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EXPERIENCE IN IMPLEMENTING CARIES PREVENTION PROGRAMS IN KINDERGARTENS

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Abstract: At the world level, the most convenient form of service for preschool children is the provision of dental preventive and curative care directly in preschool organizations. One of the global problems of public health in general and pediatric dentistry in particular, special attention is paid to the continuation of the study of the etiology, prevention and treatment of caries, both from the point of view of the theoretical justification of the main provisions of the modern paradigm of caries, and in relation to the practical application of scientific achievements.

Key words: preschoolers, tooth surface damage, caries growth, prevention, dental program.

Introduction. Already at an early age, carious lesions of the teeth are detected in many children, therefore it is important to identify the initial carious lesions in a timely manner [4, 12]. Early child hood caries (ECC) is characterized by the presence of one or more carious lesions, with or without the formation of a carious cavity, in children under the age of 6 years [1, 2]. Data on the prevalence and intensity of dental caries in children vary significantly in different countries and regions [8, 22]. According to an analysis of studies published over the past 5 years, Chenetal., 2019, determined that the prevalence of caries of temporary teeth in five-year-olds can be from 23% to 90%, and the intensity, according to the cpu, from 0.9 to 7.5. In most countries of the world, the prevalence of caries of temporary teeth exceeds 50% and is at a high level [11, 29, 35]. There is a global increase in the world's population and, accordingly, the number of people with caries and periodontal diseases is increasing, which increases the burden on the healthcare system. About 37% of carious lesions and up to 67% of severe forms of periodontitis remain untreated [2, 19, 31]. In this regard, the problem of prevention of major dental diseases is an urgent problem of modern medicine.

Identification of risk factors for the development of caries in a child is necessary to assess the individual risk of further development of caries [17, 33]. Various methods and indices have been developed to assess the risk of developing caries, but none of them has a high degree of reliability in predicting the formation of new carious lesions [7, 10, 23, 34]. At the same time, caries management based on risk assessment reduces the growth of caries [9, 15, 30].

Most researchers offer comprehensive programs for the prevention of dental caries in children. An important method of caries prevention is oral hygiene, which eliminates the etiological bacterial factor that causes the development of dental caries [12]. It is recommended to start hygienic dental care from the moment of eruption of the first tooth [3, 5]. There is a wide range of oral hygiene items and products for children [9, 27]. A barrier to the introduction of this direction is the lack of awareness of children and parents about the rules of oral hygiene [6, 12]. Many mothers start brushing their children's teeth more than

a year after teething, use an adult toothbrush and toothpaste for this, use too much toothpaste for each tooth brushing and do not understand the importance of fluorides contained in toothpaste [14, 24]. Within the framework of evidence-based medicine, fluorides have the highest level of confirmation of safety and effectiveness in the prevention of caries [6, 10, 11]. The use of systemic and local fluorides is approved by international, American and European dental associations, and is also justified in the WHO recommendations [4, 8]. Fluoride-containing toothpastes are currently recognized as the main means of individual prevention of dental caries [11, 25]. Fluoride varnish and other local fluoride preparations for professional use are highly effective [10, 32]. However, the level of practical use of fluorides for the prevention of caries remains insufficient (Naumova, 2014) [11, 16].

In the prevention of dental diseases, it is important to conduct sanitary and educational work in children's educational institutions about risk factors and ways to eliminate them, instilling habits of hygienic care and proper nutrition in children from an early age [9, 26]. A controlled brushing of teeth using fluoride toothpaste has a positive effect on the state of oral hygiene of preschoolers [12, 28]. The introduction of special programs of hygienic education and upbringing of preschoolers contributed to the reduction of the increase in caries of temporary teeth by 46.5% [2, 20].

The effectiveness of dental training programs for preschoolers is determined by indicators of improving children's dental knowledge [11, 21]. However, the ultimate goal of prevention is to reduce morbidity, so the results of educational programs should be determined by indicators of reducing the prevalence and intensity of caries and gingivitis [4, 5]. To assess the results of the prevention of dental caries, indicators of intensity reduction and reduction of the growth of dental caries and surface caries are used, comparing the results of the control and experimental groups or data from epidemiological studies in the dynamics of long-term observations [13].

