. Do you smoke/have you smoked?
- 4. Are you addicted to drugs?
- 5. Are you allergic or have you had allergic reactions?

The "Dental information" section included questions such as:

- 1. How often do you brush your teeth in a day?
- 2. How often do you go to the dentist?
- 3. How would you rate your dental health in general?
- 4. How important is it to you to receive dental care?
- 5. Why did you go to the dentist last time?
- 6. Which of the following reasons, if any, prevented you from going to the dentist?
  - Fear
  - An unpleasant experience in the past
  - Costs

The last section of the questionnaire contained questions related to the anxiety felt towards the dental environment, to which the respondents were asked to answer in different forms, as follows:

- please circle the number that best indicates the feeling you feel in the dental office for the following statements:

- I think I'm choking on the dental items placed in my mouth.
   1-not at all; 2-a little; 3-how much;
   4-a lot; 5-very much.
- I am afraid when I hear the sound of instruments applied to my teeth.
   1-not at all; 2-a little; 3-how much;
   4-a lot; 5-very much.
- 3. I'm afraid the dentist might hurt me.1-not at all; 2-a little; 3-how much;4-a lot; 5-very much.
- 4. I think about the appointment many days in advance and worry about how it will go.
  1-not at all; 2-a little; 3-how much;
  4-a lot; 5-very much.
- 5. I am afraid of passing out following anesthesia or treatment.
  1-not at all; 2-a little; 3-how much;
  4-a lot; 5-very much.

- please mark with "X" the situation encountered in your case for the following statements:

1. If you should go to the dentist tomorrow: ...I would look forward to it as a pleasant

experience ...I wouldn't care

...I would be a little worried

...I would be afraid it would be unpleasant or painful

...I would have been scared of what the dentist would do to me;

- 2. When you are waiting for your turn in front of the dental office, how do you feel?
- ...relaxed
- ...a little restless
- ...strained
- ...stirred
- ...so scared that I sweat or feel physically ill
- 3. On the chair in the dental office, before using the dental instruments, how do you feel?
- ...relaxed
- ...a little restless
- ...strained
- ...stirred
- ... so scared that I sweat or feel physically ill
- 4. On the chair in the dental office, waiting for the teeth cleaning procedure, how do you feel?
- ...relaxed
- ...a little restless
- ...strained
- ...stirred
- ...so scared that I sweat or feel physically ill
- please assign a number to each of the
- following questions related to your situation:
- (always = 5; very often = 4; often = 3;
- sometimes = 2; very rarely = 1; never = 0)
- 1. How often are your teeth or gums
- sensitive to hot, cold or sweet?...

2. How often do you use medicines to relieve pain from the teeth or oral cavity?...

3. How often do you worry or feel worried about your dental problems?...

4. How often are you nervous because of your dental problems?...

- please circle the appropriate answer, thinking about what you have felt and experienced about how your teeth affect your life.

The teeth or prosthetic works you have have a good (positive), bad (negative) effect or no effect on (A= good effect; B= bad effect; C= no effect):

- 1. comfort. A / B / C
- 2. confidence. A / B / C
- 3. food. A / B / C
- 4. the taste of food. A/B/C
- 5. the duration of life. A / B / C
- 6. chewing and biting. A / B / C
- 7. the images you have in front of others. A / B / C
- 8. mental states. A/B/C
- 9. kissing. A/B/C
- 10. general conditions. A/B/C
- 11. social activities. A/B/C
- 12. success at college. .A / B / C
- 13. smile and laughter. A / B / C
- 14. speech. A / B / C
- 15. breathing. A/B/C
- 16. the foods you choose to eat. A/B/C
- 17. the pleasures of living. A / B / C
- 18. romantic relationships. A / B / C
- 19. social life. A/B/C
- 20. happiness in general. A/B/C

The statistical analysis was carried out with the help of the Google Docs program, the section dedicated to the "Google Forms" forms.

The study was approved by the Ethics Committee of the University of Medicine and Pharmacy in Craiova (Approval Number 55/29.01.2024) and was carried out in accordance with the ethical principles of the Declaration of Helsinki (version 2013).

#### 3. Results

Among the students included in the study, 102 (69%) were female, while 46 (31%) were male. The groups studied were the following: the group of students in Dental Medicine (group A), composed of 56 students, 38 girls and 18 boys, and the group of students from other faculties (group B) composed of 92 students, 64 girls and 28 of boys (Table 1).

