

REVIEW

From Prof. dr. Maria Petrova Kukleva-Todorova, DMD, PhD, DSc

member of the Scientific Jury on the basis of Order P-109-239 dated 13.04.2023 of the Rector of the Medical University - Varna.

To: Dissertation for the award of the educational and scientific degree "Doctor" in the scientific specialty "Pediatric Dentistry", field of higher education 7. Health care and sports, professional direction 7.2. Dental medicine

Author: dr. Siyana Georgieva Atanasova

Form of the dissertation: regular form of education, in the Department of Pediatric dentistry, FDM, MU-Varna

Topic: „Oral manifestations in children with autism and some syndromes“

Scientific supervisor: Prof. dr. Radosveta Stoyanova Andreeva-Borisova, DMD, PhD, DSc

General presentation of the procedure

The set of materials provided to me in paper and electronic flashdrive is in accordance with the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at the Medical University - Varna. According to Art. 32 of the Regulations for the implementation of ZRASRB and Order P-109-239 of 13.04.2023 of the Rector of the Medical University - Varna, at the first meeting of the Scientific Jury I was appointed to prepare a review as an external member of the Scientific Jury of the dissertation work on the topic "Oral manifestations in children with autism and some syndromes" according to the procedure for acquiring the educational and scientific degree "Doctor" of Dr. Siyana Georgieva Atanasova.

Brief biographical data of the doctoral student

Dr. Atanasova graduated as a Master of Dental Medicine in 2018 at the Faculty of Dental Medicine, Medical University - Varna. After successfully passing the exam, from 2018 until now she is an assistant in the Department of Pediatric Dentistry, Faculty of Dental Medicine, Medical University - Varna. She participates in the training of students in: Propaedeutics of Pediatric dentistry; Clinics of Pediatric Dentistry; Dental prophylaxis; in Bulgarian and English. In 2022, she acquired the specialty "Pediatric Dentistry". She speaks English. There are a total of 8 publications, of which 4 are related to the dissertation work. She is a member of BZS, NSLDDM, SUV, SMSPDLOA.

Relevance of the topic and of the goal and tasks

The motor and sensory coordination limitations of children with specific health needs make them unable to take care of themselves, therefore a specific approach and support is needed for both children and their parents. Impaired verbal and non-verbal communication and difficulties in adapting to the environment severely limit children's opportunities for cooperation. It is essential to reduce anxiety by building proper relationships between the dentist, the child patient and the parents for adequate implementation of dental prophylaxis and treatment. A number of studies have been conducted in the country in the fields of medicine, dentistry and pedagogy, the object of which are children with various specific health needs. However, the prevention and treatment of oral diseases in these children is a challenge. Additional studies are needed in order to upgrade the existing knowledge in accordance with the development of dental science and practice, therefore the dissertation work of Dr. Siyana Atanasova is relevant and useful.

Familiarity with the problem

Dr. Atanasova has in-depth knowledge of children with specific health needs and the problems related to the prevention and treatment of oral diseases in them. This is confirmed by the literary overview, which includes 399 titles, of which 33 are in Cyrillic and 366 are in Latin. Bulgarian studies related to the topic of the dissertation are correctly cited. The extensive review analyzes and evaluates the data from the scientific literature in detail, emphasizing the unresolved issues. A good knowledge of the problem and a thorough analysis of data from the literature enable a clear and accurate formulation of the purpose and tasks of the dissertation work, and are the basis for a comparative analysis of the results of one's own studies with the studies of other authors.

Characterization and evaluation of the dissertation work

The dissertation is properly structured and well illustrated. It contains all the necessary sections, in accordance with the requirements: introduction, literature review, aim and objectives, material and methods, results and discussion, conclusions, contributions, clinical perspectives, conclusions, bibliography and appendices. It is presented on 178 standard pages, illustrated with 37 tables, 26 graphs, 15 figures and 6 appendices. The dissertation work has been discussed and directed for defense to the departmental council of the Department of "Pediatric Dentistry" at the Faculty of Dental Medicine, Medical University - Varna, where the doctoral student works on 28.02.2023.

The literature review is analytical, sufficient in volume and proves the doctoral student's in-depth knowledge of the topic of the dissertation work. The goal is precisely formulated, the fulfillment of the set tasks gives grounds for achieving the goal. Modern clinical, sociological and statistical methods were used to perform the tasks.

The aim of the dissertation is to investigate the oral status of children with autism and some syndromes, and the treatment-prophylactic approach to these children. In fulfillment of the goal, four tasks are set for implementation. Four hypotheses are also formulated.

In the "Materials and methods" section, the clinical, sociological and statistical research methods used to solve the set tasks are described, as well as the inclusion and exclusion criteria

for determining the object and units of observation. The description is tangible and specific.

In the "Results and discussion" section, the results of the studies related to solving the individual tasks are presented. The object of observation are 240 children aged 3-18 years from the Varna region, who came to the University Medical and Dental Center of FDM-Varna for examination or treatment. Selection was made through strict inclusion and exclusion criteria. The children are divided into four groups.

- 60 children with autism spectrum disorders (19 girls and 41 boys)
- 60 children with Down syndrome (33 girls and 27 boys)
- 60 children with Silver-Russell syndrome (31 girls and 29 boys) participating in a growth hormone treatment program.
- 60 healthy children (36 girls and 24 boys) for control group.

The object of observation in the sociological research are:

- 180 parents
- 60 dentists

Questionnaires have been developed to study the awareness of parents and dentists.