When choosing a specific technology, method and means of treating caries in children, it is necessary to follow the basic recommendations and algorithms, take into account the data of clinical and X-ray examination [3, 7]. However, the advantage of any one method of caries treatment over others has not yet been proven [1]. In the last decade, minimally invasive approaches have been preferred in pediatric dentistry [9]. For noninvasive treatment of initial caries of temporary teeth in young children, the use of fluorides is recommended [5]. For the treatment of preschool children with a high risk of developing and high activity of caries, a combination of conservative and minimally invasive methods of caries treatment, the use of prevention courses, the use of thin-walled metal crowns after the treatment of pulpitis is proposed [10]. The method of atraumatic restoration therapy (ART) has found wide application in childhood [11]. When using ART, good behavior was noted in children, whereas with the traditional preparation of carious cavities using a drill, most children showed negative behavior [6]. The use of SRC with the addition of silver fluoride improved the results of filling carious cavities, compared with conventional SRC [5].

The results of treatment of caries of temporary teeth in children may depend on the quality of filling materials and many other factors: the localization of the carious cavity, the hygienic condition of the mouth and the general health of the child, the frequency of intake of sweet and sour foods and beverages, the use of fluoride toothpaste and the frequency of brushing teeth [2, 11].

A special algorithm for the treatment and prevention of caries of early caries of temporary teeth, taking into account a specific clinical situation, allows you to plan and effectively implement the appropriate amount of therapeutic and preventive measures [1].

Thus, various methods and means can be used for the prevention and treatment of dental caries in preschool children. However, there is no information in the available literature on the comparative

effectiveness of various dental caries prevention programs in preschoolers, which can be carried out in preschool institutions.

The purpose of the study: substantiation of a comprehensive program for the prevention and treatment of dental caries in preschool children by medical-sociological and clinical-economic analysis.

Methods and materials of the study. In total, 959 children participated in the study, including 320 children who lived in the city of Bukhara (pupils of 4 kindergartens), 319 children who lived in the Alat district of Bukhara region (pupils of 4 kindergartens) and 320 children who lived in the Karakul district of Bukhara region (pupils of 4 kindergartens). 4 programs for the prevention of dental caries in kindergarten students were carried out. Program No. 1 included a screening dental examination of children. Other programs, in addition to screening examination of children, additionally included various activities. Program No. 2 was aimed at involving parents in the prevention and timely treatment of dental caries in children. Program No. 3 assumed the formation of health-saving behavior in children. In Program No. 4, dentists carried out complex primary (application of fluoride varnish and sealing of fissures) and secondary prevention of caries (non-invasive and minimally invasive methods of caries treatment).

To determine the clinical effectiveness of prevention programs, a repeated dental examination of preschoolers was carried out after 7 months, which included determining the condition of temporary and erupted permanent teeth. As criteria of medical (clinical) effectiveness, the indicators of caries growth according to the cfr/cfrs (caries-filling-removal/caries-filling-removal-surface) indices and the structure of cfr/cfrs indices were used. The effectiveness of primary prevention of caries was determined by the indicators of the increase in dental caries and the increase in carious lesions of tooth surfaces. The increase in dental caries was determined as the difference between the values of the CFR (Caries-Filling-Removal) indices of teeth calculated according to the data of the first and second dental examinations of preschoolers who participated in prevention programs. The increase in carious lesions of the tooth surfaces was determined, respectively, as the difference between the values of the cfrs indices. The values of the increase in dental caries and the increase in carious lesions of the tooth surfaces after all programs were compared with each other. The program was considered the most effective, after which the increase in caries was the least. To assess the clinical effectiveness of secondary caries prevention, the structure of the cfr and cfrs indices was determined before and after the implementation of the considered prevention programs. The program was considered the most effective, after which the values of the "c /cf " indicators decreased the most and the values of the "r/rs " indicators increased in the structure of the cfr/cfrs indices.

The results of the study. The screening program (Program No. 1) included a dental examination of children and the transfer of directions to parents for the rehabilitation of children in a dental clinic. Repeated examination of the children revealed that an increase in carious lesions was observed in all age groups. The indicators of dental caries growth, according to the cfr index, were for 3-year-olds - 0.20±0.01, 4-year-olds -0.35±0.01, 5-year-olds - 0.33±0.01, 6-year-olds - 0.35±0.01, per 1 examined. The differences in the indicators of dental caries growth (according to CF) in children aged 4, 5 and 6 years, in relation to 3-year-olds, were statistically significant ($p<0.001$).