**Table 1.** Distribution of study participants in the two groups.

| No.    | Group A | Group B | Total | Percentage (%) |
|--------|---------|---------|-------|----------------|
| Female | 38      | 64      | 102   | 69%            |
| Male   | 18      | 28      | 46    | 31%            |
| Total  | 56      | 92      | 148   | 100%           |

According to the place of origin of the participants in the study, 82% come from the

urban environment and 18% come from the rural environment (Table 2).

| Table 2. The distribution of | of study participants | according to the fa | aculty where t | hey study. |
|------------------------------|-----------------------|---------------------|----------------|------------|
|------------------------------|-----------------------|---------------------|----------------|------------|

| No.   | Grou   | Group A |        | Group B |      | Percentage (%)  |  |
|-------|--------|---------|--------|---------|------|-----------------|--|
| 1.00  | Female | Male    | Female | Male    | 1000 | rereentage (70) |  |
| Urban | 35     | 17      | 48     | 22      | 122  | 82%             |  |
| Rural | 3      | 1       | 16     | 6       | 26   | 18%             |  |
| Total | 38     | 18      | 64     | 28      | 148  | 100%            |  |

The subjects included in the study have a monthly income that is in most cases below 600 RON per month (Table 3). 53.5% of Dental Medicine students brush twice a day, while 37.5% brush three times a day, especially girls.

Only 8.9% of group A students brush their teeth once a day. In the case of students from other faculties, 63% brush their teeth twice a day, 16.3% three times a day, and 21.7% only once a day (Table 4).

Table 3. Distribution of participants according to monthly income

| No                 | Grou   | Group A Group B |        | Total | Percentage (%) |                  |
|--------------------|--------|-----------------|--------|-------|----------------|------------------|
|                    | Female | Male            | Female | Male  | Iotui          | r creentage (70) |
| Less than 600 RON  | 27     | 9               | 29     | 13    | 78             | 52%              |
| 600- 1000 RON      | 8      | 7               | 20     | 3     | 38             | 26%              |
| More than 1000 RON | 3      | 2               | 15     | 12    | 32             | 22%              |
| Total              | 38     | 18              | 64     | 28    | 148            | 100%             |

Table 4. Distribution of study participants according to the frequency of tooth brushing.

**11** DOI: 10.58179/RJDR1301

| No.               | Grou   | Group A |        | Group B |       | D           |
|-------------------|--------|---------|--------|---------|-------|-------------|
|                   | Female | Male    | Female | Male    | Total | Percentage% |
| Not at all        | 0      | 0       | 0      | 2       | 2     | 1%          |
| Once a day        | 2      | 3       | 9      | 11      | 25    | 17%         |
| Twice a day       | 17     | 13      | 41     | 14      | 85    | 57%         |
| Three times a day | 19     | 2       | 14     | 1       | 36    | 25%         |
| Total             | 38     | 18      | 64     | 28      | 148   | 100%        |

Most of the students in the study (54.72%) visit the dentist "when necessary". Thus, 42.85% of group A students, as well as

61.95% of group B students go to the dentist "when necessary" (Table 5).

**Table 5.** Distribution of study participants according to the frequency of visits to the dentist.

| No. –                    | Group A |      | Grou   | ıp B | – Total | Domoonto go 9/) |
|--------------------------|---------|------|--------|------|---------|-----------------|
|                          | Female  | Male | Female | Male | - Totai | rercentage 76)  |
| Never                    | 0       | 0    | 1      | 4    | 5       | 3%              |
| When necessary           | 15      | 9    | 39     | 18   | 81      | 56%             |
| Once a year              | 5       | 1    | 15     | 3    | 24      | 16%             |
| Once every 6 months      | 11      | 6    | 6      | 1    | 24      | 16%             |
| More often than 6 months | 7       | 2    | 3      | 2    | 14      | 9%              |
| Total                    | 38      | 18   | 64     | 28   | 148     | 100%            |

The reasons for visits to the dentist are represented by treatment (57.14%) and cleaning (62.5%) in the case of group A students and only in 8.9% of cases it is about pain. Among group B students, in 32.6% of cases the reason is pain, in 61.9% dental treatment and in 45.65% of cases it is teeth cleaning (Table 6).

To the question "I think I'm suffocating with the dental objects placed in my mouth", group A students answered 76.7% - not at all, 16.07% - a little, 3.57% quite a bit and 3.57% have answered a lot, and the group B students 48.9% answered - not at all, 28.26% - a little, 18.47% - somewhat, 4.37% - a lot (Table 7).

