Assessment of the Awareness and Oral Hygiene Practices among Patients with Gum and Periodontal Diseases

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Abstract: The level of awareness and practice of hygiene of the average person with periodontal and periodontal tissue diseases remains low and needs to be strengthened by receiving constant information, monitoring and some training from the dentist. The aim of the research is to assess awareness and practice of oral hygiene in patients with gum and periodontal diseases.

Methods: 140 people were divided into two groups: I - control group (CG), relatively healthy individuals (n=40), II - patients with gum and periodontal diseases (n=100), who were interviewed, determined the Simplified Oral Health Index (OHI-S) and periodontal index at the first visit to the dentist and 6 months later.

Results: Correct responses too ralhy giene questions differed significantly between groups, with the highest meanin group I and the lowest in group II. There was no statistically significant difference between the groups in termsof frequency of brushing, duration, care products, or brushing techniques. Ingroup I, the OHI-S index corresponded to a satisfactory state of hygiene (1.53 ± 0.08) compared to the control group (0.17 ± 0.01) (Table **4**), while the period on talindex corresponded to the presence of gingivitis (0.81 ± 0.03) compared to the control group (0.21 ± 0.09).

Conclusions: The importance of careful attention to oral hygiene, the use of various means to reduce inflammation and bleeding gums, and the reduction of dental plaque are important parameters in the prevention of gum and periodontal diseases.

Prospects: Further study of awareness and oral hygiene practice with therapy in patients who have gum and periodontal diseases is required.

Keywords: Hygiene, periodontitis, microbial biofilm, prevention of gum and periodontal diseases.

1. INTRODUCTION

Oral health is vital to a person's overall well-being, body health, and quality of life. Most oral diseases and conditions are primarily related to maintaining oral hygiene, except that people suffer from different oral diseases at different times in their lives. With longer life expectancies, people have teeth affected by periodontal disease that will require not only professional care but also home gum care [1].

Gum disease can cause pain, problems when eating and speaking, low self-esteem, and even tooth loss and the need for surgery. The main cause of periodontal health is the accumulation of dental plaque, which is a hard deposit that forms on the surface of teeth and consists of a complex microbial community. It is the etiological agent of major dental diseases, such as caries and periodontal disease. In advanced cases, periodontitis leads to tooth loss and reduced quality of life. The aetiology of periodontitis is multifactorial. A sub gingival dental biofilm induces an inflammatory and immune response in the host, ultimately leading to irreversible destruction of the periodontium (i.e., alveolar bone and periodontal ligament) in a susceptible host. Control of plaque bio films has a positive effect on the reduction of periodontal diseases among the population. Proper oral hygiene is considered important for oral health [2, 3].

The relationship between increased knowledge and improved oral health has been found [4, 5]. Today, there are two main ways to prevent the formation of dental plaque in the interdental spaces of the teeth: professional prevention, which includes the maximum removal of dental plaque from the areas of eruption of the dental unit during professional oral hygiene; home prevention, which involves the daily use of special hygiene products and their individual selection.

Therefore, it is important to provide information about proper oral hygiene methods and consolidate knowledge. The Samplified Oral Hygiene Index (OHI-S) and the Periodontal Index are used to determine the level of oral hygiene and the condition of periodontal

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tissues. Experts from different countries develop guidelines after a thorough literature review and focus group discussions [1]. Adherence to these practices results in reduced plaque and improved gum health [6].

The aim of the research is to assess awareness and practice of oral hygiene in patients with gum and periodontal diseases.The aim involved the fulfilment of the following research objectives:

- Assess the participants' awareness, consciousness and oral hygiene practices among patients with gum and periodontal diseases according to the survey data;
- Determine the level of oral hygiene and the condition of periodontal tissues using the OHI-S and the Periodontal Index in patients with gum and periodontal diseases;
- Study the changes in the level of oral hygiene in patients with gum and periodontal diseases after the information provided by the dentist.

2. LITERATURE REVIEW

In recent years, the cumulative prevalence of major oral diseases such as gingivitis and periodontitis has remained high [1, 7]. Periodontal disease is a chronic inflammatory multifactorial disease where bacteria and their toxins are the main causative factors, but most tissue destruction occurs as a result of the body's response to the periodontal microbiome. In human health, there is a dynamic balance between the host, the environment, and the microbiome. Environmental factors, mainly tobacco smoking and psychological stress, disrupt symbiotic relationships [2, 8].