More accurately, the increase in caries reflects the cfrs index (shows the increase in caries of the surfaces of teeth). The values of the cfrs index, per 1 examined, were 0.92±0.03 in 3-year-olds, -1.11±0.03 in 4-year-olds, 1.30±0.03 in 5-year-olds, 3.00±0.08 in 6-year-olds. In 4, 5 and 6-year-olds, the values of the cfrs indices were significantly ($p<0.001$) is higher than in 3-year-olds. Thus, despite the physiological change of teeth and the loss of carious incisors in 5-6-year-old children, there was a 3.3-fold increase in the increase in carious lesions in children from 3 to 6 years old (according to the cfrs index).

The study of the structure of the CFR index in the dynamics of observation showed that most parents did not follow the recommendations of a dentist and did not take their children to a dental clinic for oral

sanitation. Despite some improvement in the situation at the second examination, compared with the data of the first examination, carious untreated teeth prevailed in all age groups of preschoolers. The share of untreated teeth in the structure of the CFR was, at the second examination, 83.39% in 3-year-olds, 77.62% in 4-year-olds, 70.48% in 5-year-olds, 59.63% in 6-year-olds, differences in indicators in 4, 5 and 6-year-olds, in relation to 3-year-olds, were statistically significant ($p<0.05$-0.001).

The number of cured filled teeth detected in preschoolers during the second examination, compared with the data of the first examination, increased slightly and amounted, in the structure of the CFR, in 3-year-olds only 12.70%, 4-year-olds - 18.70%, 5-year-olds - 23.11%, 6-year-olds - 27.16%. The differences between the age groups, in relation to 3-year-old children, were statistically significant ($p<0.05$-0.01). With age, from 3 to 6 years, the proportion of filled teeth in children increased by 2.1 times. However, the number of filled teeth in all age groups remained significantly less than carious teeth: in 3-year-olds - 6.6 times, 4-year-olds - 4.1 times, 5-year-olds - 3.1 times, 6-year-olds - 2.2 times.

The share of prematurely removed temporary teeth in 3 and 4-year-olds in the CFR structure was 3.91% and 3.68%, in 5-year-olds it reached 6.41%, 6-year-olds - 13.20%.

The data obtained indicate that children often turned to a dentist in the presence of acute pain, when significant tooth destruction was noted and it was impossible to preserve temporary teeth until their physiological change.

The analysis of the cfrs index structure showed similar results. In children of all age groups, carious lesions of the tooth surfaces prevailed during the first and second examinations, the number of tooth surfaces filled was significantly ($p<0.001$) less.

Thus, the application of Program No. 1 only slightly improved the dental status of preschoolers. The majority of children retained the growth of new carious lesions, most carious teeth remained untreated. The situation was especially unfavorable in children aged 3-4 years, in whom the proportion of untreated carious teeth, at the second examination, was about 80%.

Program No. 2 provided, in addition to screening the dental health of children, sanitary and educational work among parents of preschoolers on the prevention of dental diseases.

Dynamic observation of children revealed an increase in dental caries (according to the cfr index, per 1 examined) in all age groups: in 3-year-olds 0.43±0.02, 4-year-olds -0.10±0.01, 5-year-olds - 0.12±0.01, 6-year-olds -0.49±0.03. Significant differences in relation to In 3-year-old children, the growth of dental caries was determined in children aged 4 and 5 years ($p<0.01$).

The increase in carious lesions of tooth surfaces, according to the cfrs index, was significantly higher than according to the cfr index (in 3-year-olds by 1.3 times, 4-year-olds by 7.6 times, 5-year-olds by 6.9 times, 6-year-olds by 4.4 times), and was, respectively, 0.55 ±0.03, 0.76± 0.04, 0.83±0.04 and 2.17±0.11. In children aged 4, 5 and 6 years, differences in the value of caries growth, according to the cfrs index, in relation to 3-year-old children, were statistically significant ($p<0.001$).

There was an increase with age in the growth of carious lesions of the surfaces of teeth, according to the cfrs index, the values of which increased 3.9 times from 3 to 6 years, from 0.55± 0.03 to 2.17± 0.11, $p< 0.001$. In the structure of the cfr, during repeated examination, some improvements were noted in children, compared with the data of the first examination. In all age groups in the structure of the cfr index, the proportion of carious untreated teeth decreased significantly ($p<0.001$): in 3-year-olds - from 86.41% to 72.94%, in 4-year-olds - from 92.81% to 62.16%, 5-year-olds - from 83.03% to 52.64%, 6-year-olds -from 76.66% to 50.93%. The differences between the "c" indicators at the second examination, in relation to 3-year-old children, had statistical significance ($p<0.01$).

