



Knowledge of Prevention of Dental Diseases among the Children Population of Armenia

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Abstract

Objective: One of the problems of improving dental care is the prevention of dental diseases. The aim of our work was to identify the awareness and the level of hygienic knowledge among school children to further increase the motivation of implementation and conduction of preventive measures.

Method: Analyzed 1465 questionnaires of the respondents of Armenia in 3 groups of ages.

Results: Analyzing the data of hygiene skills among the children population in Yerevan it was found that 23.1% of 12-year-olds and 28.9% of 15-years-old brushed their teeth once a day (55%) and twice a day (50.2%). In the regions of Armenia 21.7% of 12 years-old and 30.5% of 15-years-old students brushed their teeth once a day in the cities and rural areas (14.6% and 22.7%, respectively). 45.3% 12-years-old and 43% 15-years-old children brushed their teeth twice a day in cities and villages (58.5% and 24.2%, respectively). On average, 42.1% of the respondents used fluoride toothpaste.

Conclusion: The medical and sociological study conducted in the Republic of Armenia showed that the leading priority in dental care should be the development and implementation of a scientific methodology for motivating the population to preserve oral health focusing on the preventive measurements with greater involvement of public sector.

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Keywords: Oral hygiene; Fluoride(s); Preventive dentistry; Caries; Child dentistry.

Introduction

Nowadays one of the main and difficult problems in dentistry throughout the world is the problem of the teeth hard tissues' and periodontal diseases [1-3]. One of the problems of improving dental care is the prevention of dental diseases. A significant number of studies have been devoted to the problems of prevention of dental morbidity. As the world and domestic experience

shows, the basis of the entire system of prevention should be by development of appropriate prevention programs a single national and privilege regional. Prevention of dental diseases with oral hygiene as its most important factor, as well as the use of fluoride-containing preparations and toothpastes counteract the development of diseases of the maxillofacial region and contribute to the



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preservation of human health in general [4-9]. In countries where prevention programs were implemented, the dental morbidity has decreased from 2 to 4 times [10-12].

Based on the results of a survey of participants in prevention, therapeutic and diagnostic, organizational and financial activities, the medico-sociological monitoring allows to identify significant problems affecting the quality of medical care [4,10,13,14]. To determine the level of motivation of the population to prevent dental diseases the sociological surveys of the population were conducted. Questionnaire as one of the types of sociological research allows to get information relatively quickly and cheaply [15-17]. The survey enables reaching the largest number of the respondents and gets more reliable results. An evidence from literature states that reliability, the correct actions, as well as skills and attainments contributed to the treatment of oral diseases or preserving and maintaining the health in the preventive health care are being formed due to the obtained information and knowledge and cognition [18,19].

Therefore, the aim of our work was to identify the awareness and the level of hygienic knowledge among schoolchildren to further increase the motivation of implementation and conduction of preventive measures.

Material and methods

To achieve this goal we analyzed 1465 questionnaires of the respondents from all the regions and the capital of the Republic of Armenia. Of the total number of persons who took part in the survey, 47.4% were men and 52.6% were women. For a more complete assessment of the issue being studied and finding more subtle patterns of children’s motivation, so a deterministic analysis was performed over 3 identified age groups of 12, 15, 16-18 years of ages (Table 1). In the course of the sociological research a random non-repeat selection was used: one respondent was to complete the questionnaire only once. Participation in this study was voluntary, and the participants signed informed consent. Ethical clearance was guaranteed from ethical committee in YSMU. The obtained data was statistically processed in the SPSS19 program. The reliability the χ^2 criterion was also compared with the tabulated data (“Pearson χ^2 distribution”). Results were considered significant at a probability level of $p < 0.05$ (95% significance level).

Table 1: Distribution of respondents by age groups and place of residence.