Table 6. Distribution of study participants according to the reason for the last visit to the dentist

**12** DOI: 10.58179/RJDR1301

| No               | Group A |      | Grou   | Group B |         | Democrate as (9/) |
|------------------|---------|------|--------|---------|---------|-------------------|
|                  | Female  | Male | Female | Male    | - Totai | rercentage (76)   |
| Pain             | 3       | 2    | 22     | 8       | 35      | 24%               |
| Dental treatment | 22      | 10   | 41     | 16      | 89      | 60%               |
| Teeth cleaning   | 21      | 14   | 29     | 13      | 77      | 52%               |
| Total            | 38      | 18   | 64     | 28      | 148     | 100%              |

Table 7. Participants' responses to the question "I think I'm choking on the dental objects placed in my mouth."

| Na         | Group A |      | Grou   | p B  | Total   | $\mathbf{D}_{a}$ |
|------------|---------|------|--------|------|---------|------------------|
| 10.        | Female  | Male | Female | Male | - 10tai | Percentage (%)   |
| Not at all | 27      | 16   | 33     | 12   | 88      | 59%              |
| A little   | 7       | 2    | 15     | 11   | 35      | 24%              |
| Somewhat   | 2       | 0    | 13     | 4    | 19      | 13%              |
| A lot      | 2       | 0    | 3      | 1    | 6       | 4%               |
| Total      | 38      | 18   | 64     | 28   | 148     | 100%             |

Among the surveyed students from the group A, they answered as follows: -55.35% are not afraid "at all", -32.04%,, a little",-7.42%,, "how much" and only -5.34%,, a lot", and of those surveyed from group B,

32.60% are not afraid "at all", 29.16% are afraid,, a little", 20.52% answered that they are afraid,, how much by how much" and much 17.29% (Table 8).

**Table 8.** The answers of the participants to the question "I am afraid when I hear the sound of instruments applied to my teeth".

| No. —      | Group A |      | Grou   | ıp B | Total | Domontogo (9/)  |
|------------|---------|------|--------|------|-------|-----------------|
|            | Female  | Male | Female | Male |       | Tercentage (70) |
| Not at all | 17      | 14   | 17     | 13   | 61    | 41%             |
| A little   | 14      | 4    | 22     | 5    | 45    | 30%             |
| Somewhat   | 4       | 0    | 15     | 4    | 23    | 16%             |
| A lot      | 3       | 0    | 10     | 6    | 19    | 13%             |
| Total      | 38      | 18   | 64     | 28   | 148   | 100%            |

55.35% of group A students are not afraid that the doctor could hurt them, compared to 31.32% from group B; 26.7% from group A answered that they are afraid it could hurt them, and 39.96% from group B; only 5.34% answered that they were somewhat afraid compared to 17.28% from Group B; 7.56% from group B and 7.12% from group A fear a lot, and very much 3.56 from group A and 3.24% from group B (Table 9).

| No. —      | Grou   | Group A |        | ıр B | Total | Demoentage (9/) |
|------------|--------|---------|--------|------|-------|-----------------|
|            | Female | Male    | Female | Male | Total | Percentage (%)  |
| Not at all | 19     | 13      | 16     | 13   | 61    | 42%             |
| A little   | 11     | 4       | 29     | 8    | 52    | 35%             |
| Somewhat   | 3      | 0       | 11     | 5    | 19    | 13%             |
| A lot      | 4      | 0       | 6      | 1    | 11    | 7%              |
| Very much  | 1      | 1       | 2      | 1    | 5     | 3%              |
| Total      | 38     | 18      | 64     | 28   | 148   | 100%            |

Table 9. Participants' answers to the question "I'm afraid that the dentist might hurt me".

Group A students 60.52% do not think at all about programming before this, 24.92% think a little, 8.9% somewhat, 3.56% think a lot compared to those from group B where 50 .76% do not think at all, 25.92% think a little, 23.4% think a little and only 6.48% think a lot, and 2.16% think a lot (Table 10).

