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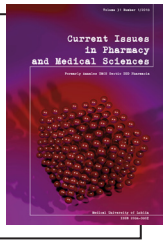

The level of dental anxiety in students of the first year of studies from Lublin Universities

Malgorzata H.J. Sikorska-Jaroszynska[1], Maria Mielnik-Blaszczak[1], Dorota Krawczyk[1], Katarzyna Gromadzka-Blaszczak[2], Rafal Wrobel[1*], Agnieszka Skawinska-Bednarczyk[1], Marta Kuraszko[1]

[1] Chair and Department of Paediatric Dentistry, Medical University of Lublin, Karmelicka 7, 20-081 Lublin, Poland
[2] Medical Centre of Prof. Marek Masiak, Strzelce 28, 24-150 Naleczow, Poland

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ABSTRACT

Dental anxiety is a very important factor affecting the efficacy of prevention, diagnosis and treatment of dental diseases, both in patients in the developmental age and in young adults. Anxiety is considered an emotional state with negative connotations. The aim of the study was to determine the level of dental anxiety in first year university students, the intent being to help to develop an individual treatment plan in this group of patients. The study involved 280 students including 230 females and 50 males. Of these, 122 patients were from the Medical University of Lublin, 79 from University of Life Sciences and 79 from University of Maria Curie-Skłodowska. The mean age of the study subjects was 21 years and 8 months ± 3,9 months. No differences in the level of dental anxiety between women and men were observed. The highest level of dental anxiety was observed among students of University of Life Sciences, while the lowest level was observed among students of the Medical University.

INTRODUCTION

Dental anxiety is a very important factor affecting the efficacy of prevention, diagnosis and treatment of dental diseases, both in patients in the developmental age and in young adults. Anxiety is considered an emotional state with negative connotations. Therefore, in accordance with the assumption of holistic dentistry, it is necessary to define to what extent anxiety affects patients' attitude to dental visits and the relations between them and dentists, and as a result, the development of an individual patient treatment plan. Currently, it is recognised that prior to treatment, it is necessary to define the level of dental anxiety in all patients so that appropriate methods could be selected to control this emotional state (if it occurs) prior to commencing treatment, and to make sure patients trust their dentists [1,2,3].

The aim of the study was to determine the level of dental anxiety in first year university students. This, we hold, could help to develop an individual treatment plan in this group of patients.

* **Corresponding author**
e-mail: passero1@wp.pl

MATERIAL AND METHODS

The study involved 280 students, including 230 females and 50 males. Of these, 122 patients were from the Medical University of Lublin, 79 from University of Life Sciences and 79 from University of Maria Curie-Skłodowska. The mean age of the study subjects was 21 years and 8 months ± 3,9 months. After initial explanation of the purpose of the study and an introduction, the subjects were asked to fill in a study questionnaire. The questionnaires were completed individually by each study subject in groups formed by students attending the same school class. Corah's Dental Anxiety Scale was used in the survey [4,5] (Table 1).

The sum of the points scored by the study subject. For each question there are five possible answers, each awarded with a score ranging from 1 to 5 points, respectively, which defines the level of dental anxiety. A total score of 4-7 points is characteristic for patients with low level of dental anxiety; medium level of dental anxiety is described by the score of 8-11 points, while patients who scored 12-20 points were classified as the group of patients with high level of dental anxiety.

In a statistical analysis of the acquired results of the questionnaire survey, the following methods of statistical analysis