Place of residence age groups	Rural population	Urban population	Yerevan	All
12	126	164	266	556
15	121	125	271	517
16-18	116	122	154	392
All	363	411	691	1465

Results

The allotment of the respondents by social status showed that in Yerevan the largest share was made up of people from families of businessmen (42.1%), 15.3% were the respondents from families of workers, 41.8% were from families of employees, 0.72% were from families of agricultural workers; in the regions, a large proportion were people from families of agricultural workers (28.2%), the smallest share were the respondents from families of businessmen (18.7%), and the individuals

from families of employees and workers were 27% and 26.1%, respectively ($\chi^2 = 78.006$; $p < 0.001$).

The question about the importance of preventive measures for the oral health preservation was positively answered in 88.1% of the cases in Yerevan, 88.7% of the regions urban population and 83.2% of rural residents.

From the data of the sociological survey it was evident that 7.2% of the respondents made visits to the dentist once a year. Only 8.5% of the respondents visited a dentist twice a year. However, it should be noted with regret that there is a certain portion of persons, namely, 7.8% who had not visited the dentist at all. People who noted that they applied to the dentist only if needed can also be referred to the group ($\chi^2 = 24.828$; $p < 0.001$), and such people comprised the majority (73%). Such an attitude towards the dentist led to an increase in the complications of dental diseases, which further would overburden the dental status of the population (Figure 1).

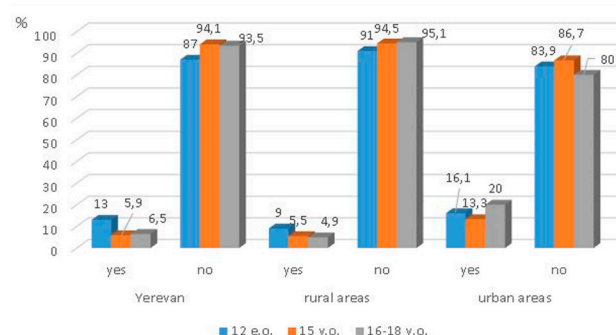


Figure 1: Population’s visits to the dentist.

In response to a question about the sources of information from which the population receives knowledge about the need for oral hygiene many respondents chose several answer options, distributed as follows:

In Yerevan - At school 29.2%, from conversations with parents 59.9%, from television programs or popular science literature - 19% and 7.8% did not receive any knowledge;

In regions -

Cities: at school 40.5%, from conversations with their parents 53.2%, from television programs or popular science literature 17.6% and 8% did not receive any knowledge;

Countryside: at school 38.2%, from conversations with their parents-28%, from television programs or popular science literature 13.6%; and 13.1% did not receive any knowledge;

Analyzing the data presented, the main source of data on measures of the prevention from caries were the conversations with parents (for the age group of 12 years); starting from adolescence (15 years and older) the main source of information were television programs and printed publications. Unfortunately, the questions on individual oral hygiene have received alarming answers.

When answering questions about the frequency of tooth brushing and what hygiene products the respondents used several answers were selected. Almost everyone was known about the need for daily teeth cleaning. However, in Yerevan only 74.4% of the respondents noted that they had studied the methods of individual oral hygiene, 25.6% of them brushed their teeth once a day, 60% - brushed their teeth twice a day,

16.8% brushed their teeth regularly, 4.5% brushed not regularly, 1% - did not brush at all. The majority of the respondents (98.3%) used toothpaste as an item of oral hygiene, 6.9% used dental floss and 8% also used mouthwash.

During the survey of the urban population of the regions, the following data was obtained: 70.2% of the respondents noted that they have been trained individual oral hygiene methods, 29.8% brushed their teeth once a day, 49.3% brushed their teeth twice a day, 24.2% brushed their teeth regularly, 8.8% did not clean regularly, and 2.5% did not clean at all. As a means of oral hygiene, 88.4% of them used toothpaste, 7.4% used floss, and 9.9% used mouthwash. Among the respondents in the rural areas: the share of those who studied the methods of individual oral hygiene was 45.7%, of those who brushed their teeth once a day 20.7%, who brushed their teeth 2 times a day 32.4%, who brushed their teeth regularly 11.4%, who brushed their teeth irregularly 14.3%, and who did not brush their teeth at all 7.5%. Toothpaste as a means of hygiene was used by 79.1% of the respondents in the surveyed villagers, 1.9% indicated that they also used dental floss and 5.8% noted the use of rinses. However, a survey revealed that sodium bicarbonate solution (baking soda) was often used as a rinse.

