

THESIS TITLE: DETERMINANTS OF CHILD ANXIETY IN THE DENTAL OFFICE AND PROPOSALS FOR INTERVENTION

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SUMMARY

Anxiety is one of the primary emotions that occurs due to threatening stimuli and can be managed through various interventions, which are established depending on the degree of manifestation. Dental anxiety in children and adolescents can lead to disruptive behavior during dental treatment. Its persistence can lead to the avoidance of dental care and subsequently to the appearance of oral health problems. Childhood and adolescence are the main period of risk for the development of anxiety symptoms that can range from mild, transient symptoms to severe anxiety disorders. Dental anxiety is a common problem that can lead to deliberate avoidance of dental treatment, thus having a negative effect on the patient's oral and psychological health.

The general part of the thesis includes an approach to the issue of anxiety and the characterization of the young school-age child and is structured in four chapters. In the first chapter are presented particularities of the young student from a physical, mental and social point of view. In the second chapter, the problem of the child's anxiety is treated both in terms of conceptual delimitations and in terms of the manifestation of anxiety in general and at the dentist. Chapter three presents the determinants of the child's anxiety at the dentist, and chapter four is dedicated to anxiety management, presentation of relaxation techniques and learning self-control.

The part of personal contributions includes five prospective studies that address different aspects of a child's anxiety at the dentist. The first study included 115 children of different ethnicities aged between 8 and 9 years old. It started with the application of two questionnaires, through which data were collected regarding the perception of the dental act. Two questionnaires were applied to track the accuracy of the answers. In order to highlight the differences in the perception of the dental act in Romanian, Hungarian and Roma children, the study started from the hypothesis that the child's anxiety at the dentist can be influenced by ethnicity, culture and socio-economic status of the family of origin. The results showed that the majority of Romanian and Hungarian children went to the dentist (92.5% and 91.67%), and of the Roma children only 48.72% ($p<0.0001$). Out of the interviewed children, 32.5% of Romanian children, 38.89% of Hungarian children and 71.79% of Roma children show fear of injection ($p=0.001$).

The second study was conducted on a group of 389 children aged 6 to 9 years old. In order to assess the prevalence of dental anxiety, the ACDAS score was used and saliva was collected to determine cortisol level. The correlation between these two variables was evaluated. The prevalence of dental anxiety for the whole group, based on ACDAS scores, was 43.7% (25.2% girls and 18.5% boys). Salivary cortisol levels expressed as median and interquartile range (IQR) were 1.251 (0.916-1.621) for anxious children and 1.091 (0.907-1.316) for non-anxious children ($p<0.001$). The degree of association between the two variables (ACDAS score and salivary cortisol level) was assessed using the Spearman correlation, with $r=0.411$ (CI: 0.323-0.493) and was interpreted as a statistically significant moderate correlation ($p<0.001$).

In the third study, three questionnaires were used (two for children and one for parents). The group consisted of 62 children aged between 6 and 8 years old and 54 parents. The aim of this study was to identify the similarities and differences between the anxiety at the dentist of parents and children. The responses of parents and children in grades I and II showed that the percentage of parents who went to the dentist for pain as a child is higher than that of children (58.82% compared to 38.89% in 1st grade, and in 2nd grade 54.55% compared to 36.36%). There were statistically significant differences between children and parents in terms of fear of injection. In 1st grade the percentage of those who are afraid of injection was 69.57% in the case of children and 35.29% in the case of parents ($p=0.03$), and in 2nd grade 75% of children and 45.45% of parents expressed this fear ($p=0.04$).

The fourth study included 63 children aged 6 to 10 years old. The ACDAS scale was used to assess dental anxiety, and the values obtained were correlated with the oral health of the children, using the DMFT index. From the studied group, 27 children (48.21%) were under the cut-off point of anxiety, 29 children (51.78%) were considered anxious, and 7 were excluded because they presented incomplete data. The prevalence of dental caries in the study group was 69%, with a mean and standard deviation for the DMFT index of 1.76 ± 1.54 . The DMFT values and ACDAS scores were compared, and it was shown that there is no correlation between dental caries and the level of dental anxiety. However, there was a statistically significant negative association between the value of filled teeth (component F) and the level of child's anxiety. This shows that those children with more filled teeth had a lower level of dental anxiety.

The fifth study was conducted on a group of 196 children aged 6 to 11 years old, who were divided into two groups (experimental and control). A questionnaire was applied and saliva was taken to determine immunoglobulin A, both at the beginning and at the end of the study. It started from the hypothesis that the development of an educational program can lead to a decrease in the level of dental anxiety among children. Within the experimental group, the percentage of children who are afraid of medical equipment decreased (from 64.21% to 23.16%, $p=0.0001$). Also, when asked about the fear of injection, the percentage of children who show fear decreased (70.53% compared to 21.05%, $p=0.0001$). At the end of the educational program, the number of children who declared that they no longer had dental problems increased by 20% ($p=0.007$). The final levels of immunoglobulin A in the experimental group showed statistically significant differences from the initial ones, as a result of the development of the educational program ($p=0.0001$). There were no statistically significant differences in the control group.

In conclusion, it was shown that the oral health of the child is influenced by ethnicity, parental model and socio-economic level of the family. When it is low, parents tend not to go to the dentist even in case of pain.

There was a high prevalence of dental anxiety in children aged 6 to 9 years old, which may be important in choosing how to approach the child patient. It has been shown that there is an association between dental anxiety quantified on the basis of the ACDAS scale and the level of salivary cortisol. Anxious children had higher salivary cortisol levels compared to non-anxious children.

The frequency of treatments, as well as experience with dental team members influence the child's anxiety at the dentist. Children with more fillings proved to be less anxious.

The analysis of the responses of both children and parents found that the percentage of adults who went to the dentist during childhood more for pain is higher than that of children.

Both the results of the immunoglobulin A salivary biomarker and the children's responses to the questionnaire showed that the fear of the medical equipment and the injection decreased. The children's perception from the experimental group on the dental act was improved following the development of the educational program.