

OPTIMIZATION OF CARIES PREVENTION METHODS IN CHILDREN

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ANNOTATION

In modern society, diseases of the oral cavity are of humanitarian, socio - economic significance. Today, tooth decay and periodontal disease remain the most common dental disease not only among adults, but also among younger populations around the world. According to recent epidemiological studies conducted on healthy children, the incidence of dental pathology is high, with the prevalence of caries among healthy age groups 12-15 years old is 63.3-83 years, 4% and 81.7-88.7%, intensity 3.02 -3.75 and 4.6-5.73, and the prevalence of periodontal tissue diseases in the group of healthy 12-year-old children ranged from 37.8% to 50%, in the 15-year-old group of children it ranged from 57.7% to 84, 7%. The prevalence of caries is also high in children with mental retardation of preschool and school age, while the intensity of caries is higher in children aged 13–18 years with mild mental retardation (MAD). These indicators increase with age and depend on the severity of the underlying disease.

We carried out a program for the prevention of dental diseases in children with disabilities, however, most of them were focused on children with mild and moderate mental retardation, where not only the degree of mental retardation was taken into account, but also teaching them oral care skills, the degree of socialization and the child's diet.

PURPOSE OF THE STUDY: Increasing the effectiveness of the provision of therapeutic and prophylactic dental care to children with mental retardation through the introduction of a program for the prevention of dental diseases, taking into account their limited opportunities in the Samarkand region.

RESEARCH OBJECTIVES:

1. To study the actual state of the organization of dental care for children with mental retardation living in orphanages in the Samarkand region.
2. To study the level of dental morbidity in children with mental retardation living in boarding schools and to identify its dependence on some external factors (Samarkand region).
3. Conduct a microbiological study of dental plaque to assess the risk of developing dental diseases in mentally retarded children.
4. To analyze the dynamics of the intensity of caries within 3 years in mentally retarded children suffering from Down syndrome
5. To develop and implement a program for the prevention of dental diseases for mentally retarded children living in an orphanage, taking into account their disabilities, using a differentiated approach to teaching oral hygiene.

MATERIAL AND RESEARCH METHODS. This study is carried out in a specialized boarding school No. 62 for children with mental retardation located in the city of Samarkand, including between 6, 9 and 12 year olds from boarding schools. Depending on the age, gender, diet, type of major neurological diseases, the presence

of Down syndrome and the degree of socialization of children taken in the study, it is planned to study the hygienic state of a special program used for a certain period of time aimed at preventing dental diseases, their level is determined efficiency. In the groups of 6, 12 and 15-year-old children, the distribution was carried out as follows: subgroup 1 (socialized children + conditionally free food) included 15, 20 and 25 children of 6, 12 and 15 years, respectively; to subgroup 2 (non-socialized children + regulated meals) - 15, 30 and 25 children 6, 12 and 15 years old, respectively (table - 1).

Age	Prevalence of caries (%)			
	1p	1pd	2p	2pd
6	33,0	0,0	0,0	0
12	64,0	20,0	17,0	0
15	85,0	33,0	22,0	0

Note:*
1n - socialized children + conditionally free food;
2p - non-socialized children + regulated meals.

Indicators of the prevalence of dental caries in subgroups of 6, 12 and 15-year-old mentally retarded children (table-1)

The following indicators were evaluated:

- the prevalence of caries;
- intensity of caries of permanent teeth according to the KPU index;
- the clinical condition of the periodontal tissues was assessed by the PMA index in the Parma modification.
- hygienic state of the mouth (using the simplified IGR-U hygiene index according to Green - Vermillion). (tab.-2)

Indicators of the severity of gingivitis (PMA) in subgroups of mentally retarded children with different socialization (table-2)

Age (years old)	Subgroup	PMA	p
6	1p	5,0 [0,0;12]	0,004—
	2p	27 [4,0;33]	
12	1p	25,5 [9,0;35,8]	0,002—
	2p	48,5 [26;67,8]	
15	1p	25,0 [6,8;36,3]	0,005—
	2p	42,0 [25,8;65,3]	

Note:
1p - Socialized children + conditionally free food;
2p - Socialized children + regulated meals;
1pD - Socialized children + conditionally free food + s-m Down;
2pD - Socialized children + regulated meals + s-m Down

To assess the risk of developing dental diseases, a microbiological study of dental plaque was carried out, for which 26 children from subgroup 1 were randomly selected and 24 people from subgroup 2. To conduct a microbiological study, supragingival plaque was collected by scraping with a sterile excavator.