**Table 10.** Participants' responses to the question "I think about the appointment many days in advance and worry about how it will go".

| No. —      | Grou   | Group A |        | ıр B | - T-4-1 | <b>D</b>       |
|------------|--------|---------|--------|------|---------|----------------|
|            | Female | Male    | Female | Male | lotal   | Percentage (%) |
| Not at all | 23     | 11      | 27     | 20   | 81      | 55%            |
| A little   | 8      | 6       | 20     | 4    | 38      | 26%            |
| Somewhat   | 5      | 1       | 11     | 2    | 19      | 13%            |
| A lot      | 2      | 0       | 4      | 2    | 8       | 5%             |
| Very much  | 0      | 0       | 2      | 0    | 2       | 1%             |
| Total      | 38     | 18      | 64     | 28   | 148     | 100%           |

Regarding the fear of fainting in the dental office, 65.86% from group A answered not at all, as well as 62.64% from group B; from group A 14.24% fear less than those from group B -17.28%; an almost equal percentage between group A 10.64% and

In addition, the study participants were invited to answer the Corah questionnaire. The answers were marked with 1 and 5 in order from a to e, the possible total being 20 those from group B-10.8% who are very afraid; those from group B 7.56% are more afraid compared to 7.12% from group A and "very much" those from group A are afraid 1.78% and 1.08% from group B (Table 11).

(only answers e). Anxious individuals have the index measured by the Corah scale around 13 or more.

| No. —      | Grou   | ıр A | Gro    | up B | _ Total | Percentage |
|------------|--------|------|--------|------|---------|------------|
|            | Female | Male | Female | Male |         | (%)        |
| Not at all | 26     | 11   | 41     | 17   | 95      | 64%        |
| A little   | 4      | 4    | 13     | 3    | 24      | 16%        |
| Somewhat   | 3      | 3    | 3      | 7    | 16      | 11%        |
| A lot      | 4      | 0    | 6      | 1    | 11      | 8%         |
| Very much  | 1      | 0    | 1      | 0    | 2       | 1%         |
| Total      | 38     | 18   | 64     | 28   | 148     | 100%       |

Table 11. The participants' answers to the question "I am afraid of passing out as a result of anesthesia or treatment".

The Corah Questionnaire

Circle the answers as you think:

1. If you had to go to the dentist tomorrow, how would you feel about it?

a. I would consider this a pleasant experience;

- b. I wouldn't feel at all;
- c. I would be a little affected;
- d. I would be afraid of pain;

e. I would be very afraid of what the dentist might do to me.

- 2. How do you feel when you are sitting in the waiting room at the dentist and waiting for your turn?
- a. relaxed;
- b. a little uncomfortable;
- c. tense;
- d. anxious;
- e. so anxious that I'm sweating and sick.
- 3. When you are in the dental chair and the dentist prepares his bur, how do you feel?

- a. relaxed;
- b. a little uncomfortable;
- c. tense;
- d. anxious;
- e. so anxious that I'm sweating and sick.
- 4. You are in the dental chair and have come to clean your teeth. How do you feel when you wait for the dentist to prepare the tools with which he will clean your teeth?
- a. relaxed;
- b. a little uncomfortable;
- c. tense;
- d. anxious;
- e. so anxious that I'm sweating and sick.

Using the Corah questionnaire on the two groups of students showed that 89.18% of all students participating in the study have a low level of anxiety, while only 10.8% have a high level of anxiety. Of these, 10.8% half have a phobia towards dental treatment (Table 12).

| Anxiety level | Group A |      | Group B |      | Tatal   | $\mathbf{D}_{\text{ansam}}$ to as $(0/)$ |  |
|---------------|---------|------|---------|------|---------|--|--|
|               | Female  | Male | Female  | Male | - Iotai | Percentage (%)                           |  |
| 5             | 13      | 12   | 10      | 6    | 41      | 28%                                      |  |
| 6             | 3       | 2    | 5       | 2    | 12      | 8%                                       |  |
| 7             | 0       | 0    | 6       | 2    | 8       | 5%                                       |  |
| 8             | 8       | 3    | 9       | 3    | 23      | 16%                                      |  |
| 9             | 6       | 1    | 14      | 3    | 24      | 16%                                      |  |
| 10            | 5       | 0    | 10      | 3    | 18      | 12%                                      |  |
| 11            | 1       | 0    | 1       | 2    | 4       | 3%                                       |  |
| 12            | 0       | 0    | 0       | 2    | 2       | 1%                                       |  |
| 13            | 1       | 0    | 5       | 2    | 8       | 5%                                       |  |
| 14            | 0       | 0    | 3       | 1    | 4       | 3%                                       |  |
| 15            | 0       | 0    | 0       | 1    | 1       | 1%                                       |  |
| 16            | 0       | 0    | 1       | 1    | 2       | 1%                                       |  |
| 17            | 1       | 0    | 0       | 0    | 1       | 1%                                       |  |
| 18            | 0       | 0    | 0       | 0    | 0       | 0%                                       |  |
| 19            | 0       | 0    | 0       | 0    | 0       | 0%                                       |  |
| 20            | 0       | 0    | 0       | 0    | 0       | 0%                                       |  |
| Total         | 38      | 18   | 64      | 28   | 148     | 100%                                     |  |

**Table 12.** Distribution of participants in the study groups according to the level of anxiety measured with the Corah scale.

