

# Increasing the efficiency of dental disease prevention in children of younger school age through participation in a stomatological performance

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## ABSTRACT

**Aim:** To study the awareness of children and their parents in the prevention of dental diseases and to propose educational measures to increase it.

**Materials and Methods:** To achieve the goal of the study, a survey of 628 children, aged 7-11 years, younger schoolchildren of Poltava and 479 of their parents was conducted using the previously developed "Dental Questionnaire for Children and Parents". The questionnaire was based on the main indicators of the dental health of children and adolescents in accordance with the EGOHID II project (2008) and the WHO dental questionnaire (2013), and it took into account the proposals of dental organizations that regulate the assessment of oral health in children. Based on the results of the survey, a script for oral hygiene lesson for junior schoolchildren was developed using theatrical and game elements.

**Results:** The results of the conducted research indicate the low sanitary and hygienic awareness of parents, the paternalism of their thinking, which leads to the lack of control over the hygiene of the oral cavity of children. In order to solve this problem, a scenario of informational explanatory conversation was created with the involvement of modern methods of communication and intern doctors who have acquired relevant knowledge and communication skills.

**Conclusions:** Informing of children about the prevention of dental diseases in the form of a dental performance is a relevant sanitary and educational event that motivates children to observe the rules of oral hygiene.

**KEY WORDS:** children, caries, prevention of dental diseases, oral hygiene

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## INTRODUCTION

Modern demands of society for education activate the need for improvement of learning technologies in higher educational institutions, including medical ones. The influence of integration processes strengthens the connection of different branches of science and practice, which positively affects the quality of training of specialists. The training of a pediatric dentist at the post-graduate stage involves the integration of dentistry, pediatrics and pedagogical science. After all, the competitiveness of specialists in the modern labor market, which is quite tough and demanding, largely depends on the level of their professional training, experience of practical work, and level of communication. It is common knowledge that the formation of a system of knowledge, abilities and skills is carried out gradually: step by step, from easy to complex.

Providing high-quality dental care to children is an extremely relevant issue today, which depends equally on the clinical knowledge and practical skills of the dentist, as well as on the ability to exert a positive

psychological influence on the child. A very important component during a dental appointment is the presence of psychological interaction with the child, therefore, at the post-graduate stage of training in the "Pediatric Dentistry" cycle, when teaching the material, these aspects are given considerable attention.

The main task in the professional activity of a children's dentist is the ability to convey knowledge about oral hygiene among broad segments of the population. That is why intern doctors of the department improve their skills in conducting sanitary and educational work, as one of the links of primary prevention of dental diseases in children.

Interns take part in the preparation and implementation of dental sanitary and educational projects in preschool and school educational institutions. Protection of children's rights to health care and health promotion is an integral field of activity that closely connects the interests of doctors, including children's dentists, teachers, psychologists, parents and the entire community as a whole. Over the last decade, there has

been an increase in the number of children with health abnormalities – these are children who are often and for a long time sick and those who have chronic somatic pathology. As they grow older, the number of practically healthy children decreases significantly, but the number of children with diseases of the oral cavity increases. However, the problem of dental health of children can't be solved only by the efforts of children's dentists without integration with teachers [1]. Therefore, it is advisable to use educational technologies that allows preserving children's health and forming a positive attitude towards a healthy lifestyle [2].

The dental health of children of primary school age is the main component in the formation of the dental health of the child as a whole, therefore a comprehensive approach from dentists, pediatricians, teachers, psychologists and parents is necessary to preserve and strengthen health. The implementation of technologies [3] aimed at preserving health, in practice, takes place consistently in close contact with all specialists.

One of the main principles for the formation of hygienic skills and habits in children is the achievement of a positive attitude to treatment. In order for a child, and in the future, an adult to visit the dentist regularly for the purpose of preventive and curative care, it is necessary to have a stable, formed positive relationship.

## AIM

The aim of the work is to study the awareness of children and their parents in the prevention of dental diseases and to propose educational measures to increase it.

## MATERIALS AND METHODS

A survey of 628 children, aged 7-11 years, younger schoolchildren of Poltava and 479 of their parents was conducted using the previously developed "Dental Questionnaire for Children and Parents" [4]. The questionnaire was based on the main indicators of the dental health of children and adolescents in accordance with the EGO-HID II project (2008) and the WHO dental questionnaire (2013), and it took into account the proposals of dental organizations that regulate the assessment of oral health in children [5,6]. Based on the results of the survey, a script for oral hygiene lesson for junior schoolchildren was developed using theatrical and game elements.

## RESULTS

Based on the results of the survey, we found out that only about 70% of the interviewed children brush their teeth every day, and less than half of them do it twice a

day (33.5%). 85.03% of the interviewed children noted that they brush their teeth independently without the help of adults. In turn, 89.14% of parents answered positively to the question of whether the child brushes his teeth independently, and only 27.6% of parents controlled the brushing process. Most parents do not understand the need to control and help a child of primary school age in the process of hygienic care of the oral cavity.

