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## **ORAL HYGIENE: PROBLEMS AND PERSPECTIVES**

**Abstract.** The aim of this work is to examine current approaches and challenges in the study of oral hygiene within modern dentistry. Key findings reveal that while personal hygiene is crucial, it may not always ensure thorough oral cleaning. Hence, professional hygiene by a dentist plays a vital role in treatment and prevention. The analysis of publications on the specified topic showed the following. Research trends encompass exploring new technologies, understanding the oral microbiome, utilizing telemedicine, and investigating the systemic health's influence on oral health. These endeavors aim to enhance oral care and promote overall well-being. Studying the oral microbiome is a new area of research that may lead to the development of new products aimed at maintaining the balance of the microbiome and preventing disease. The use of telemedicine allows access to professional consultation and care, even remotely. This is especially important in remote or hard-to-reach areas. Studying the impact of systemic health on the oral cavity is important to understand the relationship between these two aspects of health. Research shows that the state of systemic health can affect the health of the oral cavity and vice versa. This research helps develop strategies to prevent and treat oral diseases and improve overall health. Scientists have proven that the prevalence and severity of dental morbidity are closely related to socio-economic status. In many low- and middle-income countries, oral diseases are largely untreated due to high costs. In addition, the lack of professional dental personnel and financial burdens also increase the inequity in the distribution of dental care. Therefore, the main trends in oral hygiene research include the development of new technologies and products, the study of the oral microbiome, the use of telemedicine, the study of the impact of systemic health on the oral cavity, statistical research and hygiene literacy. These trends are aimed at improving oral care and maintaining overall health.

**Key words:** hygiene, hygiene literacy, dental morbidity, prevention.

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## ГІГІЕНА РОТОВОЇ ПОРОЖНИНИ: ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ

**Анотація.** Метою даної роботи є вивчення сучасних підходів та проблем у вивченні гігієни порожнини рота в сучасній стоматології. Основні висновки показують, що, хоча особиста гігієна має вирішальне значення, вона не завжди може забезпечити ретельне очищення порожнини рота. Тому дотримання професійної гігієни стоматологом відіграє важливу роль у лікуванні та профілактиці. Аналіз наукових публікацій за даною темою показав наступне. Тенденції досліджень охоплюють вивчення нових технологій, розуміння мікробіома ротової порожнини, використання телемедицини та дослідження впливу системного здоров'я на здоров'я порожнини рота. Ці зусилля спрямовані на покращення догляду за ротовою порожниною та сприяння загальному самопочуттю. Вивчення мікробіому ротової порожнини є новою областю досліджень, яка може призвести до розробки нових продуктів, спрямованих на підтримку балансу мікробіому та запобігання захворюванням. Використання телемедицини дозволяє отримати професійну консультацію та допомогу навіть дистанційно. Це особливо важливо у віддалених або важкодоступних районах. Вивчення впливу системного здоров'я на ротову порожнину є важливим для розуміння зв'язку між цими двома аспектами здоров'я. Вчені довели, що поширеність і тяжкість стоматологічної захворюваності тісно пов'язані з соціально-економічним статусом. У багатьох країнах із низьким і середнім рівнем доходу захворювання ротової порожнини здебільшого не лікуються через високі витрати. Крім того, брак професійного стоматологічного персоналу та фінансовий тягар також збільшують несправедливість у розподілі стоматологічної допомоги. Дослідження показують, що стан системного здоров'я може впливати на здоров'я ротової порожнини і навпаки. Це дослідження допомагає розробити стратегії профілактики та лікування захворювань порожнини рота та покращити загальний стан здоров'я. Тому основні тенденції досліджень гігієни ротової порожнини включають розробку нових технологій і продуктів, вивчення мікробіому порожнини рота, використання телемедицини, вивчення впливу системного здоров'я на порожнину рота, статистичні дослідження та гігієнічну грамотність. Ці тренди спрямовані на покращення догляду за порожниною рота та збереження здоров'я в цілому.

