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## POSSIBLE REASONS OF DENTAL CARIES WIDE SPREADING IN UKRAINE: DISCUSSION

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**Summary:** Ukrainian population has a high prevalence of dental caries and paradontal diseases. The prevalence of dental caries in 6-year-olds children is about 87.9%; 12-year-olds children – 72.3%. Principles of public dental care in Ukraine were identified in early Soviet period and that legitimized it as a public and free of charge with preventive orientation. We may identify the next reasons of dental caries spreading: medical - shortcomings in dental care organization, underdeveloped prevention of dental diseases; economic — commercialization of the dentistry in Ukraine, medical care and dental services are less available to the vast majority of population due to their high cost; social reasons - low or completely absence of culture of proper hygienic oral care; irrational consuming of light refined carbohydrates; dentofobia among children and adults, lazy chewing and high homogenization of food; environmental causes - not fully investigated, - industrial waste, heavy metals and household chemicals' decomposition products, which indirectly affects the status of dental health.

**Key words:** dental caries, prevalence, Ukraine, reasons

**Introduction.** High prevalence of dental caries in the world is a medical, economic and social problem. Dental caries problems may be often palpable challenge for health systems for almost every country. Ex-Soviet Union countries (excluding the Baltic States) have a high incidence of Dental Caries – 90 – 99%, similar to the rate in Europe - 95 - 99% in South and North Americas – 85 - 98%.

In Ukraine, the prevalence of dental caries in 6-year-olds children is about 87.9%; 12-year-olds children – 72.3%. In some regions of Ukraine the level of caries is very different, for example, in the eastern part of the country — 73-93%, in Kyiv caries prevalence among individuals of 18-23 years age group is very high - 93.69%.

According to some experts, the prevalence of dental caries in the future will increase in population of Ukraine (if current level of communal and individual prevention will be saved) and dental caries may reach a frequency of 90.3% very quickly.

A significant proportion of caries lesions processes and its complications in children's population today dictate the need to improve the quality of dental care for children and to increase its accessibility for abovementioned category of population [1,2,3].

### **Organization of dental healthcare in Ukraine**

Principles of public dental care in Ukraine were identified in early Soviet period and that legitimized it as a public and free of charge with preventive orientation.

In Ukraine studying and teaching of dental specialists is carrying out at Ukrainian medical dental Academy, Dental Faculties of medical universities and institutes, Dental faculties of classic universities. Separately in structure of

National academy of medical sciences a scientific research institution "Institute of Stomatology" works.

The training of dental specialists attaches great importance to improve basic knowledge especially in a possible specialization in dentistry, the so-called mini-majors (periodontology, prevention and health) within therapeutic dentistry, material science - in prosthetic dentistry.

Formation of a new type of specialist provides improvements of targeted training through postgraduate training in form of internships and a "model of specialization". Today Ukrainian dentistry has the next dental specialties — therapeutic, surgical, prosthetic, paediatric dentistry and orthodontia.

Outpatient dental care in Ukraine is being provided by:

- 1) independent dental polyclinics (republican, regional, city, district);
- 2) dental departments as part of regional cities' policlinics, central district hospitals, Centres of primary medical and sanitary care and medical units in large industrial enterprises;
- 3) in dental cabinets of general hospitals, clinics, antenatal clinics, schools;

Dental care at dental polyclinics and departments is provided into therapeutic profile, orthopaedic, paediatric dentistry and dental surgery.

Specialized ambulatory outpatient dental care is one of the most common kind of medical services. The share of dental disease in the general population incidence on appeal reaches more than 16%. Dental care is second type of most common medical service appeal to general practitioners (physicians), 97% of the population suffer with caries, 60-70% - have periodontal lesions.

Inpatient care is provided by dental departments or units in national, regional, city, district clinics, clinical research institutes, universities and medical institutes and at the institutions for post-diploma medical education.

Work planning and management of dental medical institutions usually are performed by local state administrations through departments of medical care and chief specialists. Positions of chief specialist usually are public (part-time) a Chief specialist appointed from among the chief physicians of national, regional, local dental polyclinics or from scientific-pedagogical personnel of specialized educational institutions. Chief specialist in dentistry should provide organizational and methodological and scientific leadership for all dental clinics on territory.

Calculation of the medical staff depends of number of population and based on fact that each resident annually has near 2.2 visits to dental polyclinic. For every 10, 000 adults 4.0 (therapist + surgeon) and 1 position of prosthesis per 4 - 5 dentists released. For every 10 000 child population must stand 4.5 dentist's positions. Currently, supplement of Ukrainian population by dentists is 4.0 positions per 10, 000. Due to some regions we can see a disparity in the way of enlargement the number of dentists in large and medium-sized cities. There is a disparity in the availability of narrow profile specialists such as children's dentists, specialists who perform treatment of oral mucosa and neural-stomatological diseases.

In the dental care providing in Ukraine we can see district therapeutic principle of organisation. It depends on incidence of dental disease, age structure of

the population and availability of medical personnel.