It should be noted that, despite the decrease in the "c" indicators in the structure of the cfr index, in children aged 3-4 years, most teeth still required treatment, and in children 5-6 years old, every second tooth affected by caries needed treatment.

According to the data of the second examination, compared with the first, the proportion of sealed teeth in the structure of preschool children of all age groups increased in the structure of the CFR: in 3-year-olds - 3.3 times, 4-year-olds - 2.2 times, 5-year-olds - 2.6 times, 6-year-olds - 2.3 times ($p<0.001$). The values of the indicator "f" in the structure of the cfr index were 17.30%, 34.23%, 42.07% and 39.66%, respectively, the differences in relation to 3-year-olds were statistically significant ($p<0.01$).

The share of removed teeth in the structure of the cfr index, compared with the first examination, increased in 3-year-olds from 8.24% to 9.76%, in 4-year-olds - from 0.62% to 3.60%, in 5-year-olds - from 0.92% to 5.29%, in 6-year-olds - from 6.19% to 9.41%. High indicators of "r" reflect the untimely appeal of children for help. As a result, irreversible changes develop in the milk teeth, requiring their removal.

Carious lesions of the surfaces of teeth also prevailed in the structure of kpup in preschoolers.

Thus, the application of Program No. 2 did not eliminate the increase in carious lesions in preschoolers. Not all parents followed the recommendations of dentists on oral sanitation in their children, especially at the age of 3-4 years. Most of the carious teeth in children aged 3-4 years remained untreated, and in 5-6-year-old children, half of the carious teeth remained untreated.

Program No.3 involved the involvement of kindergarten teachers in hygienic education and training of preschoolers on the prevention of caries. In addition, the dentist examined the children and issued a referral for treatment to a dental clinic, conducted classes with the parents of the children (by analogy with the previous program). The assessment was carried out according to the data of dental examination of children in the dynamics of observation. As a result, it was found that in all age groups of children there was a slight increase in dental caries, according to the cfr index.

According to the cfr index, the increase in dental caries, per 1 examined, was 0.09±0.01 in 3-year-olds, 0.03±0.01 in 4-year-olds, 0.01±0.01 in 5-year-olds, 0.05±0.01 in 6-year-olds. The largest increase in carious teeth was observed in 3-year-olds, the smallest in 5-year-olds. The differences between the rates of dental caries growth in preschoolers aged 4, 5 and 6 years, in relation to 3-year-old children, were statistically significant ($p<0.05$).

The increase in carious lesions, according to the cfrs index, was significantly higher than according to the cfr index, and was 0.34±0.04 in 3-year-olds, 0.63±0.05 in 4-year-olds, 0.93±0.06 in 5-year-olds, 1.48±0.09 in 6-year-olds. Differences in the values of cfrs indicators in children aged 4, 5 and 6 years, in relation to 3-year-old children, were statistically significant ($p<0.001$). The magnitude of the increase in carious lesions of the surfaces of teeth, according to the cfrs index, had a clear age dynamics, and in children from 3 to 6 years significantly increased by 4.3 times (from 0.34 ± 0.04 to 1.48± 0.09, $p<0.001$).

Significant improvements were noted in the structure of the cfr among preschoolers of all age groups. The proportion of carious untreated teeth decreased in 3-year-olds and 4-year-olds by 1.8 times, in 5-year-olds - by 2.1 times, in 6-year-olds - by 2.3 times ($p<0.001$). However, in 3-year-old and 4-year-old children, slightly more than half of carious teeth remained untreated (52.58% and 53.52%, respectively), and in 5-year-old and 6-year-old children - about 40% (42.42% and 39.36%, respectively). The number of cured sealed teeth increased significantly ($p<0.001$) and repeatedly in all age groups, in 3-year-olds - from 3.11% to 46.91%, 4-year-olds - from 4.98% to 46.18%, 5-year-olds - from 9.92% to 49.90%, 6-year-olds - from 10.09% up to 52.82% ($p<0.001$). However, in 3-5-year-olds, the "f" index in the cfr structure was less than 50%, and only in 6-year-olds it was slightly higher than 50%.

The proportion of prematurely removed temporary teeth did not exceed 1% at the first and second examinations in 3-year-olds and 4-year-olds. However, in 5-year-old and 6-year-old children, the number of premature extractions of temporary teeth detected during the second examination increased significantly ($p<0.05$) compared to the data of the first examination.