Dental plaque is a highly organized and specialized biofilm composed of an intercellular matrix composed of various microorganisms and their by-products [3]. Biofilm bacteria include *Prevotella intermedia, Prevotella Nigrescens, Prevotella microbes,* and *Fusobacterium nucleatum*, which shifts toward the red complex as the disease progresses. It consists of *Tannerella forsythia, Tannerella Denticola and Porphyromonas Gingivalis*, which are mainly found in deep periodontal pockets of patients with periodontitis [9]. So, disruption of the oral bio film using mechanical methods remains one of the best treatment options [8, 10].

Approximately 47.2% of adults aged 30 years and older and 70.1% of adults aged 65 years and older have been diagnosed with periodontal disease in the US [11]. According to [8], worldwide, the severe form of the disease has an incidence of 11%, affecting 743million people. Periodontitis is characterized by the progressive destruction of the tooth-supporting apparatus [7, 12]. If left untreated, it can lead to tooth loss and periodontal tissue damage. It can be contained over the long term if periodontal disease is treated and patients regularly attend supportive care [13, 14].

Using a toothbrush is the most important to ensure oral hygiene. As shown in [1][15], manual brushing was the most frequently used oral hygiene procedure at 77.6%; approximately 40.5% of patients followed a regular schedule of changing their toothbrush every three months. A total of 33.8% of patients with periodontitis placed the brush at the cement enamel junction (CEJ), first moved it back and forth, and then made wide movements in the tooth direction [16, 17].

Other studies found that home practices of oral hygiene in urban and rural India included brushing only once a day (42%) with toothbrush and toothpaste as the preferred cleaning agent (68%). Flossing and interdental cleaning as methods of maintaining oral health were chosen by a limited part of the population (<30%), and > 70% visited the dentist only when absolutely necessary [1, 18].

Risk factors are very important for an individual's response to periodontal infection, post-treatment healing, and the maintenance phase [11, 19]. Scientists have confirmed that identifying risk factors at an early stage, targeting patients for prevention and specialized therapy, will help reduce periodontal disease (Sanz, *et al*., 2020; Tobias, & Spanier, 2020) [12, 20]. These independent but modifiable risk factors for periodontal disease include smoking and alcohol consumption, diabetes, obesity, metabolic syndrome, osteoporosis, and low levels of dietary calcium and vitamin D [2, 12].

Based on statistical data, it has been shown that the level of awareness and hygiene practices of the average patient with gum and periodontal tissue diseases remains low, which requires strengthening by receiving constant information, monitoring and some training from the dentist.

Today, there is no two-pronged strategy to improve the overall oral health of patients: promoting awareness, consciousness of oral health and disease prevention, and strengthening the provision of oral care.

3. MATERIALS AND METHODS

The set aim and research objectives determined the selection of quantitative and qualitative methods for determining the level of oral hygiene. The inclusion criteria were patients who visited a dentist for preventive purposes with satisfactory oral hygiene, who were included in the control group, as well as patients with gum and periodontal disease (group II). Exclusion criteria were patients with implants, diseases of the maxillofacial tissues, and other concomitant dental pathologies. Figure **1** presents the research design, division of patients into groups and research methods.

3.1. Sample

The study involved a total of 140 people aged 18 to 46, who were divided into two groups: I — control group (CG), relatively healthy individuals (n=40), II - patients with gum and periodontal diseases (n =100).

Inclusion criteria Patients who visited the dentist for preventive purposes with satisfactory oral hygiene, as well as patients who had gum and periodontal diseases. Exclusion criteria: patients with implants, with maxillofacial tissue diseases and other accompanying dental pathologies.

Questionnaire data were collected from all patients to analyse knowledge, attitudes, and behaviours related to dental care habits. The data were collected using commonly accepted questionnaires that were self-administered by patients [21].