**Ключові слова:** гігієна, гігієнічна грамотність, стоматологічна захворюваність, профілактика.

**Introduction.** The study of oral hygiene is very relevant and is of great importance for maintaining general health. Proper oral care, including brushing, removing plaque, and using antibacterial agents, helps prevent diseases that may occur, such as tooth decay, gingivitis, periodontitis, and others. Oral hygiene also

affects the general state of health. Research shows that poor oral hygiene can be associated with an increased risk of cardiovascular disease, diabetes, gastrointestinal problems, and other problems. Healthy teeth and fresh breath are important aspects of appearance and self-esteem. Clean teeth and a healthy oral cavity help preserve the white color of teeth, prevent the appearance of dental plaque and unpleasant odor. Regular oral care helps prevent the development of serious problems such as tooth decay or periodontitis. This can significantly reduce treatment costs and save the time and effort required to treat these conditions.

Therefore, the study of oral hygiene is very important for maintaining general health and preventing the development of diseases. Given the growing population and increasing health awareness, this study is becoming increasingly relevant and requires further research and development.

The **purpose** of the work is to review current directions and issues of studying oral hygiene in modern dentistry.

The analysis of publications on the specified topic showed that the main trends in oral hygiene research include:

Development of new technologies and products. Researchers are constantly working on improving and developing new technologies and products for oral hygiene. This includes the development of new toothbrushes, toothpastes, mouthwashes, and other products that may be more effective in preventing disease and maintaining oral health [1].

Study of the oral microbiome: The oral microbiome is becoming an object of active research. Researchers are studying the role of the microbiome in oral health and its impact on overall health. This research may lead to new approaches to oral hygiene, including the development of probiotics and other products aimed at maintaining the balance of the microbiome [2].

Use of telemedicine. Thanks to the development of telemedicine, people can get advice from a dentist or oral hygienist without visiting a hospital or clinic. This allows access to professional advice and care even remotely, which is especially important in remote or hard-to-reach areas. This trend became especially popular during the pandemic [3].

Study of the influence of systemic health on the oral cavity. Studies show that the state of systemic health can affect the health of the oral cavity and vice versa [4]. For example, chronic diseases such as diabetes, cardiovascular disease and gastrointestinal problems can increase the risk of developing oral diseases such as tooth decay, gingivitis or periodontitis. On the other hand, diseases of the oral cavity, such as inflammation of the gums or periodontitis, can have an impact on the general state of health. For example, inflammation in the oral cavity can cause the release of bacteria into the blood, which can increase inflammation in other parts of the body and worsen the course of chronic diseases. Studying the impact of systemic health on the oral cavity is important for understanding the relationship between these two aspects of health and for developing prevention and treatment strategies. Research

in this area can contribute to the improvement of diagnosis, prevention and treatment of diseases of the oral cavity, as well as general health.

**Statistical studies.** Scientists have proven that the prevalence and severity of dental morbidity are closely related to socio-economic status. In many low- and middle-income countries, oral diseases are largely untreated due to high costs. In addition, the lack of professional dental personnel and financial burdens also increase the inequity in the distribution of dental care [5].

**Hygiene literacy.** Knowledge and use of hygiene products by patients does not always indicate the quality of oral hygiene. Therefore, not only sanitary and educational work is necessary, but also individual oral hygiene training for each patient at the dentist's appointment. First, professional teeth cleaning is carried out with special brushes with abrasive pastes, strips, rubber bands until the patient feels the smooth and even surface of the tooth enamel. If necessary, removal of supra- and subgingival tartar, as well as removal of pigmented plaque from teeth, coating of teeth with protective varnish. Next, the patient is taught the correct technique of brushing teeth by a dentist. It is known that the main goal of brushing is the thorough removal of biofilm (soft) plaque. The peculiarities of the structure of the teeth are facilitated by the fact that the rate of formation of biofilm (plaque) and its amount on chewing teeth is two times greater than on the front and side groups of teeth. The most biofilm accumulates in the area where the gums attach to the tooth enamel, and these areas require the most thorough cleaning [6].