Analyzing the data of the hygienic skills questionnaire, it was found that in Yerevan 23.1% of 12-years-old students brushed their teeth once a day, 55% twice a day; among the 15-year-olds: 28.9% brushed their teeth once a day and 50.2% brushed their teeth twice a day, only 5.3% of 12-years-old and 5.5% of 15-years-old schoolchildren performed hygiene of interdental spaces. In the cities of the regions, the pattern was as follows: 21.7% of 12-year-olds and 30.5% of 15-year-olds schoolchildren indicated brushing their teeth once a day; for brushing twice a day - 45.3% of 12-year-olds and 43% of 15-year-olds in line with 0.6% and 10.2% used dental floss, respectively. In the rural areas 14.6% of 12-year-olds and 22.7% of 15-year-olds noted that they brushed their teeth once a day; 58.5% of 12-year-olds and 24.2% of 15-year-olds twice a day, while during subsequent dental examinations, the Green-Vermillion hygienic index was assessed as unsatisfactory. Interdental hygiene with dental floss was performed by 0.8% of 12-year-old children and 1.6% of 15-year-old adolescents in the villages. Fluorine toothpaste was used by 52.6%, 47% and 26.7% of the respondents, respectively ($\chi^2 = 45.808$; $p < 0.001$) (Figure 2).

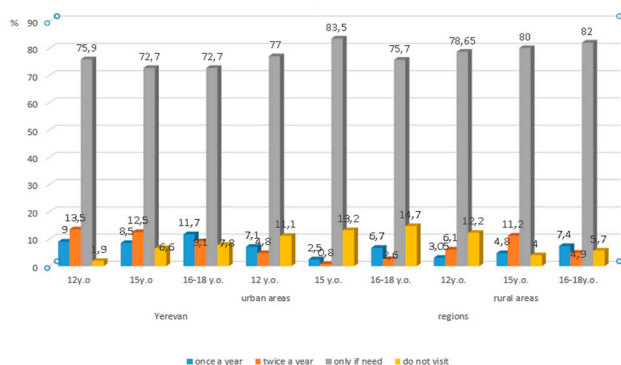


Figure 2: The use of various hygiene products among the population of RA.

A large amount of carbohydrate food is taken by 70.5% of the respondents in Yerevan, 84% - in cities of regions, and by 72.3% of them from rural areas ($\chi^2 = 1.192$; $p > 0.1$). Despite the good climatic conditions and the presence of abundant amount of fruits and vegetables, only 88.9% of the population regularly accepted fruits and vegetables. 22.7% of the respondents in the

capital did not eat hard food; in the regions: 31.7% - in the cities and 27% of the respondents - in the villages ($\chi^2 = 7.362$; $p < 0.01$).

The questions concerning the preventive measures in the age groups of 12 year-olds, 15 year-olds and 16-18 year-olds population were of not-satisfactory answers (Figure 3).

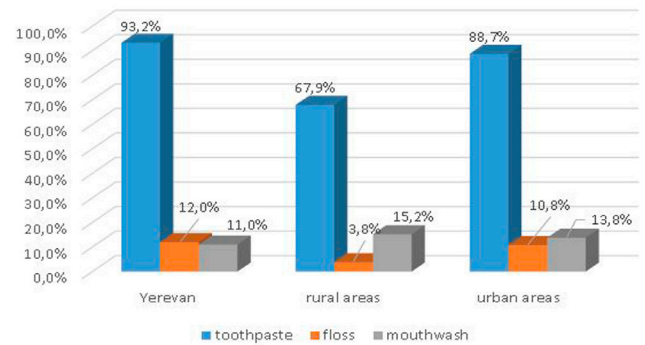


Figure 3: Answers to the question on Fluor protecting in the Republic of RA.