During the first visit, all patients, both in the CG and experimental group (EG), received information and training from the dentist about brushing teeth, cleaning interdental spaces and general preventive oral care.After6 months, there was a repeat visit for the purpose of a preventive examination and assessment of the individual oral hygiene. A dental specialist assessed each patient personally and instructed on home oral hygiene to achieve the most effective results. The dentist provided evidence-based recommendations that helped the patient to choose a particular interdental cleaning agent [22, 23]. All patients were asked to answer 60 multiple-choice questions, including 11 related to general and demographic information (such as age, gender), 30 related to oral hygiene habits (regarding brushing technique and time, etc.) and 19 related to awareness/ knowledge about toothbrush care. The questionnaire examined oral care habits through such questions as “Where did you learn to brush your teeth”, “Are there concomitant diseases”, “Smoking”, “Frequency of brushing your teeth”, “How do you brush your teeth” and “Frequency of your visits to the dentist”. Participants’ awareness and consciousness were assessed, and they were asked questions such as

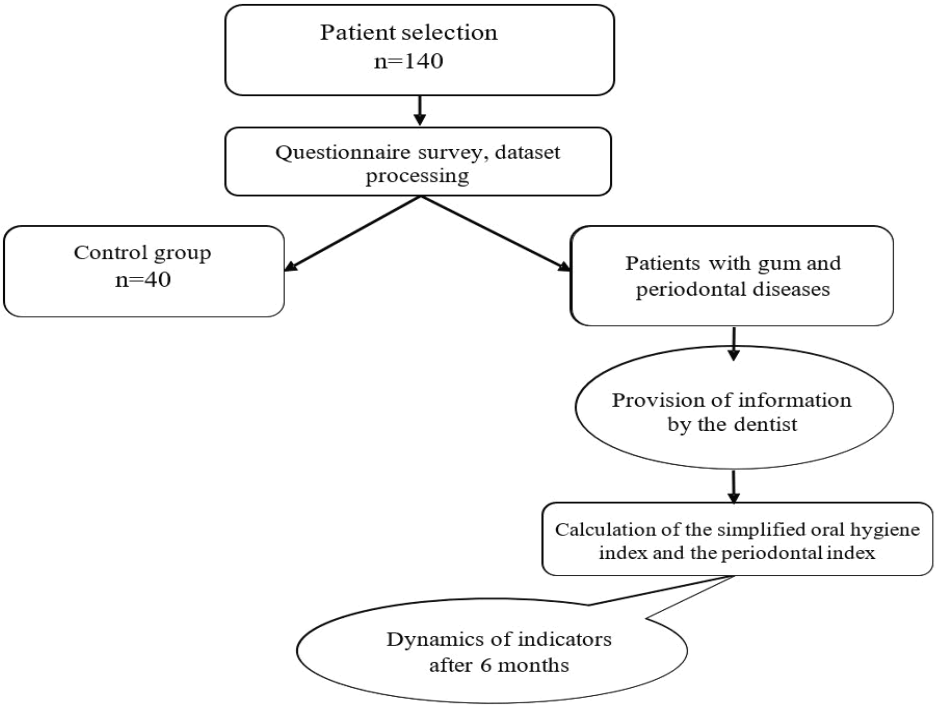

Figure 1: Research design for the survey of patients with gum and periodontal diseases.

"Factor that caused gingivitis and periodontitis" and "Effect of systemic disease", "How many minutes", and "How often did you brush your teeth". There was also a "Don't know" option for the questions included in the questionnaire. The individuals who did not answer all the questions in the questionnaire used in the study, or who refused to complete the questionnaire survey, were not included in the study.

3.2. Data Collection

The Simplified Oral Hygiene Index (OHI-S) first described by J. Greene and J.R. Vermillion (1964) was used to determine the oral hygiene level.It was calculated by the formula:

OHI-S = ∑ DP/n + ∑ DC/n, where

∑ is the sum of values,

DP —dental plaque,

DC — dental tartar,

n — the number of examined teeth.

The method of determining this Index is defined visually, without staining, the research is carried out with the help of a dental probe, pushing its tip towards the gums, 6 key teeth: buccal surface 16 and 26; labial surface 11 and 31; lingual surface 36 and 46.

A value of 0 - 0.6 (low) corresponds to good hygiene;

0.7 - 1.6 (medium) – satisfactory hygiene;

1.7 - 2.5 (high) – unsatisfactory;

more than 2.6 (very high) — poor oral hygiene.

The periodontal tissues condition was calculated by using the Periodontal Index named after A.L. Russell according to the formula:

PI Index = sum of scores for each tooth/ number of teeth in the patient × 100.