Dental polyclinic is the leading specialized health care institution that provides the public and highly specialized care for population with diseases of the mouth and teeth.

The main functions of dental polyclinics:

- 1) organizing and performing of specialized dental care to various demographic groups;
- 2) implementation of clinical method of dyspanserization (special follow-up) in activities of dentists to prevent oral diseases;
- 3) organization and performing the sanitation of oral cavity routinely and during treatment in dental polyclinic;
- 4) development and improvement of complex clinical examination and follow-up of patients together with the district (craft) physicians and paediatricians, obstetricians, gynaecologists, otorhinolaryngologists and other specialists, general and paediatric polyclinics, antenatal clinics etc.;
- 5) development highly specialized types of dental care and their approach to the population;
- 6) improvement of diagnostic and treatment methods: physical therapy, radiological, biochemical, cytological, functional diagnostic etc.;
- 7) promotion of hygiene and medical knowledge about of dentistry in the population;
- 8) accounting and reporting the dental records and statistic data.

#### **Probable reasons of dental caries spreading in Ukraine**

As for the likely causes of the high prevalence of dental caries in the population of Ukraine, we can identify several groups:

- 1) medical - shortcomings in organization and provision of dental care, underdeveloped link of prevention of dental diseases in practice;
- 2) economic — commercialization of the Dentistry - dentists are more interested in the treatment of caries and its complications, rather than in carrying out of preventive measures; medical care and dental services are less available to the vast majority of Ukraine's population due to their high cost;
- 3) social reasons - low or completely absence of culture of proper hygienic oral care; developed tradition of irrational consuming of light refined carbohydrates; dentofobia among children and adults, which often is a psychological problem, and partly medical — caused by inaccessibility of modern anaesthesia technologies for dental manipulations to the public practical dentists; separately include the features of cooking – lazy chewing and high homogenization of food
- 4) environmental causes - not fully investigated, but there are proven correlations between environmental pollution by industrial waste, heavy metals and household chemicals' decomposition products, which indirectly affects the status of dental health; these include the non-directional selection of microorganisms resistant to antibiotics and antiseptics, formed as a result of the widespread use of such chemicals in the industry and at centralized food processing; excessive use of household antiseptics, etc.

Today in Ukraine the latest scientific technologies in the field of dentistry are introduced into practice. They are: aesthetic dental restoration, dental implants, all-cast and metal-free dental prosthetics, but preventive dentistry technologies in Ukraine are underdeveloped.

We can suggest it after performed analysis of the number of publications in professional and specialized journals, themes of reports delivered on scientific conferences

and forums, courses thematic improvements, workshops etc.

As the pace of introduction of new technologies in dental practice Ukraine is among the world leaders. But while such treatment technologies are often costly and therefore inaccessible to lot of patients in Ukraine.

Medical reform in Ukraine, whose purpose was to introduce a general provision of primary health care — family medicine - general practice and the simultaneous reduction in the provision of highly specialized and inpatient care, eliminated dental health care from the structure of primary care, especially in network of public medical institutions.

Initially dental care was included in the secondary and tertiary health care, and later dental care was proposed to be passed to general practitioners who have no proper education. General practitioners usually only initially introduced with dental nosology and don't study technology of dental manipulations.

This situation is not conducive to providing proper dental care, generally exclude the possibility of a centralized prevention of dental diseases and contributes to the further commercialization of the dental sector.

Since dental department and clinics over time transformed into self-supporting (self-funding) departments or turned into private structures in general.

Commercialization of dentistry led to the rapid development of private dental care, but mostly such institutions develop in the capital, major cities and industrial centres, where fierce competition leads to intensively introduction of new technologies into practice and there is medical inflation [4,5].

**Preventive activities in dental care in Ukraine.** In Ukraine, in its various regions, the problem of teeth decays, and prevent of its

spreading have being intensively studied over the past 40 years. The results of many research works implemented in practice.

In Soviet times Ukraine had a created system of dental clinical examination, there was a system of school of dentistry and practice of mandatory preventive medical examinations of the population, during which dental status of population was studied, centralized water fluoridation was performed and others. In situation of long-lasting economic and social crisis in Ukraine, some recommendations were carried out, some were not brought to practical implementation.

Today, Ukraine has no working programs of dental health protection, which would operate at the national level. Prevention of dental diseases is studied at higher medical educational institutions as part of medical courses in dentistry, paediatric dentistry and separately. Preventive technologies are studied by students of dental faculties, medical interns and trainees on cycles of specialization and pre-attestation study cycles.

However, there are no incentives, partially financial, for dental practitioner to engage preventive work.

The trends towards to convert specialized dentistry into the so-called "family dentistry" led to a reduction in quantity of children's dentists that impact negatively on dental care availability for children which causes a dissemination of complications of caries among children.

In Ukraine, a type of dental care as "dental (tooth) hygiene" is non-legalized, although the required training and work programs and the educational qualification characteristics have been established, abovementioned specialty is not included to State Classifier of occupations. That's why dental hygienists are not allowed to work. This situation is contrary worldwide trends and international practice [6,7,8].

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