81.1% of 12 years-old children and 69.6% teenagers in Yerevan answered negatively to the question about fissure sealing.

A similar pattern was observed both in the cities and in the villages of the regions. In the age group of 12 year-olds there were negative answers to the question about the sealing of fissures in 71.4% of cases, and in the teenager's group, we have had positive answers in 23.4% of cases.

In the group of 16-18 years-olds' positive answers to the question about the sealing of fissures were received from 26.1% of the respondents in Yerevan and 20.8% in regions.

Despite the high percentage of positive responses about the consultations with a dentist regarding prevention (68.9% in Yerevan, 69.7% in the cities of the regions and 45.7% in the villages), only 35.6% of the respondents in Yerevan, 40.2% of urban residents of the regions and 19.7% of the rural residents knew about the anti-carious effect of fluoride, and 45.3%, 43.5% and 20.9% of the respondents, respectively, used fluoride toothpaste.

On the issue of the importance of a balanced diet for caries prevention, the majority of the population gave positive answers as follows: 70.6% in Yerevan, 89% in cities of regions and 58.2% in villages. However, 28.3% of the surveyed children population affected the diet ($\chi^2 = 42.967$; $p < 0.001$) [20,21].

Discussion

It is particularly apparent that lack of information and knowledge is closely related to the results of assessing the hygienic condition of the oral cavity in the patients, which indicates the occurrence of a low level of sanitary and hygienic knowledge among them, as well as the deficiencies of sanitary and educational work performed by dentists among population. The medical and sociological survey revealed that a significant part of the population does not have a conscious motivation to take measures to care for the condition of the oral cavity. Meanwhile the education of respondents and place of residence (city/village) are of great importance as well. The primary source of information for children regarding dental health issues are their parents, for this reason, one of the ways to improve the child's stomatological knowledge and hygienic skills is to provide accurate information to parents. At the same time, school has a significant impact on the formation of a healthy lifestyle for

children. For the majority of the population the only motive to turn to a dentist is to get rid of acute pain. At the same time, if one half turns to the dentist immediately, then the other takes painkillers, waits and turns to the help of specialists only when nothing helps.

Conclusion

The medical and sociological study conducted among the population of the Republic of Armenia showed that in difficult economic conditions the leading priority in dental care should be the development and implementation of a scientific and practical comprehensive methodology for motivating the population to preserve oral health, being focused on the preventive measurements with greater involvement of public funds and public sector.

The clinical relevance

The dentists try to teach their patients proper oral hygiene significance since childhood. However, the hygiene skills of the population remains at a very low level, which leads to a violation of the rules and standards of oral care, contributes to the emergence of microbial biofilms and the development of caries and periodontal diseases. The patient's knowledge about hygiene products and their use does not always indicate the quality of oral hygiene. Therefore, not only sanitary-educational work is necessary, but also individual training on the oral hygiene of each patient in accordance with the instructions of the dentist. Summarizing the results of the study, we can conclude that the motivational component is important in educating the population about hygiene and health education issues. The use of coaching technologies aimed at the motivational aspect in the issues of health education will provide a better hygienic education and create a responsible attitude to the health of the oral cavity and the body as a whole.

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Author contributions

Daniela Elena Costea contributed to conception and acquisition, drafted the manuscript.

M.E.Manrikyan contributed to conception and design, data acquisition and interpretation, drafted and critically revised the manuscript;

M.M.Markaryan contributed to conception and design, data acquisition and interpretation, drafted and critically revised the manuscript;

I.F.Vardanyan contributed to conception and design, data acquisition and interpretation, drafted and critically revised the manuscript;

G.E.Manrikyan contributed to conception and acquisition, drafted the manuscript.

A.A.Avetisyan contributed to design and acquisition; drafted the manuscript.

All authors gave their final approval and agree to be accountable for all aspects of the work.

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