

# Oral Hygiene Measures as a Preventive Measure in The Field Of Maintaining the General Health of the Patient

Alexey R. Sokolov,<sup>1\*</sup> Barbara O. Chichenkova,<sup>2</sup> Ekaterina A. Stegacheva,<sup>3</sup> Alexey V. Yumashev,<sup>4</sup> Alina A. Urtenova,<sup>5</sup> Alexander A. Markov<sup>6,7</sup>

<sup>1</sup> St.-Petersburg State Pediatric Medical University. Saint-Petersburg, Litovskaya st., 2. 194100,

<sup>2,4</sup> Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), 8-2 Trubetskaya str., Moscow, Russian Federation 119991

<sup>3</sup> Federal State Budgetary Educational Institution of Higher Education "Academician I.P. Pavlov First St. Petersburg State Medical University" of the Ministry of Healthcare of the Russian Federation 197022

<sup>5</sup> Sechenov First Moscow State Medical University (Sechenov University) Moscow, Russia, 119992, Trubetskaya 8-2, Russian Federation

<sup>6</sup> Tyumen State Medical University, Tyumen, Russian Federation

<sup>7</sup> Tyumen Industrial University, Tyumen, Russian Federation

## ABSTRACT

The article studies oral hygiene measures as a preventive measure in the field of maintaining the general health of the patient. According to the author, oral health is much more than beautiful and healthy teeth. This is of fundamental importance for the general state of health and affects the well-being and quality of life of each person. Oral health affects oral function and human social interactions and is closely related to overall health and quality of life.

Oral health is an integral part of overall health, and one affects the other. Improper nutrition, smoking, alcohol consumption and poor oral hygiene are the most significant factors affecting the occurrence of various diseases of the oral cavity. Diet affects the development of caries, tooth erosion, periodontitis, oral cancer and many other diseases of the soft tissues of the oral cavity. Smoking is associated with oral cancer, gum and periodontal diseases, periimplantitis, discoloration of teeth, bad breath, changes in taste buds and difficulties healing wounds after surgery. High alcohol consumption is associated with an increased risk of developing oral cancer or other potentially malignant diseases, periodontitis, caries and xerostomia. Poor oral hygiene can lead to the development of caries and periodontitis, and is also associated with heart disease, cancer and diabetes.

Many of these oral diseases can be prevented by informing about risk factors. Oral hygiene is a critical factor in maintaining good oral health and is therefore linked to overall health and quality of life. The most effective method of preventing caries or periodontitis is the removal of plaque by regular and proper mechanical brushing of teeth, which is a key step in maintaining oral health.

Corresponding Author e-mail: sokolpoi111@ya.ru

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## INTRODUCTION

Knowledge of oral hygiene is a fundamental prerequisite for healthy behavior, allowing a person to take measures to protect their own health. Various studies have shown a link between increased oral health knowledge and improved oral hygiene and health-related behaviors.

Oral health is inseparable from the general state of health and well-being. Oral diseases are widespread all over the world and cause significant damage to the global economy and human health, significantly reducing the quality of life of those affected. The Global Burden of Disease study reports that 3.9 billion people suffer from oral diseases.<sup>1</sup>

Dental caries (tooth decay) and periodontal diseases are the most common diseases of the oral cavity worldwide. Approximately half or more of the world's population suffered from periodontal diseases, and about 11.2% suffered from severe periodontitis. Similarly, dental caries was most common in permanent teeth, affecting about 2.4 billion people, while caries in early childhood is a quiet global epidemic that affected 621 million children, which negatively affects their quality of life and well-being.

### KEYWORDS:

Oral hygiene,  
Dental and gum care,  
Caries,  
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Due to changes in the demographic profile, including the aging of the population, the cumulative burden of diseases and conditions of the oral cavity has increased significantly. The number of people with untreated oral diseases increased from 2.5 billion in 1990 to 3.5 billion in 2015, while the number of disability-adjusted life years (DALYs) increased by 64% worldwide.

The purpose of the study is to conduct a study of oral hygiene measures as a preventive measure in the field of maintaining the general health of the patient.

## MATERIALS AND METHODS

The article uses comparative and comparative research methods, examines sources that include an analysis of various approaches to substantiating certain approaches to the implementation of oral hygiene.

**Results.** Oral diseases have similar behavioral risk factors to other non-communicable diseases (NCDs), including excessive sugar intake, unhealthy diet, smoking and excessive alcohol consumption.<sup>2</sup> Poor oral health has been linked to major NCDs, such as cardiovascular disease and diabetes mellitus. The improvement of oral hygiene was associated with the improvement of surrogate indicators of cardiovascular diseases by reducing the progression of the intima-media layers of the carotid artery.