The following estimates are used for the Periodontal Index:

0 – no changes and inflammation;

1 – mild gingivitis (there is no inflammation of the gums around the tooth);

2 – gingivitis without damage to the attached epithelium (the pathological pocket is not defined);

3 – gingivitis with the formation of a periodontal pocket, there is no functional impairment, the tooth is not mobile;

4 – assessment of the bone tissue condition based on the X-ray data, which is manifested by the disappearance of the closing cortical plates on the tops of the alveolar ridge, which is especially important for diagnosing the initial stage of the periodontal pathology;

5 –a periodontal pocket 3-6 mm deep;

6 –a periodontal pocket more than 6 mm deep;

7 – initial destruction of all periodontal tissues;

8 – marked destruction of all periodontal tissues, the mobility of the tooth remains/may be displaced.

The periodontium condition is assessed in each tooth from 0 to 8, taking into account the degree of gums inflammation, tooth mobility and the periodontal pocket depth. In doubtful cases, the highest possible score is assigned.

Index value: 0.1-1.0 — initial and mild periodontal disease;

— moderate periodontal disease;

— severe periodontal disease.

3.3. Instruments

Statistical processing of the obtained data was carried out using Microsoft Excel 5.0 and Statistica 6.0. Statistical analysis was performed with determining mean values (M) and standard error of an arithmetic mean (±m). The probability of data was calculated according to Student's t-test, the difference was considered p-value p. Differences between treatment means were examined using the Bonferroni t-test ($P < 0.05$). Quantitative indicators were compared using the Mann-Whitney U-test. Statistical significance was assessed at a level not lower than 95.0% ($p<0.05$).

3.4. Ethical Criteria

The research was carried out in accordance with the provisions of the Council of Europe Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine (1997), Ethical Principles of Medical Research Involving Human Subjects adopted by the

Assembly of the World Medical Association (2000), General Declaration on Bioethics and Human Rights, according to the principles of the Declaration of Helsinki (1964). The research complied with the current regulatory requirements of Ukraine and was approved by the local commission on medical ethics, informed consent was obtained from all patients.

4. RESULTS

The analysis of the obtained data showed that the oral cavity condition, the level of consciousness and hygiene practices according to the questionnaire data differed significantly in the CG compared to the patients with gum and periodontal diseases (Table **1**). The largest number of correct answers to questions about oral hygiene was received by persons who were included in the 1st group.

Correct answers to oral hygiene questions differed significantly between groups, with the highest mean in Group I and the lowest in Group II. Group I had the highest rate of correct answers (90.0%) to the question "What is dental plaque?" compared to Group II. The number of correct answers to the question "Which disease is characterized by gums bleeding while brushing teeth?" was as close as in Group I — 56.0%. The proportion of correct answers to the question "What causes tooth and gum disease?" was the highest in Group I and was 90.0%, while 30.0% of patients in Group II answered "I don't know". The percentage of people in Group I versus 64.0% of Group II and the question "When is the most important time to brush your teeth?" showed a higher percentage of "Morning" in 90.0% of patients in Group I and 48.0% of patients in Group II.

There was no statistically significant difference between the groups in terms of how the dentist prescribed brushing or type of records for periodontal disease and oral hygiene habits ($p > 0.05$). In all groups, the majority of patients noted that they had previously visited a dentist and received information about oral care. There was no statistically significant difference between the groups regarding systemic disorders ($p > 0.05$). There was a statistically significant difference between the groups regarding smoking status and number of cigarettes consumed ($p < 0.05$). A significant difference between the groups was established

Table 1: Comparison of the Oral Hygiene Awareness in the CG and Patients with Gum and Periodontal Diseases, N=140

Question ("In your opinion"):	Group I, n(%)	Group II, n(%)
What is dental plaque?		
Soft deposit on the teeth	36(90.0)	64(64)
I do not know	4(10.0)	36(36)
What happens to plaque in the mouth?		
Caries and/or gum inflammation	39(95.0)	54(54.0)
I do not know	2(5.0)	46(46.0)
Which disease is characterized by gums bleeding while brushing teeth?		
Dental caries	0(0)	6(6.0)
Gum disease	40(100.0)	38(38.0)
I do not know	0(0)	56(56.0)
What is the main cause of tooth and gum diseases?		
Plaque is the most common cause of tooth and gum disease	34(85.0)	6(6.0)
Tartar	4(10.0)	46(46.0)
I do not know	2(5.0)	48(48.0)
How can we prevent tooth and gum disease?		
Regular oral care and/or visits to the dentist	36(90.0)	64(64.0)
Taking medication	0(0)	6(6.0)
I do not know	4(10.0)	30(30.0)
When is the most important time to brush your teeth?		
In the morning	36(90.0)	48(48.0)
Afternoon	2(5.0)	12(12.0)
Before bedtime	2(5.0)	40(40.0)
I do not know	0(0)	0(0)