The values of the "r" index in the cfr structure increased in 5-year-olds from 1.01% to 7.68%, in 6-year-olds from 1.09% to 7.81% ($p<0.001$).

The study of the structure of the cfrs index showed that after the preventive program in preschoolers significantly ($p<0.001$) decreased the number of untreated carious lesions of tooth surfaces and increased the number of sealed and removed teeth. However, only in children aged 6 years, the value of the "rs" indicator was significantly higher than the "cf" indicator, in other age groups, the values of the indicators were approximately the same. Thus, the application of Program No. 3 improved the dental status of children, but did not completely solve all the problems. Children had new carious lesions, the number of which increased with age. In children aged 3-4 years, about half of the carious lesions remained untreated, at the age of 5-6 years - about 40%.

The implementation of preventive program No. 4, in addition to the measures provided for in the previous program, included medical measures of primary prevention (sealing of molar fissures, coating of teeth with fluoride varnish) and measures of secondary prevention (non-invasive treatment of carious lesions).

As a result of dynamic observation of children, it was found that the increase in caries of temporary teeth (according to the cfrs index) was minimized. In children aged 3 and 4 years, the increase in caries, according to the cfr i index, was zero, at the ages of 5 and 6 years, it was the same and insignificant (0.03 ± 0.01 per 1 examined).

The increase in tooth surface caries, according to the cfrs index per 1 examined, in children aged 3 and 4 years was small: 0.15 ± 0.01 and 0.16 ± 0.01 ($p>0.05$). In 5-year-old children, the increase in carious lesions increased to 0.41 ± 0.02, in 6-year-olds - to 1.91 ± 0.05. The differences in the growth of caries according to the cfrs index in children aged 5 and 6 years were significantly higher ($p<0.001$) than in children aged 3 and 4 years.

The study of the structure of the CFR, according to the data of the second examination, showed that positive changes occurred in all age groups, compared with the data of the first examination. In 3-year-olds, the proportion of carious untreated teeth decreased 3.3 times (from 89.02% to 27.27%), in 4-year-olds - 4.8 times (from 91.08% to 18.84%), in 5-year-olds - 6 times (from 90.09% to 14.87%), in 6-year-olds - 8.2 times (from 84.61% to 10.34%). The differences between the values of the "c" index of the first and second examinations were statistically significant ($p<0.001$).

The number of sealed (cured) teeth in preschoolers has increased in all age groups. In the structure of the CFR, the proportion of filled teeth revealed at the second examination, compared with the first examination, in 3-year-olds increased 6.6 times (from 10.36% to 68.48%). In 4-year-olds - 10 times (from 7.98% to 79.78%), in 5-year-olds - 9.1% (from 8.38% to 76.39%), in 6-year-olds - 5.5 times (from 13.19% to 73.14%).

The differences between the values of the "f" indicators at the first and second examinations were statistically significant ($p<0.001$) in all age groups.

A significant ($p<0.05$) increase in the proportion of prematurely removed temporary teeth was registered in all age groups in the structure of the CFR at the second examination, compared with the first examination: in 3-year-olds - from 0.61% to 4, 24%, 4-year-olds - from 0.94% to 1.38%, 5-summer - from 1.52% to 8.74%, 6-year-olds - from 2.20% to 16.52%.

There were also significant changes in the structure of the cfrs index after the preventive program. In preschoolers of all age groups, the number of sealed tooth surfaces significantly ($p<0.001$) exceeded the number of carious untreated surfaces.

Thus, as a result of the Program No. 4, the increase in carious lesions of teeth in preschool children significantly decreased according to the cfr and cfrs indices, the number of untreated carious lesions sharply decreased and the number of filled teeth significantly increased.

The application of the comprehensive program was effective in all age groups, in relation to both primary and secondary prevention of dental caries in preschool children. The comparative effectiveness of dental caries prevention programs in preschoolers was carried out according to the indicators standardized for each program. The assessment of the increase in dental caries according to the CFR index showed that the largest increase in caries of temporary teeth, per 1 examined child, was detected in preschoolers after Programs No. 1 and No. 2: 0.30 ± 0.01 and 0.28 ± 0.01, respectively.