Only a third of children with parents (29.02%) visited the dentist for a routine check-up, in 36.5% of cases it was pain and problems with teeth and gums, and 34.45% of parents accompanied the child to repeat treatment.

According to the results of our survey, the majority of parents (63.5%) are afraid to visit a dentist. It is most likely that they pass their fear on to their children, as 47.5% of parents note that their children are afraid of the dentist.

Parents consider the Internet to be the main source of knowledge about oral hygiene (72% of respondents), and it is a great pity that only 15.9% of parents consider educational programs in schools informative.

The data obtained as a result of this and our previous study indicate of low sanitary and hygienic awareness of parents, paternalism of their thinking, which leads to the lack of control over oral hygiene of children [7]. A successful solution to this problem is possible only by carrying out information and explanatory activities with the involvement of modern methods of communication and the participation of people who have already undergone appropriate training. Sanitary and educational work should be organized mostly informally with the involvement of modern methods of communication and information technologies in the form of live communication between those who teach and those who study, with the opportunity for the latter to ask questions and receive answers. The material to be mastered should be modern, structured, understandable and presented taking into account the age of the audience.

Based on the results of the questionnaire, we made a decision to strengthen sanitary and educational work aimed at reducing children's wariness of visiting the dentist and improving their knowledge about oral hygiene and healthy eating habits, as well as bringing knowledge about dental hygiene to parents and encouraging them to more responsibility for the health of their children's teeth.

For a long time, the lecturers of the department, together with intern doctors, worked on the implementation of measures for the primary prevention of dental caries among children of primary school age. The forms and methods of primary prevention that we implemented are diverse, and included both individual and group measures to teach children about hygienic dental care.

The main task of the doctor, which is also a test of his professional skills, is to find an opportunity to cooperate with each child in order to achieve mutual understanding.

In order to bring the doctor closer to the child, relieve the tension before dental treatment, and convey to them the knowledge of hygiene in a playful way, we created a "dental" performance, for which the lecturers and interns wrote the screenplay, selected music, and video materials about the tools hygiene and staging. The participants-actors in it are both intern doctors and the youngest schoolchildren who are involved during the action. The main positive characters of the play are dental saviors, whose role is performed by intern doctors. With the help of pre-created small videos, they demonstrate positive practices to the audience – food products, hygiene products, and rules for their use that are useful for healthy teeth. The practical part of the lesson with the children was conducted in the form of a hygiene lesson with a demonstration of the structure of the tooth, "carious monsters" that destroy teeth, hygiene products and practice on jaw models of the most optimal methods of brushing teeth. Schoolchildren are involved in the action by answering quiz questions about food products that are useful and dangerous for teeth, and repeating the correct manipulations when brushing teeth with a toothbrush on a model of jaws. It is important to interest children and involve each of them in participating in the practical component of the event, as well as to arouse interest and desire to repeat hygienic manipulations on their own.

Theatrical hygiene lesson is interesting, first of all, because it brings a holiday atmosphere, joyful feelings into the lives of younger schoolchildren, and allows children to show their initiative and communication skills. The main means of development of the motivational sphere in children of primary school age is play, therefore, such a psychological feature of children as inquisitiveness was used for hygienic education.

Control over the assimilation of the demonstrated material rests on educators and parents, because one of the important mechanisms of the influence of others on the child is a living example and stimulation for imitation [8, 9]. Therefore, the staff of the department prepared reminders and booklets for schoolchildren, educators and parents, from which each of them can get comprehensive information on dental health issues in children. So, we have offered parents the reminders «What parents need to know about children's teeth» and «The need for regular visits to the dentist by a child», in which the main important knowledge for parents about the development of the children's dental and jaw system, the need for regular dental care are presented in a concise form and hygiene algorithms. The note «A child's first visit to

the dentist» emphasizes the attention of parents on the stages of psychological preparation of a child to visit a dentist, describes the scenario of the most optimal first dental appointment. The attractions are illustrated with attractive photos, diagrams, and contain interesting information. Theatrical play "Dental Hygiene Lesson" aroused the interest of children, their parents and educators and became an excellent incentive for motivation to hygienic dental care, contributed to the formation of a positive image of the dentist as a friend and assistant.

## DISCUSSION

According to many researchers, sanitary and educational work in organized children's groups should be a priority for children's dentists. Active educational events for children with the involvement of intern doctors, who through communication with schoolchildren deepen not only their professional knowledge, but also gain experience of speaking in front of an audience, learn to reasonedly answer questions, and motivate them to have the right attitude to dental health are particularly relevant [10].

In our opinion, sanitary and educational work in the form of hygiene lessons helps in the formation of a healthy lifestyle, provides children with a cognitive opportunity to consciously exclude risk factors and maintain a level of health, which subsequently leads to a decrease in the increase in the intensity of dental caries in children of this age group.

When conducting dental training, it is necessary to achieve regular and systematic activities for the formation of permanent oral hygiene skills and awareness of the importance of caring for one's dental health in a child [11].

Active familiarization of parents of children of primary school age with the rules of care for the oral cavity of children and about the methods of prevention of dental diseases play great role in reducing of the prevalence of early childhood caries [12]. For the successful involvement of parents in the care of children's oral cavity, printed informational materials play a significant role – reminders that provide information on the main aspects of dental hygiene in a concise form.