The volume of studies is sufficient and provides grounds for objective results and statistically significant conclusions. The collection of primary information and data analysis were carried out by the dissertation student in collaboration with his supervisor. The software SPSS version 20.0 was used for statistical processing of the data. A 95% confidence interval / $p < 0.05$ / was chosen for the level of significance of the null hypothesis.

Based on the analysis of the results of the clinical and sociological research, protocols for the prevention and treatment of children with autism and some syndromes have been drawn up, through which the existing ones are upgraded and modernized. Informative and motivational materials have been prepared for patients and their parents regarding nutrition, oral hygiene, fluoride prophylaxis and dental office visits. Materials have also been created that aim to help dental doctors to successfully conduct prophylaxis and treatment of these patients in outpatient settings.

The obtained results show:

- significantly higher DMFT index scores in children with autism compared to the other two groups and the control group;
- fluoride prophylaxis is poorly represented in all studied groups;
- the plaque index in all studied groups shows similar high values;
- the highest values of the gingival index were measured in the group of children with Down syndrome;
- children with Down syndrome have a severe periodontal status with bone loss, which does not always correspond to the level of dental plaque;

- the children in the studied groups with specific needs have a significantly higher degree of orthodontic anomalies, compared to the control group;
- cases of hypodontia are often observed in children with Down syndrome, the lateral incisors and second premolars are usually affected;
- orthodontic status shows the highest prevalence of Angle Class II in children with Silver-Russell syndrome, and Angle Class III in children with Down syndrome;
- despite parents' motivation for dental treatment and prevention, the registered results show a high prevalence of oral diseases in children with autism and some syndromes;
- regardless of their knowledge, dentists feel uncertain about treating these patients and want additional information;
- parents define their awareness as extremely insufficient;
- due to the lack of adequate information, these children do not receive the necessary oral health care;
- collaboration between treating doctors and dentists is necessary in order to carry out effective oral prophylaxis and treatment for children with autism and some syndromes.

The methods used enable the fulfillment of the set goals and tasks, and the selected statistical methods guarantee the reliability of the results. The results are very well presented and precisely illustrated. The volume of studies and the methods used give grounds for accepting the credibility of the conclusions drawn.

Contributions and significance of the dissertation for science and practice

The presented dissertation work is a comprehensive study dedicated to the problems related to the study of oral status, prevention and treatment in children with autism and some syndromes. Through her research, Dr. Atanasova focuses attention on an important topic in pediatric dentistry. A handbook for parents to maintain the oral health and care of the teeth of children with autism and some syndromes is proposed, with which it is possible to improve the quality of life of these children.

The contributions of the dissertation work are relevant and focused on practice. I acknowledge the formulated contributions of an original and confirmatory nature. The creation of updated protocols for prevention and treatment in ambulatory settings and informative motivational materials on nutrition and oral hygiene have a confirmatory contribution of an applied nature. The results of the studies related to the prevalence of dental caries, oral hygiene, the state of the gingiva and periodontium, the awareness of parents and dental doctors are also of a confirmatory nature.

The following contributions are original for the country:

- for the first time in our country, orthodontic status and dental anomalies in children with autism and some syndromes are examined;

- for the first time in our country, oral health including intensity of dental caries, level of oral hygiene, gingival inflammation and periodontal status in children with Silver-Russell syndrome was investigated.

In general, the dissertation work contributes to updating and upgrading knowledge about the prevention and treatment of oral diseases in children with specific health needs.

Personal participation of the doctoral student

The dissertation was developed entirely by the doctoral student under the guidance of the supervisor. The collection of information and analysis of literary data, the overall activity of conducting research, processing and analyzing data, formulating conclusions, conclusions and contributions, as well as finalizing the dissertation work are the personal work of the doctoral student. This is confirmed by the attached list of realized publications.

Popularization of the results

Dr. Atanasova has presented a list including 4 scientific articles related to the dissertation work, in 3 of which she is the lead author. The publications objectively reflect the results of the dissertation work. A significant part of the research has not yet been reflected in publications and participation in scientific forums, which is obviously in the future.

Abstract

The abstract is properly structured, qualitatively produced and in a summarized form adequately conveys the content of the dissertation work. Meets all requirements for a dissertation abstract.

Critical remarks and recommendations

I have no critical comments on the dissertation submitted to me for review. I recommend Dr. Atanasova to get involved in a suitable way in the continuous training of Bulgarian doctors in dental medicine in order to popularize more widely the results of the dissertation work and to stimulate their implementation in practice.

CONCLUSION

The presented dissertation work is up-to-date, executed precisely, has scientific and applied contributions and is the personal work of the doctoral student. It meets all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria ZRASRB), the Regulations for the Application of ZRASRB and the Rules of the MU-Varna.

Through this work, Dr. Atanasova proves that she has in-depth professional knowledge, can plan and conduct scientific research, analyze and interpret the obtained results and make them available for application.

I confidently declare my positive assessment of the dissertation work on the topic "Oral manifestations in children with autism and some syndromes" and recommend to the respected Scientific Jury to award the educational and scientific degree "Doctor" in the doctoral program "Pediatric Dentistry" to Dr. Siyana Georgieva Atanasova, PhD student at the Department of Pediatric Dentistry at the Faculty of Dentistry, Medical University - Varna.

03.05. 2023
Plovdiv

Author of the review:
/Prof. dr. Maria Kukleva, DMD, PhD, DSc/