Of the patients with a high level of anxiety, 68.75% are women and only 31.25% are men. The high level of anxiety is present only in 3.57% of group A students, these

being female. For group B students, the situation is significantly different: 15.21% of all group B students have a high level of anxiety, 56.25% of them being women, and 31.25% being men (Table 13).

 Table 13. Distribution of study participants according to the level of anxiety measured with the Corah scale.

| Anxiety level | Group A |      | Group B |      |         | Percentage |
|---------------|---------|------|---------|------|---------|------------|
|               | Female  | Male | Female  | Male | - Total | (%)        |
| 5-12 Normal   | 36      | 18   | 55      | 23   | 132     | 90%        |
| 13-15 Anxiety | 1       | 0    | 5       | 2    | 8       | 5%         |
| 16-20 Phobia  | 1       | 0    | 4       | 3    | 8       | 5%         |
| Total         | 38      | 18   | 64      | 28   | 148     | 100%       |

#### 4. Discussions

Among the students included in the study, 102 (69%) were female, while 46 (31%) were male. Most of the participants in the study (82%) come from the urban environment and

only 18% come from the rural environment. The subjects included in the study present a monthly income that is in most cases (52.7%) below 600 RON per month. For students in group A, the income is below 600 RON for 64.28%, between 600 and 1000 RON for 26.78% and over 1000 RON in 8.9% of cases. For students in group B, the average monthly income is below 600 RON for 45.65%, between 600 and 1000 RON for 25% and over 1000 RON in 29.35% of cases.

53.57% of students at the Faculty of Dental Medicine brush twice a day, while 37.5% brush three times a day, especially girls. Only 8.9% of students in group A brush their teeth once a day. In the case of students from other faculties, 63% brush their teeth twice a day, 16.3% three times a day, and 21.7% only once a day. Most of the students in the study (54.72%) visit the dentist "when necessary". Thus, 42.85% of students from group A, as well as 61.95% of students from group B, go to the dentist "when necessary". Students go for checkups once a year or once every 6 months in 16.21% of cases. Only 9.45% of all students visit the doctor more frequently than 6 months. More conscientious are the female students from group A who, in the proportion of 60.5%, go to the dentist at least once a year, while the female students from group B go to the dentist at least once a year in proportion of 37.5%. For male students from group A, we never encountered the situation of never going to the dentist, while for male students from group B, this occurs in 5.43% of cases. The reasons for visits to the dentist are represented by treatment (57.14%) and cleaning (62.5%) in the case of students from group A and only in 8.9% of cases it is about pain. In students from group B, in 32.6% of cases the reason is pain, in 61.9% dental

**17** DOI: 10.58179/RJDR1301

treatment and in 45.65% of cases it is teeth cleaning.

The importance of behavioral sciences and psychology is increasing both in the field of dental education and in clinical practice. A high percentage of patients are so afraid of dental care that they postpone or avoid going to appointments. Apart from avoidance behavior, dental anxiety has a wide and dynamic impact on a person's life. Therefore, careful assessment of anxiety and treatment is an essential step for appropriate patient management and overall quality of care [1,15].

The assessment of dental anxiety can be carried out with a wide range of approaches, including several psychological tests able to explore general aspects related to anxiety and / or dental anxiety [19,20]. A comprehensive review of the main tests for anxiety and pain assessment in dentistry was published by Newton and Buck [21]. Of the 15 tests mentioned by Newton and Buck, the results of the Corah Dental Anxiety Scale (CDAS) are the most widely used. The CDAS outlines 4 situations, each including 5 responses about high anxiety; the sum of the answers varies between 4 and 20 and scores higher than 12 indicate anxious patients and scores higher than 15 indicate a phobia level [21]. The diffusion of CDAS in clinical practice depends on the fact that it is validated, reproducible, focused on dental fear simply and quickly. This questionnaire has been used for both adults and children. demonstrating high internal consistency and test-retest reliability and is available in 4

European languages (German, Norwegian, Dutch and Hungarian) [22,23].

