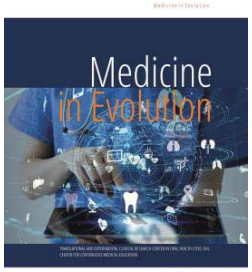
Assessment of Oral Hygiene Behavior in Adults



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Abstract

This research aim to identify oral hygiene behavior as well as to observe attitudes towards oral hygiene. The objective of the present study are to reveal the frequency of dental check-ups, to evaluate the level of knowledge about brushing techniques, oral hygiene aids, importance of oral hygiene as well as the importance of regular check-ups, sources of information about oral hygiene made by individuals involved in the oral hygiene process. The study uses cross-sectional quantitative observational research with an online questionnaire on the Google Forms platform as the primary survey. 94 individuals with the age between 18-45-years old completed the questionnaire regarding oral health behavior. From the sample surveyed it appears that 47.9%(n=45) use an electric toothbrush. It was also observed that 69.1% (n=65) of the individuals flossed regularly and 65.2% (n=61) of these had injured the papilla through incorrect use. Another important and much omitted factor is that 90.4% (n=85) of those questioned rinse immediately after brushing, thus toothpastes with fluoride in their composition cancel out their remineralising effect.

Keywords: oral hygiene, attitudes, knowledge, quantitative research

INTRODUCTION

Oral health-related perceptions, attitudes, and behaviour is in relation to oral hygiene conditions in a young population. In order to improve oral hygiene, in preventive dentistry, educational interventions have often assumed that improved knowledge automatically leads to beneficial oral health behavioural actions (1). Maintaining oral health involves adopting specific behaviors like dental check-ups, frequent toothbrushing, healthy diet, and floss use. These behaviors are crucial in preventing dental caries and periodontal disease, as they reduce the prevalence of these diseases and aid in early diagnosis and prevention of oral diseases. Regular dental services are also essential for maintaining a proper oral health (2-4). Social-cognitive factors, such as the beliefs and attitudes of individuals towards health, may have a marked influence on the health actions of individuals and consequently on their health condition (5). Indivduals' behavior is influenced by their own choices, motivations, lifestyle, beliefs, and value system, as well as sociocultural norms and oral health systems (6).

Oral diseases impact individuals' psychological, physical, and social lives. Their perception of oral health is crucial for body image and quality of life (7). Neglecting oral health in healthcare can impact health behaviors and knowledge acquisition, affecting individuals' ability to promote good oral health (8).

There is evidence that supports the fact that proper oral health knowledge leads to better oral care practices and a positive attitude towards oral health habits (9). Understanding individuals' current knowledge about oral health can guide the development and implementation of educational strategies, ensuring that additional knowledge leads to improved oral health (10).

The oral health system in Europe is influenced by various factors, including government involvement in treatment and promotion policies, and investment in oral health professionals for primary prevention (11). This can lead to disparities in the population's oral health status, habits, and knowledge. The Nordic oral health model is characterized by extensive public dental services, free services for children under 18, and substantial investment in preventive services and regular checkups (12). The South European model is predominantly private, with limited government involvement and insurance schemes (11). The Eastern European model is mainly private, focusing on curative treatments and free treatment until age 19 (13). Recent studies suggest that involving dental hygienists in public health could increase public awareness and improve oral health outcomes (14).

The main reason behind this research is the European trend towards preventive dentistry at the expense of curative dentistry. One of the main factors facilitating the development of dental caries is poor oral hygiene, carried out incorrectly, or even the lack of it.

The literature shows that oral self-care practice, individual belief and attitudes are considered to have an important role in oral health care. The relation between psychosocial dimension and oral health behavior has been analyzed by several different studies. Good oral health is an essential component to maintain and improve general health and quality of life. Assessment of self-rated oral health is considered a valid and useful measurement indicator of oral health conditions in epidemiology, which can easily and simply evaluate the individual general oral health status (15).

It will also look at the directions and measures taken with regard to oral hygiene in particular and preventive dentistry in general at EU and national level, as well as measures taken to promote oral health.

Research has shown that adults hardly ever manage to clean more than 30–40% of their gingival margins by means of tooth brushing and interproximal hygiene (16,17). Thus, the question arises of why oral hygiene behavior is so inefficient.

Aim and objectives

The main purpose of this research is to identify oral hygiene behavior as well as to observe attitudes towards oral hygiene.

The main objectives of the present study are to reveal the frequency of dental check-ups, to evaluate the level of knowledge about brushing techniques, oral hygiene aids, importance of oral hygiene as well as the importance of regular check-ups, sources of information about oral hygiene made by individuals involved in the oral hygiene process.