After the implementation of programs No. 3 and No. 4, the increase in dental caries, according to the cfr index, in preschoolers was minimal: 0.04 ± 0.01 and 0.01 ± 0.01, respectively. The differences between the programs were not statistically significant ($p>0.05$). At the same time, significant ($p<0.001$) differences were revealed between the results of the programs according to the cfrs index, reflecting the increase in carious lesions of the surfaces of teeth.

The increase in carious lesions, according to the cfrs index, after Program No. 1 was the largest and amounted to 1.58 ± 0.07 per 1 examined child (differences in relation to the results of all other programs were statistically significant, $p<0.001$). After the implementation of Programs No. 2 and No. 3, the increase in caries decreased and amounted, according to the cfrs index, to 1.08 ± 0.05 and 0.84 ± 0.02, $p<0.001$. According to the cfrs index, the lowest value of the increase in dental caries was registered in preschoolers after Program No. 4 – 0.66 ± 0.01, which was significantly lower than after all other programs ($p<0.001$).

Thus, in comparison with Program No. 1, after the application of Program No. 2, the increase in carious lesions of tooth surfaces decreased by 1.5 times, after Program No. 3 - by 1.9 times, Program No. 4 - by 2.4 times. A comparative analysis of the structure of the CFR index in preschoolers showed that the most positive changes occurred after the application of Program No. 4.

The share of carious (untreated) teeth after the application of Program No. 1 was the largest and amounted to 70.16% in the structure of the cfr index. After the implementation of Program No. 2, the "c" indicator in the structure of the CFR index decreased to 53.83%, Program No. 3 - to 44.60%, Program No. 4 - to 14.87%. The differences between the "c" indicators of all programs were statistically significant ($p<0.001$).

The majority (75.00%) of carious teeth were sealed only after the Program No. 4. After the implementation of Program No. 3, the value of the indicator "f" in the structure of the cfr index reached 50.00%. After the implementation of Programs No. 2 and No. 1, the number of cured teeth was significantly lower: 35.58% and 21.87%, respectively. The differences between the "f" indicators of all programs were statistically significant ($p<0.001$).

The values of the "r" indicator in the structure of the CFR index were approximately the same after the implementation of Programs No. 1, 2, 3 and 4 and amounted to 10.13%, 5.40%, 10.58% and 7.97%, respectively ($p>0.05$).

The study of the structure of the cfrs index in preschoolers after prevention programs revealed the same patterns.

After the implementation of Programs No. 1 and No. 2, the structure of the cfrs index was dominated by untreated carious lesions of the tooth surfaces: 59.16% and 49.22%, respectively. After the implementation

of Program No. 3, the share of indicator "c" decreased to 38.96%, after Program No. 4 - to 11.42%. The differences between the "c" indicators of all programs were statistically significant ($p<0.001$). The share of sealed tooth surfaces in the structure of the cfrs index after the application of Program No. 1 was 21.47%, after Program No. 2 - 34.67%, Program No. 3 - 46.75%, Program No. 4 - 61.92%. The differences in the indicator "f" between all programs were statistically significant ($p<0.001$).

Attention is drawn to the rather high indicators of "r" in the structure of the cfrs index after all programs, which reflects the limited possibilities of preserving temporary teeth before the physiological shift in case of untimely treatment of children for dental care.

The distribution of caries prevention programs by rating, depending on the significance of the results obtained, showed that the first rating place was occupied by Program No. 4, the second by Program No. 3, the third by Program No. 2, the fourth by Program No. 1.

Conclusions. Thus, the screening program and its combination with the involvement of parents in the care of children's dental health gave less results than the additional involvement of kindergarten teachers in the formation of health-preserving behavior in children. On the other hand, a comprehensive program with additional implementation by dentists, directly in kindergartens, preventive procedures, non-invasive and minimally invasive treatment of dental caries has improved the dental status of children much more effectively than all other programs.