The use of the Corah questionnaire on the two groups of students in the study showed that 89.18% of all students participating in the study have a low level of anxiety, while only 10.8% have a high level of anxiety, half of them presenting even phobia of dentistry. Of the patients with a high level of anxiety, 68.75% are women and only 31.25% are men. The high level of anxiety is present only in 3.57% of the students in group A, these being female. For students from group B, the situation is significantly different: 15.21% of all students from group B have a high level of anxiety, 56.25% of them being women, and 31.25% being men. Dental fear is a universal phenomenon, since everywhere in the world about 25% of patients avoid visits and treatments, and about 10% reach the level of phobia. Multiple endogenous and exogenous causes have been cited: the latter includes conditioned fear, lack of trust in the dentist, and intraoperative somatic reactions that may change with dental experience [24].

The problem is of critical importance for several reasons: (a) avoidance causes a deterioration of oral health and quality of life; (b) high levels of anxiety or phobia can affect the dentist/patient relationship, prevent adequate dental treatment and be a cause of

The educational level of the patient does not seem to influence the presence of a high level of stress, despite previous descriptions stating that the degree of anxiety is negatively correlated with the educational achievements intraoperative complications; and (c) the stress response caused by anxiety can generate a harmful reaction, such as vasovagal syncope, hypertension, tachycardia, and cardiovascular events. The latter is extremely important in high-risk patients (i.e. ASA class II and higher) where the diagnosis and treatment of dental anxiety becomes essential for patient safety [12,17].

In this study, several aspects of anxiety (e.g. fear as a general reaction in life, dental fear and anxiety as a personal characteristic) as well as the level of oral hygiene were assessed in student patients to verify how dental care affects the state and dental anxiety. Students in group B presented a higher level of anxiety than students in group A (generated by dental care), girls being significantly more anxious than boys, while a better knowledge of dental hygiene was not sufficient to decrease the level of anxiety, suggesting the need for specific preventive care for anxious patients. According to Popescu et al., dental health education and behavioral factors like sweet consumption and chewing gum use are correlated with level of dental anxiety [24].

The study by Vazquez et al. argues that women are more anxious than men because female patients achieve higher levels of stress than their male counterparts [4].

of the subject [4,25]. The high rate of anxiety that women experience when it comes to surgery should be taken into account by professionals during clinical treatment, as women seem to be more likely to ignore their oral health due to anxiety about dental procedures [4].

## 5. Conclusions

Dental anxiety is frequently encountered in patients who have had unpleasant dental experiences in the past (failed dental treatments, treatment complications, pain experienced during dental treatment). In the present study, 10.8% of the subjects show a high level of anxiety, and half of them even have a phobia towards the dentist. Also, almost half of the participants in the study (regardless of the faculty) avoid visits to the dentist, going only "when necessary". Regardless of the level of training and education received, anxiety plays a very important role in maintaining oral health.

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Females are more anxious than males, obtaining higher levels of stress than males. Although students from other faculties presented a higher level of anxiety than those from the Faculty of Dental Medicine (who benefit from professional knowledge about oral health care), still a better knowledge of dental hygiene was not sufficient to reduce the level of anxiety, which emphasizes the importance of specific preventive care for anxious patients.

Anxiety towards dentistry considerably influences the dental treatment plan of patients with a high level of anxiety. Through the adequate management of anxious patients, the dentist manages to control their stress, thus obtaining the prerequisites for the success of the treatment.

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#### Author contributions

*Authors read and approved the final manuscript. All authors have equally contributed to this work.* **Acknowledgements** 

# Not applicable.

# Funding information

No source of external funding was received for the completion of this study.

#### **Conflict of interest statement**

The authors declare no conflicts of interest concerning this study.

#### Data availability statement

Will be provided on request.

#### **Ethics statement**

Approved by the Scientific Ethics and Deontology Commission of UMF Craiova (no. 55/29.01.2024)

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#### How to cite:

Emma Cristina Drăghici, Antonia- Samia Khaddour, Răzvan- Eugen Ghiță, Melania Olimpia Cojocaru, Roxana Iulia Marinescu, Robert Petrescu, Monica Scrieciu, Sanda Mihaela Popescu. *Dental anxiety level in dental students and students from other faculties*. Rom J Dent Res. 2024;.Vol 1(Nr.3):6-24.