regarding tooth brushing frequency, duration, care products or brushing technique (p>0.05). For patients with a lack of motivation, the use of light dental floss, oral irrigation, and small (0.6–0.7 mm) interdental brushes has been recommended to have the greatest effect on interdental plaque removal. The use of gingival stimulators and/or wooden sticks has also been recommended in cases of significant gingival inflammation.

The presented data confirm the effectiveness of the use of professional oral hygiene products by patients themselves to reduce inflammation and bleeding gums, dental plaque, which are important indicators in the prevention of gum and periodontal diseases. Individual oral hygiene often involves brushing with gentle pressure at least daily for 2-3 minutes, and if necessary, in most cases, the frequency of brushing should be increased to three times a day (2 minutes), in particular manual or electronic brushing recommended as a primary method of prevention, as well as to reduce plaque and gingivitis.

It was established based on the obtained data (Figure **2**), that out of 140 examined people, they brush their teeth more often only once a day (75.7%) and 64 (45.7%) do it only in the morning. When asked about the duration of brushing teeth, 86 patients (61.4%) answered that this procedure takes them 2-3 minutes, and only 20 patients (14.3%) indicated that they brush their teeth for more than 3 minutes, 34 people (24, 3%) - only 1 minute.

In order to assess the initial state of patients with gum and periodontal diseases, oral cavity indices and periodontal index were determined, which made it possible to establish the level of oral hygiene. In people of the 1st group, in 20% of cases, a good and in 80% of cases, a satisfactory state of oral hygiene was established. According to the value of OHI-S, patients of the II group were divided according to the following percentages (Table **2**).

According to the obtained data, a satisfactory state of hygiene was established in 18 (18%) patients, the percentage of such patients increased during the second visit to 36 (36%). Unsatisfactory state of

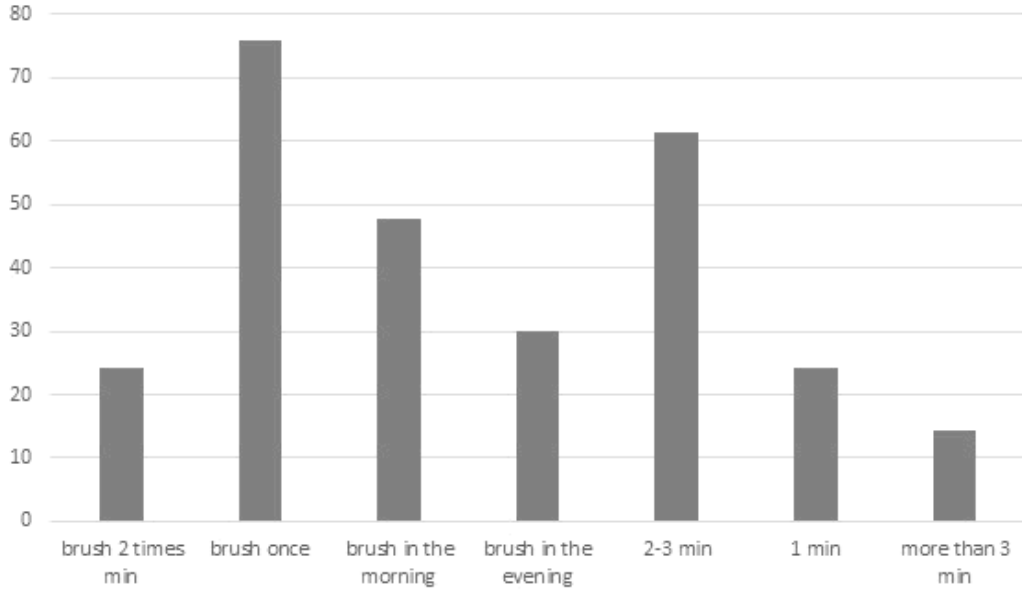

Figure 2: Distribution of patients depending on dental care practices, n=140 (%).