The creative approach to conducting of the hygiene lessons in schools in the form of a kind of dental performance aroused great interest among intern doctors in expanding their knowledge on the prevention of dental diseases, stimulated and supported the need for serious creative efforts with a creative search for non-traditional, alternative methods of forming a positive attitude to prevention in children.

Innovative projects and methods activate the mental activity of medical interns, develop their creativity, improve skills to find non-standard ways of solving dental problems,

develop communication and psychological abilities, promote mutual communication and cooperation in the team. In this manner, future dentists have the opportunity to learn in practice how to implement the dental component of health-preserving technologies in close cooperation with educators, pediatricians and parents.

## CONCLUSIONS

The method of conveying knowledge about the prevention of dental diseases to younger schoolchildren in the form of a dental performance is a relevant sanitary and educational event that motivates children to observe the rules of oral hygiene.

## REFERENCES

1. Sheshukova OV, Trufanova VP, Kazakova KS, Polishchuk TV. Hrupova dyskusiiia interaktyvna forma navchannia likariv-stomatolohiv dytiachykh [Group discussion is an interactive form of training for children's dentists]. *Materialy navchalno-naukovoii konferentsii z mizhnarodnoiu uchastiu «Osnovni napriamky udoskonalennia pidhotovky medychnykh kadrov u suchasnykh umovakh»*. Poltava. 2015, pp.268-270. (Ukrainian)
2. Sheshukova OV, Polishchuk TV, Kostenko VG et al. Consideration of childhood psychological factors at dental appointment. *Wiad lek.* 2018;71(7):1305–09.
3. Dychkivska IM. Innovatsiini pedahohichni tekhnolohii [Innovative pedagogical technologies]. K.:Akademvydav. 2004, p.218. (Ukrainian)
4. Kuz IO. Analiz vzaiemozviazkiv povedinkovykh zvychoh ta stanu parodontu i hihiieny porozhnyny rota u ditei molodshoho shkilnoho viku z tsukrovym diabetom I typu ta yikh batkiv za rezultatamy vykorystannia stomatolohichnoho opytuvalnyka [Analysis of the relationship between behavioral habits and the state of the periodontium and oral hygiene in primary school-age children with type I diabetes and their parents based on the results of using a dental questionnaire]. *Aktualni problemy suchasnoi medytsyny: Visnyk UMSA.* 2021;1(73):71-5. doi: 10.31718/2077-1096.21.1.71. (Ukrainian) [DOI](#)
5. Righolt AJ, Sidorenko G, Faggion CM Jr et al. Quality measures for dental care: A systematic review. *Community Dent Oral Epidemiol.* 2019;47(1):12-23.
6. Bencze Z, Kovalecz G, Márton S et al. Childhood caries management in the European Union: A cross-sectional study. *Heliyon.* 2021;7(2):06198.
7. Lyakhova NA, Filatova VL, Sheshukova OV et al. Studying and analyze the factors that affect compliance dentist recommendations from parents of child patients *Wiad Lek.* 2020;73(8):1730–1734.
8. Holovanova IA, Lyakhova NA, Sheshukova OV et al. Studying the skills attitudes on factors affecting dental health of children. *Wiad lek.* 2018;71(3):640–47.
9. Diachenko YuL. Do problemy sotsialnoho blahopoluchchia rodyny yak nevidiemnoi skladovoi yakosti zhyttia ditei doshkilnoho ta molodshoho shkilnoho viku [To the problem of social well-being of the family as an integral component of the quality of life of children of preschool and primary school age]. *Pedahohichni nauky: teoriia, istoriia, innovatsiini tekhnolohii.* 2015;6(50):48-53. (Ukrainian)
10. Pavlenkova O, Kaskova L. Osoblyvosti sanitarno-osvitnoi roboty dlia profilaktyky stomatolohichnykh khvorob u ditei orhanizovanykh dytiachykh kolektyviv [Peculiarities of sanitary and educational work for the prevention of dental diseases in children of organized children's groups]. *Aktualni problemy suchasnoi medytsyny: Visnyk Ukrainskoi medychnoi stomatolohichnoi akademii.* 2020;20(2):232-235. doi:10.31718/2077-1096.20.2.232. (Ukrainian) [DOI](#)
11. Yakymets MM. Urok stomatolohichnoho zdorovia» yak skladova hihiienichnoho navchannia ta vykhovannia ditei shkilnoho viku [Dental health lesson" as a component of hygienic education and upbringing of school-age children]. *Visnyk problem biolohii i medytsyny.* 2015;2(119):267-270. (Ukrainian)
12. Shklyar KhV, Avdieiev OV. Rezultaty opytuvannia batkiv ditei molodshoho viku shchodo indyvidualnoi hihiieny porozhnyny rota [Results of a survey of parents of younger children regarding individual oral hygiene]. *Klinichna stomatolohiia.* 2023;1:30-35. (Ukrainian)

## CONFLICT OF INTEREST

The Authors declare no conflict of interest

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