REFERENCES

1. Камалова М.К. Атавуллаев М.Ж. Оптимизация профилактики и лечения кариеса зубов у детей дошкольного возраста на основе комплексного медико-социального анализа // «Biomeditsina va amaliyot jurnali» - Ташкент, 2020. -Специальный выпуск. - С. 719-725.
2. Камалова М.К., Маслак Е.Е. Гигиена полости рта у детей 3-6 лет (по данным анкетирования родителей) // «Dental Forum» научно-практический журнал. – Россия, - 2023. - №4. – С. 31-33.
3. Камалова М.К. Сравнительная оценка клинико-экономической эффективности программ профилактики лечения кариозных поражений зубов у дошкольников // «Журнал стоматологии и краниофациальных исследований» междисциплинарный подход по заболеваниям органов головы и шеи. - Самарканд, - Специальный выпуск, 2021. - С. 83-87.
4. Камалова М.К. Медико-социальный и клинико-экономический анализ лечения и профилактики кариеса зубов у детей дошкольного возраста // «Tibbiyotda yangi kun» научно - реферативный, культурно - просветительский журнал. - Бухара, 2020. - №3(33). - С. 79-80.
5. Камалова М.К. Оценка результатов внедрения программ профилактики кариеса зубов у детей дошкольного возраста // «Журнал Медицина и инновации». - Ташкент, 2021. - №4. - С. 680-684.
6. Камалова М.К. Оценка экономической эффективности программ профилактики лечения кариеса зубов у детей дошкольного возраста // «Tibbiyotda yangi kun» научно - реферативный, культурно - просветительский журнал. - Бухара, 2020. - №4(34). - С. 173-176.
7. Камалова М.К. Социально-экономический эффективность программ профилактики и лечения кариеса зубов у детей дошкольного возраста // «Образование и наука в XXI веке» международный научно-образовательный электронный журнал. - Россия, 2020. - №9. - Т.3. - С. 149-155.
8. Камалова М.К., Маслак Е.Е., Каменнова Т.Н., Осокина А.С., Афонина И.В., Огонян В.Р. Результаты лечения очаговой деминерализации эмали временных резцов у детей раннего возраста // «Tibbiyotda yangi kun» научно - реферативный, культурно - просветительский журнал. - Бухара, 2020. - №3(31). - С. 355-357.

9. Камалова М.К. Организация стоматологической помощи при лечении кариеса зубов у детей дошкольного возраста // «Биология ва тиббиёт муаммолари» международный научный журнал. - Самарканд, 2019. - №4.2 (115). - С. 221-224.
10. Маслак Е.Е., Камалова М.К. Проблемы организации стоматологической помощи детям дошкольного возраста // Biomeditsina va amaliyot jurnali. - Ташкент, 2020. -№. 1. -С. 26-32.
11. Камалова М.К., Рахимов С.Ш. Врождённая расщелина верхней губы и нёба у детей: этиологические факторы риска, методы профилактики // Journal of Advanced Scientific Research. - Iran, 2023. - Vol. 3. - Issue 2. - P. 12-20.
12. Камалова М.К., Рахимов С.Ш. Анализ выявления частоты и причины врождённых расщелин верхней губы и нёба у детей // “Янги Ўзбекистон: Инновация, фан ва таълим” мавзусидаги Республика 51-кўп тармоқли илмий конференцияси. - Тошкент, 2023. - Б. 18-20.
13. Камалова М.К., Касимова Р.Р. Особенности оптимального выбора методики дентальной имплантации. Литературный обзор // International Journal of Multidisciplinary Research. - India, 2023. - Vol.9. - Issue 6. - P. 171-175.
14. Камилов Х.П., Камалова М.К. Современные подходы в лечении хронического рецидивирующего герпети-ческого стоматита у детей // «Достижения науки и образования» Международный научный журнал. - Москва, 2018. - №3 (25). - С. 46-48.
15. Камилов Х.П., Камалова М.К. Повышение эффективности комплексного лечения острого герпетичес-кого стоматита у детей // «Norwegian journal of the international science» Международный научный журнал. - Нарвегия, 2017. -№10. - С. 35-37.
16. Kamalova M.K., Djuraeva A.A. Improvemen to fmethod sof treatment and prevention of candidiasisin young children // «Образование и наука в XXI веке» Международный научно-образовательный электронный журнал. - Россия, 2020. - № 9. - Т. 3. - С. 160-162.
17. Камалова М.К., Садуллаева Н.А. Современный подход к оперативному лечению переломов скуловерхнечелюстного комплекса // «Журнал Биомедицины и практики» - Ташкент, - 2022. -№ 4. - С. 246-251.
18. Kamalova M.K. Og'iz bo’shlig’i shilliq qavatining nekrotik-yarali jarohatlari - trofik yaralar tasnifi // Journal of Healthcare and Life-Science Research. - Узбекистан, - 2024. -Vol. 3, - No. 01. - P. 65-72.
19. Kamalova M. K., E.E. Maslak., I.V. Fomenko., A.L. Kasatkina., T.N. Kamennova., T.G. Khmizova., K.V. Nikitina. Reasons for primary teeth extraction in children aged 1-14 years: a retrospective study // Palarch’s journal of archaeology of egypt. - Нидерланды, 2020. - Vol.17. - No6. - P. 13947-13964. Retrieved from www.scopus.com
20. Kamalova M.K. Evaluation of the results of the implementation of dental caries prevention programs in preschool children // Integrative dentistry and maxillofacial surgery. - Tashkent, - 2023. Volume 2. - Issue 1. - P. 109-116.
21. Kamalova M.K., Fomenko, I. V., Dmitrienko, D. S., Matvienko, N. V., Arjenovskaya, E. N., Gevorkyan, A. G., Maslak, E. E. Reasons for 1-17-year-old children to visit A dentist during the Covid-19 pandemic. European Journal of Molecular and Clinical Medicine, 2020. 7(7), 546-558. Retrieved from www.scopus.com
22. Kamalova M.K., Kadirova M.K. Analysis of Detecting the Frequency and Cause of Eyelid Deformation in Women of Reproductive Age // Journal of Natural and Medical Education. - USA, 2023. - Vol.2. - Issue 6. - P. 80-84.