Several studies have shown that improving oral hygiene in diabetic patients reduces hemoglobin A1C levels. In addition to the association of oral hygiene with chronic diseases, poor oral hygiene has been found to play a role in the etiology of oral cancer.

In elderly patients, routine oral hygiene, such as brushing teeth after meals, can reduce the incidence of aspiration pneumonia. In general, older people are at a higher risk of dental infections and related complex complications. Tooth loss can lead to a decrease in the ability to chew certain foods, which can lead to malnutrition in late adulthood. Prolonged oral infections can lead to systemic infections, including infection of endocardial implants and artificial joints.<sup>14</sup>

Elderly people with dementia had significantly poorer oral hygiene and had more tooth decay than people without dementia. Due to the global trend of population aging, good oral hygiene and regular dental care among the elderly should be encouraged in order to reduce potentially severe dental infections and related health complications.

In the pediatric population, caries of baby teeth remains widespread all over the world [3]. Diseases of the oral cavity are chronic and accumulate throughout life. Childhood is a sensitive phase that affects people's health throughout life, not only on the general state of health, but also on the health of the oral cavity. The socio-economic status in which children grow up has a great and lasting impact on the level of oral diseases in adulthood.

Poor oral hygiene is associated not only with systemic diseases, but also with a number of diseases of the oral cavity. It has been established that poor oral hygiene in children is the main cause of early childhood caries (ECC) [4]. From birth to early

age, infants and toddlers who had a strong accumulation of plaque were at higher risk of developing caries and severe ECC. Similarly, preschool children who had a significantly higher plaque index were more likely to develop caries than children with a lower plaque index.

However, the effect of oral hygiene as such on the development of caries is difficult to determine, as many studies have been confused by fluoridated toothpastes. In the presence of fluorides, oral hygiene procedures are effective for preventing and controlling dental caries with proper plaque removal. However, a recent systematic review and meta-analysis have shown that in the absence of fluorides, the benefits of personal oral hygiene in reducing the incidence of caries are questionable. However, this finding should not prevent clinicians from advising their patients about the potential benefits of oral hygiene for caries control.

Personal oral hygiene is considered a pleasant, practical and economical measure of daily intake of fluoride. Unlike periodontal diseases, plaque accumulation and inadequate personal oral hygiene have been documented as crucial risk factors for periodontitis. Moderate or poor oral hygiene increases the risk of periodontitis by 2-5 times. In addition to the fact that poor oral hygiene is the main cause of oral diseases, it significantly affects the success of minimally invasive interventions<sup>5</sup>

Diseases and conditions of the oral cavity remain a public health problem worldwide, while in many countries there are certain problems associated with income inequality and commercial changes. Although these oral diseases are mostly preventable, they are still widespread, reflecting inequality and lack of financial resources, especially in disadvantaged communities or low- and middle-income countries. As is the case with most of these diseases, diseases and conditions of the oral cavity are caused by social norms. Children living in poverty and socially marginalized groups suffer most from tooth decay and have limited access to dental care.<sup>6</sup>

In developing countries, the vast majority of oral diseases remain untreated, since the cost of treatment exceeds the available financial and human resources. These costs are an economic burden not only on families, but also on the health sector. Currently, a broader social structure, including behavioral, biological, psychosocial, economic and political determinants, is proposed as the best approach to the study of the etiology of chronic diseases, including oral diseases, and patterns of health inequality. Significant inequalities in oral hygiene persist both within and between countries. A vicious circle of unfair economic mechanisms, poor health policies and poor governance is the cause of most of the health inequalities the world faces.

The existing neglect of oral hygiene policy and socio-economic and commercial determinants requires further solutions. The paradigm shift from the surgical to the medical model has been promoted to achieve the maximum goal of preserving oral health and is expected to improve people's quality of life related to oral health. Minimally invasive interventions are effective and should be used whenever possible to delay or reduce the need for extensive restorations and surgical interventions.<sup>7</sup> Although several theoretical concepts and

strategies have been published, there is a limited number of studies that cover the suitability and applicability of these concepts in large clinical trials or in a real community setting.

The condition of the oral cavity is directly related to the quality of life. In 1995, the World Health Organization defines quality of life as “people’s perception of their position in life, in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns”.<sup>8</sup>

In accordance with this concept, it is assumed that QOL (Quality of Life) is a complex and subjective concept, since it depends on the perception of the patient.