Table 2: Distribution of Patients with Gum and Periodontal Diseases According to the Indicators of the Simplified Oral Hygiene Index in Patients with Gum and Periodontal Diseases, (N=100)

OHI-S value	OHI-S assessment	Oral hygiene assessment	Group II first visit, (%)	Group II after 6 months, (%)
0 - 0.6	low	good	10%	18%
0.7 - 1.6	medium	satisfactory	18%	36%
1.7 - 2.5	high	unsatisfactory	42%	26%
More than 2.6	very high	bad	30%	20%

Table 3: Distribution of Patients with Gum and Periodontal Diseases According to the Periodontal Index, (N=100)

The value of the Periodontal Index	Assessment of the Periodontal Index	Group II first visit, (%)	Group II after 6 months, (%)
0.1–1.0	initial and mild periodontal disease (clinically unchanged gums)	46%	54%
1.5–4.0	mild periodontal disease (II degree of generalized periodontitis)	38%	36%
4.0–8.0	severe periodontal disease (III degree of generalized periodontitis)	16%	10%

Table 4: Indicators of the Simplified Oral Hygiene Index in Patients with Gum and Periodontal Diseases, M±M

Indicators	CG, n=40	Group II First visit, n=100	Group II after 6 months, n=100
OHI-S	0.17±0.01	1.53±0.08*	1.56±0.09*
Periodontal Index	0.21±0.09	0.81±0.03*	0.72±0.03*

hygiene was recorded in 42 (42%) patients, while the percentage of such patients decreased to 26 (26%) after the second visit. A decreased percentage of patients who, according to the indicators of the Simplified Oral Hygiene Index, had a poor hygiene assessment was established - 30 (30%) versus 20 (20%) after 6 months.

It was shown that satisfactory oral hygiene was accompanied by inflammation of periodontal tissues in the form of mild local periodontitis. In some cases, the initial stage of generalized periodontitis was observed. This indicates that there is a pathological effect of concomitant pathology on periodontal tissues, which must be detected and eliminated in the early stages (Table **3**).

It should be noted that after 6 months of observation, after recommendations by the dentist regarding oral hygiene, special mouthwashes, tooth brushing techniques, etc., which helped the patient to choose a certain tool for cleaning teeth and interdental spaces, a positive trend was observed with the values of the Periodontal Index. The obtained data showed an increase in the percentage of patients who entered the gradation of “initial and mild periodontal disease”— 46% (first visit) versus 54% (after 6 months); not a significant percentage of changes occurred in the gradation “mild periodontal disease”— 38% (first visit) versus 36% (after 6 months); at the same time, the percentage of patients who had an assessment of the Periodontal Index “severe periodontitis”, which corresponded to III degree of generalized periodontitis, decreased - 16% (first visit) against 10% after 6 months.

The analysis of the obtained data showed that the OHI–S Index in Group I corresponded to a satisfactory oral hygiene (1.53±0.08) in comparison with the CG (0.17±0.01) (Table **4**), while Periodontal Index indicators corresponded to the presence of gingivitis (0.81±0.03) in comparison with the same indicators in the control group (0.21±0.09).The data were tested for normality of distribution using the Shapiro-Wilktest.

An almost similar picture was revealed during the patients’ second visit, where the OHI–S Index was (1.56±0.09) against the CG (0.17±0.01), the Periodontal Index after 6 months tended to decrease and was (0.72±0.03) compared to the CG (0.21±0.09). No statistically significant difference was found between the indicators after 6 months of observation.

Therefore, the analysis of the obtained data showed that an important part of all preventive measures, the patient motivation in dentistry is to increase the awareness and oral hygiene practices among patients with gum and periodontal diseases. This is realized not only in case of a poor condition of the oral cavity, but also at each preventive examination at the dentist. In order to assess and monitor oral hygiene skills, it is desirable to periodically survey the patient in order to establish the level of his/her awareness of oral hygiene. Emphasis should be placed on the provision of individual recommendations by the dentist on risk factors for the occurrence of complications with improper care of the oral cavity, as well as regular preventive visits to the dental office.