Table 1. Questions included in the Dental Anxiety Scale

No.	Question	Answer
1.	How did you feel at home knowing that you are about to visit the dentist?	1. waiting patiently for the necessary event 2. not anxious about what was going to happen 3. anxious about the upcoming visit 4. afraid that the visit may be unpleasant and painful 5. afraid of what the dentist was going to do
2.	You are in a dental office waiting room. How do you feel?	1. relaxed 2. slightly uneasy 3. tense 4. fearful 5. so anxious that I am on the verge of a psychological breakdown, sweating and feeling sick
3.	You are sitting on a dental chair. How are you feeling when you see the dentist holding a drill ready to begin the dental treatment procedure?	1. relaxed 2. slightly uneasy 3. tense 4. fearful 5. so anxious that I am on the verge of a psychological breakdown, sweating and feeling sick
4.	You are about to have the dental calculus removed. You are waiting for the dentist to prepare the instruments that he/she is going to use. How are you feeling then?	1. relaxed 2. slightly uneasy 3. tense 4. fearful 5. so anxious that I am on the verge of a psychological breakdown, sweating and feeling sick

were used. For the qualitative – arbitrary features, percentages were calculated respectively for the females, males and the whole study group. When comparing the results, statistical methods based on hypotheses verification were used the Kruskal-Wallis test. The calculations were made using Statistica 10.0 software. Statistical significance was determined at the level of $p < 0.05$.

RESULTS

The conducted analysis showed that the most frequent answer to the first question on the Corah's scale concerning the patient's feeling before going to the dentist was answer 2 (not anxious about what was going to happen – 25.35%, n = 117), followed by answer 4 (afraid that the visit may be unpleasant 45.45%, n = 71), answer 3 (anxious 33.55%, n = 49), and answer 1 (relaxed 5.84%, n = 35), respectively. The least frequent answer was answer 5 (afraid of what the dentist was going to do – 1.33%, n = 8). In the case of question 2 concerning the patient's feelings while in a dental office waiting room, the answer frequency was as follows: answer 2 (slightly uneasy 20.20%, n = 121), answer 1 (relaxed 13.85%, n = 83), answer 3 (tense 9.18%, n = 55), answer 4 (fearful 2.33%, n = 14). The least frequent answer was answer 5 (so anxious that I am on the verge of a psychological breakdown, sweating and feeling sick (1.16%, n = 7)). The most frequent answer to question 3 on feeling while sitting on a dental chair prior to a dental treatment procedure was answer 2 (slightly uneasy 18.19%, n = 109). It was followed by answer 3 (tense 13.02%, n = 78), answer 1 (relaxed 9.01%, n = 54), answer 5 (so anxious that I am on the verge of a psychological breakdown, sweating and feeling sick 3.50%, n = 21), and the least frequently selected was answer 4 (fearful 3.00%, n = 18). In the case of question 4 regarding the patient's feelings when the dentist is preparing the instruments for scaling, the most frequent answer was answer 1 (relaxed 19.36%, n = 116), followed by answer 2 (slightly uneasy 16.86%, n = 101), answer 3 (tense 7.34%, n = 44), answer 4 (2.50%, n = 15) and answer 5 (0.66%, n = 4).

Statistical analysis revealed a low level of dental anxiety in 113 respondents (in 81 females and 32 males, respectively), a medium level of dental anxiety in 110 respondents (in 95 females and 15 males, respectively), and a high level of dental anxiety in 57 patients (54 in females and 3 in males, respectively). However, the statistical analysis did not reveal a significant correlation between sex of the respondents and the level of dental anxiety (H = 279, p = 0.488).