Currently, the quality of life is a multifactorial concept, including.<sup>9</sup>

- a sense of satisfaction in everyday life in relationships with others and professional activity;
- the ability to appreciate pleasure;
- the ability to take responsibility for their actions, memories and proposed projects.

For a long time, many studies have been conducted and published that have shown a close relationship between quality of life and oral health in different age groups.

The presence of diseases in the adult population, such as periodontal disease, dental caries, fillings or tooth loss can cause pain, inability to smile, swallow, chew, taste or kiss, and this can jeopardize psychosocial status and negatively affect the ability to express oneself, communicate and aesthetics of the face and even professional life. Patients with poor quality of life characterized their oral health as inferior and were more prone to depression.

If quality of life is accepted as an entity, there must be ways in which it can be quantified. In recent decades, the development of tools for assessing well-being and quality of life has intensified.

There are many tools for evaluating coefficients that measure patients’ oral health and quality of life. To measure the impact of oral cavity lesions on people’s quality of life, epidemiological studies used clinical assessments and definitions that assess patients’ subjective perception of the impact of oral cavity conditions on their daily life and health.

Separate studies have shown that there is a correlation between poor quality of life and insufficient oral care, as the leading factor here is limited access to dental services. Other studies have revealed a correlation between a person’s socio-economic situation and the quality of life.

When assessing the need for dental treatment, not only regulatory needs are taken into account, but also social and dental impact and behavioral factors. Such an assessment system is formed within the framework of the multifactor approach model and includes the following:

- clinical assessment of oral hygiene and regulatory needs at the present moment;
- general state of health;

- subjective perception of the patient’s treatment needs, the consequences of the influence of oral health on functional, psychological and social aspects;
- the tendency to adopt sanogenic behavior [10].
- The use of this socio-dental system is aimed at streamlining the treatment process and, thus, increasing its usefulness
- in planning oral care.

The concept of quality of life should include not only factors such as changes in general health, pain or functional disorders, but also emotional or social aspects related to oral health.

Oral health is an important aspect of the quality of life of the population and has significant health consequences. There are patients who become depressed as a result of tooth loss, and for others (especially those with low socio-economic status), tooth loss can often be a “normal phenomenon”. However, it cannot be said that patients with low socio-economic status react emotionlessly to adentia, especially when it compromises aesthetics

## DISCUSSION

Two strategies have been proposed, namely: *high risk* and *population-based*. The high-risk strategy aims at prevention at the tail end of the high-risk distribution by providing preventive measures to susceptible patients. Several preventive measures have been proposed in the literature, for example, the identification of children at high risk of developing caries through dental screening and treatment with dental sealants to prevent caries. The research also explored ways to improve the effectiveness of sealants for pits and cracks. Clinical trials and systematic reviews have concluded that the use of topical silver and fluoride is effective in preventing and stopping caries. However, this approach focuses on the causes of diseases in each person and mainly depends on health care providers. Thus, a *high risk* in itself can be considered as temporary and palliative, since it does not change the social norms that determine the impact, and does not eliminate the main reasons why oral diseases continue. In addition, any approach focused on individual behavior can also increase inequalities in oral health, as people with higher education and higher levels of well-being who have more control over their lives are more likely to respond well to this individualistic approach.

The causes of the social spread of dental diseases have not been fully studied. Despite several decades of recognition of differences in oral health and the political mandates needed to reduce this problem, low-income segments of the population, ethnic minorities and rural populations still experience inadequate access to quality dental care.<sup>11</sup>

In fact, the individual habit of oral hygiene is socially conditioned. Discovering how to change social norms to create a healthier lifestyle is a big challenge. Some *population-based* approaches have been proposed, such as changing legislation related to oral health, including sugar taxation using changing incentives for healthy eating and water fluoridation. The advantages of this *population-based* approach are that it is radical and powerful in accordance with the preventive paradox. Ideally, oral hygiene policies should include a

universal population-based approach and target high-risk groups, thereby adding significant benefits to current efforts to ensure equity in oral health. However, resources are always limited. The costs, outcomes and availability of health resources must be balanced to ensure their long-term sustainability. Well-conducted research on this topic is required.