Previously, all recommendations for hygienic brushing of teeth were regulated by time and a set of standard movements with a toothbrush (reciprocating, vertical, horizontal, circular, etc.), while the group of teeth and the amount of soft plaque were not taken into account. Modern scientists have proposed a modified method of brushing teeth, it is based on the use of one type of toothbrush movements on the vestibular (front) and oral (back) surfaces of the teeth - vertical, and on the chewing surfaces - horizontal. It has been clinically proven that to remove biofilm from the front teeth, it is enough to make about 20 vertical movements with a brush, from canines and premolars - 25, and from chewing teeth - up to 30 movements. It is desirable to start with the chewing teeth, gradually grabbing 2-3 teeth at a time and moving towards the front teeth. Vertical movements should capture the mucous membrane of the gums as much as possible. The entire cleaning procedure takes about three minutes. The time of using dental floss and elixirs is not taken into account here [7].

The regularity of cleaning can be individual, it is usually in the morning after breakfast and in the evening before going to bed to remove all food residues, soft dental plaque. Oral hygiene is monitored by a dentist. He also gives recommendations on the use of toothpastes, gels, elixirs and other means for cleaning teeth. Toothpastes play an important role in cleaning teeth and are an excellent means of delivering active components that help to cope with gum problems and ensure the aesthetics of teeth.

Unfortunately, personal hygiene does not always allow for high-quality cleaning of the oral cavity. A very important component of treatment and preventive measures is professional hygiene, which is regularly carried out by a hygienist. Professional oral hygiene is a regular set of measures carried out by a dentist, aimed at preventing the development of caries and periodontal diseases [8]. Professional oral hygiene includes the following measures:

- professional teeth cleaning;
- controlled oral hygiene;
- use of mineralizing compounds.

There are three forms of oral cavity rehabilitation:

- individual – rehabilitation of persons who independently sought medical help;
- one-time (periodic) rehabilitation of a limited contingent of the population;
- planned and systematic implementation of medical and preventive measures in organized population groups.

There are centralized and decentralized methods of rehabilitation. With the centralized method, examinations and remediation are carried out in a medical and preventive institution. With decentralized - examinations are carried out in medical offices of enterprises or educational institutions.

**Conclusions.** Oral hygiene is the main preventive measure, which must be carried out according to all the rules, regardless of the age of a person and the state of health of his teeth. Unfortunately, personal hygiene does not always allow for high-quality cleaning of the oral cavity. A very important component of treatment and preventive measures is professional hygiene, which is regularly carried out by a hygienist. Professional oral hygiene is a regular set of measures carried out by a dentist, aimed at preventing the development of caries and periodontal diseases.

Major trends in oral hygiene research include the development of new technologies and products, the study of the oral microbiome, the use of telemedicine, and the study of the impact of systemic health on the oral cavity. The development of new technologies and products is aimed at creating more effective oral hygiene products, such as toothbrushes, toothpastes and mouthwashes. This makes it possible to improve the prevention of diseases and maintain the health of the oral cavity. The study of the microbiome of the oral cavity is a new direction of research. Researchers are studying the role of the microbiome in oral health and its impact on overall health. This could lead to the development of new products aimed at maintaining the balance of the microbiome and preventing disease. The use of telemedicine allows access to professional advice and care, even remotely. This is especially important in remote or hard-to-reach areas. Research shows that the state of systemic health can affect the health of the oral cavity and vice versa. This research helps develop strategies to prevent and treat oral diseases and improve overall health. Therefore, the main trends in oral hygiene research include the development of new technologies and products, the study of the oral microbiome, the use of telemedicine,

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