23. Kamalova M.K., Kadirova M.K. Evaluation of the results of comprehensive rehabilitation of women of fertile age with acquired eyelid defect // **Galaxy International Interdisciplinary Research Journal.** - India, 2022. - Vol. 10. - Issue 5. - P. 431-436.
24. Kamalova M.K., Kadirova M.K. Innovative approach to surgical correction of acquired eyelid defect in women of fertile age // "Actual problems of dentistry and maxillofacial surgery". V International Congress of Dentists Tashkent, - 2022. - P. 50-52.
25. Kamalova M.K., Komilov H.P. Clinical and economic analysis of the optimization of prevention and treatment of dental caries in preschool children // Scientific journal of International Biology and medical problems. 2019. - № 4.2 (115). 53-56.
26. Kamalova M.K., Maslak E.E. Can Dental Screening of Preschoolerswith or without Education of the Parents Improve Children's Oral Health? The Longitudinal Study Results // Integrative dentistry and maxillofacial surgery. - Tashkent, 2022. - № 1(1). - P. 58-62.
27. Kamalova M.K., Raximov Z.K., Po'latova Sh.K. Clinical and economic rationale for the organization of dental care for preschool children]. Tibbiyotda yangi kun Ma'rifiy manaviy jurnal. 2019. - № 4 (28). 268-271.
28. Kamalova M.K., Sadullayeva N.A. Modern approach to surgical treatment of fractures of the zygomatic bone and upper jaw // International Journal of Health Systems and Medical Sciences. - USA, 2023. - Volume 2. – No. 2. – P. 60-64.
29. Kamalova M.K., Sadullayeva N.A. Yonoq-yuqori jag` kompleks sinishlarini jarrohlik davolash usuliga zamonaviy yondoshuv // Integrative dentistry and maxillofacial surgery. - Tashkent, - 2023. Volume 2. - Issue 1. - P.127-132.
30. Kamalova M.K., Sadullayeva N.A. Innovations in surgical treatment of fractures of the zygoma-maxillarious complex // «British View» **Journal.** - London, - 2022. -Volume 7. - Issue 2. - P. 144-151.
31. Kamalova M.K., Maslak E. E., V.Naumova. Relationship between General and Oral Diseases: Literature Review // American Journal of Medicine and Medical Sciences. - Америка, 2020. - Vol.10(9). - P. 690-696. Retrieved from www.scopus.com
32. Vokhidov U.G., Kamalova M.Q. The use of various techniques in the treatment of traumatic injuries of the oral mucosa in children // European Journal of Molecular & Clinical Medicine. - England, 2020. - Vol. 7. Issue 7. - P. 3743-3748.
33. Kamilov H.P., Kamalova M.K. The use of laser therapy in the treatment of chronic recurrent herpetic stomatitis in children // Scientific journal European science review Vienna, 2018. - No. 7-8.- pp. 120-121.
34. Kamalova M.K., Raximov S.SH. Congenital cleft lip and palate in children: etiological risk factors, prevention methods // American Journal of Research. - USA, - 2023. - Issue 3-4. - P.155-164.
35. Kamalova M.K., Raximov S.SH. Analysis of the detection of the frequency and causes of congenital cleft of the upper lip and palate in children // Scientific and international conference on medical education, health science and patient care. - New Delhi, India, 2023. P. 6-9.