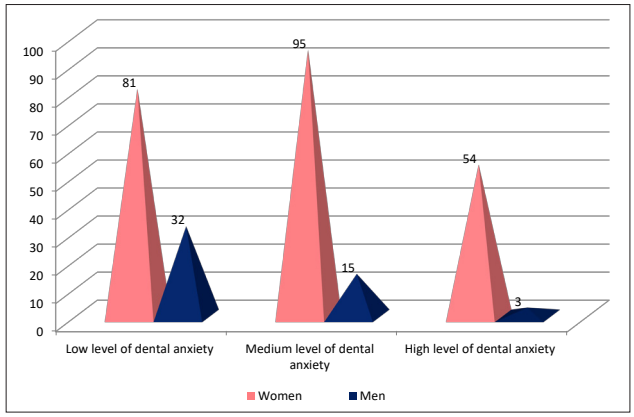

Figure 1. Level of dental anxiety vs sex of the study subjects

On analysing the level of dental anxiety with regard to a particular university, it was shown that low level of dental anxiety was observed in 63 students of the Medical University, 22 students of the University of Life Sciences and 28 students of UMSC (Maria Curie-Skłodowska University). A medium level of dental anxiety was observed in 48 students of the Medical University, 31 students of the University of Life Sciences and 31 students of UMSC. Finally, a high level of dental anxiety was observed in 10 students of the Medical University, 26 students of the University of Life Sciences and 21 students of UMSC. Thus, the lowest level of dental anxiety was the most frequently observed among students of the Medical University, while the highest level of anxiety was revealed among students of the University of Life Sciences. It must be emphasised, however, that the correlation was not statistically significant (H = 79, 15, p = 0.568).

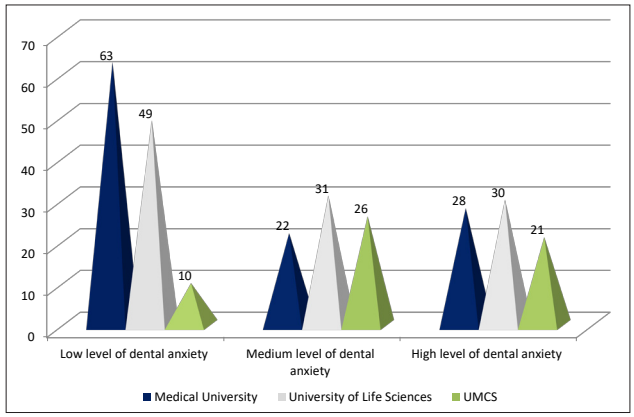

Figure 2. Level of dental anxiety among students of the Medical University, University of Life Sciences and UMSC

DISCUSSION

On the one hand, dental anxiety is a serious problem among patients, but on the other hand, it is a factor determining a successful diagnostic and therapeutic procedure. It is held that dental anxiety refers to the situation in a dental office and is related to a general level of fear observed in patients of the locality, as well as with the potential pain to be encountered and the general pain threshold held [6]. According to Carter *et al*., there are five pathways relating to dental anxiety and fear. These are Cognitive Conditioning, Informative, Visual Vicarious, Verbal Threat and Parental [7]. Meta-analysis conducted by Lin *et al*., on the basis of 35 articles, has revealed that dental anxiety is a factor explaining the attitude to dental treatment before and during dental treatment, but not after treatment completion. The authors have also indicated that the level of dental anxiety affects the level of pain during the whole therapeutic procedure [quote after 8]. Patients with mental disorders have a significantly high risk of dental anxiety and dental phobia. Based on the following data bases: MEDLINE, PsychInfo and Embase, Kisely *et al*. analysed 19 articles describing studies that included 334503 patients with mental disorders, and revealed that both DMFT index and DMFS index were higher in all the patients with mental disorders. The authors conclude that close cooperation between psychiatrists, dentists and dental assistants is necessary, even more so due to the fact that patients with mental disorders very often suffer from iatrogenic dry mouth [9]. Autism has a similarly big influence on the level of dental anxiety and therapeutic treatment in patients with oral diseases [10]. Shin *et al*., conducted a literature review which led them to the conclusion that dental fear and anxiety occurred in 10% of all their study subjects. The authors also observed that dental anxiety was related to occurrence of pain and usually decreased with age, and was more common among females [11]. In our own studies, no differences between the level of dental anxiety and sex were observed. It was also impossible to determine if the level of anxiety decreased with age, since the subjects included in the study were of similar age.

Considering the above, it is extremely important to counted dental anxiety and fear using both psychological and pharmacological methods [12-15].

CONCLUSIONS

No differences in the level of dental anxiety between women and men were observed. The highest level of dental anxiety was observed among students of University of Life Sciences, while the lowest level was observed among students of the Medical University.

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