5. DISCUSSION

Periodontal disease and chronic diseases of the oral mucosa affect comfort, function, and quality of life

[14]. Bacteria associated with periodontal disease cause inflammatory reactions in immune cells, which in the later stages of the disease causes the loss of both soft and hard tooth-supporting tissue structures [9, 24].

Regular daily brushing is a key strategy for the prevention and control of periodontal disease and caries, as it destroys the supragingival plaque and reduces the number of periodontal pathogens in the supragingival plaque [25, 26]. Different types of toothbrushes and different brushing techniques have been developed over time to achieve the highest level of plaque removal. However, the observed potential benefit of electric toothbrushing is of unclear clinical significance, as it reduced plaque by 11% after one to three months of use and by 21% after three months of use [3, 27].

Another central aspect of periodontitis treatment concerns modifiable risk factors, which further influence susceptibility to the disease by altering individual body responses. These include smoking and cigarette use, uncontrolled diabetes and obesity, medications that can alter cellular activity in gum tissue, or medications that cause dry mouth or xerostomia. Changes in systemic health, lifestyle, or medication can all affect the oral micro biome, resulting in specific individual patterns [8, 28].

It is noted that all patients should use a toothbrush with a fluoride-containing paste. However, for those patients who are unable to effectively control epigingival biofilm and/or gingival inflammation with mechanical procedures alone, the decision is made whether or not to use a toothpaste and/or mouthwash that contains a specific active ingredient [12].

Mouthwash provides better distribution around the mouth and better pharmacokinetic properties [12]. Some evidence suggests that the additional use of mouthwashes may provide better results than the use of toothpastes. However, the evidence is conflicting and significant differences were observed only for the secondary outcome [29].

Limiting the intake of sugary foods and drinks, regularly removing food residues (optionally with the addition of sugar-free gum) and preventing plaque formation by brushing with fluoridated toothpastes, flossing and brushing after meals will prevent or control periodontitis. Antiseptic rinsing of the oral cavity is an important supplement for the prevention of periodontitis, especially in cases of limited ability to perform mechanical biofilm removal, as well as for the prevention of respiratory infections. Correct functional tooth alignment is essential for optimal mechanical cleaning to prevent plaque build-up [12, 30].

The practical significance of our results lies in the improvement of hygienic indicators through professional support or preventive therapy, a structured system of coordinated follow-up calls to the patient, discussion of follow-up visits and their duration, as well as the appointment of individual care, compliance with oral hygiene regimen, and a healthy lifestyle, which generally prevents gum and periodontal disease.

LIMITATIONS OF THE STUDY

The study was restricted to patients who reported symptoms of gastrointestinal diseases with examination results during follow-up.

CONCLUSIONS

Periodontal diseases are processes caused by the patient's inflammatory reaction to the accumulation of bacterial plaque, and constitute the main part of dental diseases. It was established that they lead to a significant impact on the body functioning and the quality of life for the majority of the population in many countries. The solution to these problems is based on the control of local and systemic risk factors, which are primarily based on home care for oral hygiene and, if necessary, supported at a professional level.

The solution to these problems is based on the control of local and systemic risk factors, which are primarily based on home care for oral hygiene and, if necessary, supported at a professional level.

The presented data confirm the effectiveness of the use of professional oral hygiene products by patients themselves to reduce inflammation and bleeding gums, dental plaque, which are important indicators in the prevention of gum and periodontal diseases. Individual oral hygiene often involves brushing with gentle pressure at least once a day for 2-3 minutes, and if necessary, in most cases it is necessary to increase the frequency of brushing to three times a day (2 min). In particular, manual or electronic brushing is recommended as the main prevention method, as well as to reduce plaque and gingivitis.

So, the obtained results of awareness and practice of the hygienic state of the oral cavity and the state of periodontal tissues showed a positive effect on the

hygienic state of the oral cavity in patients with gum and periodontal diseases after additional explanatory information from the dentist. This issue requires further correction, repeated professional measures and confirmation of the result independently by the patients and under the dentist's control.

Research Prospects

The practical significance of our results lies in the improvement of hygiene indicators, especially in patients in rural areas, by providing professional support or preventive therapy, discussing further visits and their duration, as well as prescribing individual care, adherence to oral hygiene, and a healthy lifestyle, which generally prevents gum and periodontal disease.

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