Several oral health programs or interventions published in the literature have shortcomings, as fundamental knowledge and translation gaps are not fully recognized. Feasible and scalable multi-level interventions are needed, driven by interdisciplinary research collaboration involving a broad group of stakeholders, which will ultimately lead to more sustainable changes than targeted interventions for each individual. In addition, it is necessary to strengthen cooperation and networking between dental service providers, researchers and policy makers to overcome the difficulties associated with implementation.<sup>12,13</sup>

It is necessary to systematically evaluate programs among low-income groups of the population. Natural experiments on oral care reform and policies for monitoring their effects should be reported. The demonstration of large-scale public projects using effective evidence-based approaches should be documented. Finally, research is important on how to provide sufficient incentives for service providers at the individual and organizational levels. Research on payment and delivery reform, along with related legislative and regulatory changes, is limited. Further work on these issues is necessary in order to make oral care more sustainable, with promising results and affordable treatment costs that are really beneficial.

## CONCLUSION

Currently, oral diseases are one of the main public health problems both globally and nationally.

Oral health and hygiene, as an important part of the general state of health, can negatively affect the quality of life of the population. Assessment of the quality of life from the point of view of health is a necessary tool in diagnosis, treatment plan and prognosis. This allows you to assess the level of acceptability of the patient's treatment plan or even changes in the treatment regimen depending on the needs and expectations of the patient, which ultimately ensures the success of treatment.

Although the vast majority of oral conditions are not life-threatening, they are responsible for reducing the quality of life of patients, causing pain, suffering, functional, aesthetic, nutritional or even psychological problems. Health education programmes based on self-perception and self-control should be encouraged everywhere.

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## REFERENCES

1. Kassebaum N. J, Bernabé E., Dahiya M., Bhandari B., Murray C. J., and Marcenes W. (2014). Global burden of severe periodontitis in 1990-2010: a systematic review and meta-regression. *J. Dent. Res.* 93, 1045-1053.
2. Kassebaum N. J, Bernabé E., Dahiya M., Bhandari B., Murray C. J., and Marcenes W. (2015). Global burden of untreated caries: a systematic review and metaregression. *J. Dent. Res.* 94, 650-658.
3. Genco R. J., and Sanz M. (2020). Clinical and public health implications of periodontal and systemic diseases: an overview. *Periodontol.* 2000 83, 7-13.
4. Gaonkar P. P., Patankar S. R., Tripathi N., and Sridharan G. (2018). Oral bacterial flora and oral cancer: the possible link? *J. Oral Maxillofac. Pathol.* 22, 234-238.
5. Gao S. S., Chen K. J., Duangthip D., Lo E. C. M., and Chu C. H. (2020). The oral health status of Chinese elderly people with and without dementia: a cross-sectional study. *Int. J. Environ. Res. Public Health.* 17:1913.
6. Chen K. J, Gao S. S., Duangthip D., Lo E. C. M., and Chu C. H. (2019). Prevalence of early childhood caries among 5-year-old children: a systematic review. *J. Investig. Clin. Dent.* 10:e12376.
7. Chen K. J, Gao S. S., Duangthip D., Lo E. C. M., and Chu C. H. (2018). Managing early childhood caries for young children in China. *Healthcare* 6:11.
8. Duangthip D., Wong M. C. M., Chu C. H., and Lo E. C. M. (2018). Caries arrest by topical fluorides in preschool children: 30-month results. *J. Dent.* 70: 74-79.
9. Peres M. A., Macpherson L. M. D., Weyant R. J., Daly B., Venturelli R., Mathur M. R., et al. (2019). Oral diseases: a global public health challenge. *Lancet* 394, 249-260.
10. Yon M. J. Y, Gao S. S., Chen K. J., Duangthip D., Lo E. C. M., and Chu C. H. (2019). Medical model in caries management. *Dent J.* 7:37.
11. Mabangkhru S., Duangthip D., Chu C. H., Phonghanyudh A., and Jirattanasopha V. (2020). A randomized clinical trial to arrest dentin caries in young children using silver diamine fluoride. *J. Dent.* 9:103375.
12. Bedi R. (2018). The sugar tax: a leadership issue for the dental profession and an opportunity to demonstrate that oral health is part of general health. *Contemp. Clin. Dent.* 9, 149-150.
13. Sergeev, Y. A., Markov, A. A., Sukmana, B. I., Uinarni, H., Matveeva, E. A., & Nalbiy, T. S. The Use of Ultrasonic Instrumentats in the Dental Practice. *Journal of Pharmaceutical Research International.* 2020; 32(22), 152-159.
14. Nenasheva, E. V., Larina, A. O., Achmad, H., Timokhina, T., & Markov, A. Bioelectronic Implants and Their Role in Modern Medicine. *Journal of Pharmaceutical Research International.* 2020; 32(33), 23-31.