The prevention program included teaching children oral hygiene and health education with the staff of the institution and the parents of some of the inmates who attended the boarding school. Individual prevention methods were also carried out:

Professional cavity hygiene

Demineralizing therapy - application of fluoride-containing varnish to teeth;

Fissure sealing of permanent teeth.

Results:

It is known from the literature that children with Down syndrome are less at risk of developing dental caries, therefore, within subgroups with different socialization, a division was made taking into account the presence of this syndrome. Thus, within the subgroups of 6, 12, and 15-year-old socialized children, children without Down's syndrome were identified — 10, 32, and 40 children, respectively, and children with this syndrome — 12, 8, and 5 children, respectively. Among 6, 12, and 15-year-old non-socialized children, subgroups of children without Down syndrome were also identified — 11, 30 and 15 children, respectively, and children with Down syndrome — 4, 6 and 13 children, respectively. In these subgroups, the prevalence and intensity of caries were assessed.

To assess the risk of developing dental diseases, a microbiological study of dental plaque was carried out, for which 23 children from subgroup 1 were randomly selected and from subgroup 2 - 21 people. To conduct a microbiological study, dental supragingival plaque was collected by scraping with a sterile excavator No. 2.

The third stage of our research was the development, implementation and evaluation of the effectiveness of a program for the prevention of dental diseases adapted for mentally retarded children in conditions of preschool education.

The prevention program included teaching children oral hygiene and health education with the staff of the institution and the parents of some of the inmates who attended the boarding school. Also, individual methods of prevention were carried out: professional hygiene, application of fluoride-containing varnish to teeth, sealing of fissures.

The effectiveness of the implemented adapted prophylaxis program, which takes into account the medical, psychological and pedagogical characteristics of children, was assessed by the hygiene index (IGR-U) and the state of periodontal tissues (PMA index) initially, 1.2.3 years after the start of training.

The data obtained from 9 and 12-year-old children, before the implementation of the program, served as internal control for groups of children who entered the prevention program at the age of 6-8 and 9-11 years. At the same time, the group of 9-year-old children is a comparison group for the other groups of 9-year-olds and becomes the main one three years later after these children reach the age of 12. For children who entered the prevention program at the age of 12, 15-year-olds, previously examined children served as a control group.

The prevalence and intensity of dental caries in mentally retarded children depended on socialization, which determines the lifestyle and diet, as well as on the presence of Down syndrome.

The incidence of dental caries in mentally retarded children living in boarding schools depends on their socialization, which determines some of the characteristics of their lifestyle and nutrition. The risk group is made up of socialized children without Down syndrome: the prevalence of caries was 31.0, 62.0 and 83.0% with an intensity of 0 [0; 1.17], 2 [0; 4], 4 [3; 5] in 6, 12, 15-year-old children, respectively. In non-socialized children without Down syndrome, the prevalence of caries was low - 0, 18.0 and 22.5% in 6, 12 and 15-year-old children, respectively, and children with Down syndrome had no dental caries. In socialized children, mild gingivitis prevailed (55, 50 and 50% among 6, 12 and 15-year-old children, respectively), in non-socialized children, moderate gingivitis (47.1 and 41.6% in 6 and 15-year-old children, respectively) and severe (38.6% in 12-year-olds). 45 [26; 67.5]. The inability to self-sufficient oral care makes this group of children especially vulnerable to periodontal disease.

Conclusions:

A differentiated approach to teaching oral hygiene, based on the possibility of developing self-care skills in mentally retarded children, taking into account their mental and physical capabilities, can significantly improve oral hygiene and the condition of periodontal tissues. In the 1st training group, the PMA index decreased from 15% [0; 25.6] to 0% [0; 2.6], in group II - from 14% [0; 29] to 0% [0; 4], in group III with 35% [15.1; 64.5] to 6% [0; eleven]. The prevalence of children with healthy periodontal disease increased from 19% to 56.5%.

Over the three years of the implementation of the prevention program, the decrease in the increase in the hygiene index was 71.0% in the I training group (self-care and supervision of personnel), 65.7% in the II training group (self-care and assistance of personnel) and 70.0% in the III group. (Staff leaving). In 9, 12 and 15-year-old socialized children, the prevalence of caries after three years was 13.5, 43.4 and 63% at an intensity of 0 [0; 0], 0.5 [0; 4], 3 [0; 4, 5], respectively, which is lower than the control group (42.9, 60 and 76% at an intensity of 0 [0; 3.25], 3 [0; 4.5], 4 [1.5; 5], respectively).

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