MATERIALS AND METHODS

A retrospective descriptive study was conducted on a sample of 94 individuals from the general population. First-order demographic parameters such as biological factors (age, sex) and social factors (last education, current professional status) were analysed.

This study was based on cross-sectional quantitative observational research using an online questionnaire on the Google Forms platform as primary survey. The advantages of this method of data collection are possibility of using longer questionnaires, low probability of bias, possibility of remote administration, access to a larger sample and rapid data collection. However, this method of data collection also has disadvantages such as poorer data quality and a higher possibility of refusal by participants. However, these disadvantages are not an impediment in choosing this method of data collection and the influence of these disadvantages on the result is very small.

The sampling of individuals included the following steps setting up the sampling frame, choosing the sampling method, determining the sample size, carrying out the sampling activity and collecting the data.

There were 17 single-answer questions in the questionnaire. The first 5 questions of the questionnaire are designed to collect general data about the individuals and the next 12 questions are designed to collect data about the individuals' oral hygiene. The questions were ranked according to certain criteria in order to achieve the objectives of the study, including: biological factors (non-modifiable): age, gender, social factors (modifiable); last education completed, current professional status.

Table 1. Demographic and Dental Hygiene Habits Questionnaire

Questions
1. Your age:
2. Your gender:
3. Last completed studies
4. Your current professional status:
5. How often do you go to the dentist?
6. How often do you brush your teeth?
7. Duration of tooth brushing:
8. Do you use a manual or electric toothbrush?
9. How often do you replace your toothbrush?
10. Do you wash and dry the toothbrush head after each use?
11. Do you keep your toothbrush in its designated boxes?
12. Do you floss?
13. The next question is for people who answered 'yes' to the previous question. Have you ever injured your interdental papilla or gums while flossing?
14. Do you use interdental brushes?

15. Do you use the oral douche?
16. Do you use mouthwash?
17. Do you use mouthwash?

The main tools and adjuvants used in oral hygiene: toothbrush, floss, interdental brushes, mouthwash, mouthwash were also of interest in the questions. Investigating the correctness of the use of oral hygiene instruments: frequency of visits to the dentist, frequency of dental brushing, duration of dental brushing, frequency of toothbrush replacement, procedure of toothbrush care after brushing, how to store the toothbrush, the existence of lesions on the interdental papilla or gingiva after flossing, the time of rinsing the oral cavity after brushing was also investigated.

RESULTS AND DISCUSSIONS

As far as biological factors are concerned, it was found that 66% (n=62) of the participants in the questionnaire belong to the age category 18-25 years, 26.6% (n=25) belong to the age category 26-30 years, 2.1% (n=2) belong to the age category 31-35 years, 3.2% (n=3) belong to the age category 36-45 years, and 2.1% (n=2) of the participants are over 45 years. The gender representation shows that 78.7% of the participants are female and 21.3% are male.

In terms of social factors, we found that 67% (n=63) of the participants have a high school education, 31.9% (n=30) of the participants have a master's or bachelor's degree and only 1.1% (n=1) have a professional degree. 89.4% (n=84) of the participants are students and 10.6% (n=10) are employed.

The demographic characteristics of the sample studied by age group, gender, education, and professional status are highlighted in the following table.

Table 2. Demographic results

		The studied sample	
Demographic characteristics		Număr	Procent (%)
Age	18-25	62	66
	26-30	25	26,6
	31-35	2	2,1
	36-45	3	3,2
	Over 45	2	2,1
Sex	Male	74	78,7
	Female	20	21,3
Last completed studies	High school	63	67
	Vocational school	1	1,1
	Higher education	30	31,9
Current professional status	Student	84	89,4
	In the field of work	10	10,6

To determine the frequency of visits to the dentist, a sample of 94 individuals from the general population was surveyed: "How often do you go to the dentist?". Out of the total 94 participants in the questionnaire: 33% (n=31) go to the dentist once every 6 months, 36.2% (n=34) once a year and 30.9% (n=29) occasionally. The present study revealed that adolescents with poor oral hygiene conditions had less positive perceptions, attitudes, and behaviours towards oral health than those with good oral hygiene conditions.

In order to determine the frequency of tooth brushing among survey participants, they answered the following question: "How often do you brush your teeth?". Out of the total 94 participants of our study, 83% (n=78) perform tooth brushing twice a day, 16% (n=15) perform tooth brushing once a day and only 1.1% (n=1) once every few days.

Also in this questionnaire we aimed to find out whether participants respect the 2 minute time limit for brushing their teeth. According to the values in the figure we observe that out of the total of 94 individuals 5.3% (n=5) perform tooth brushing for less than 1 minute, 19.1% (n=18) perform tooth brushing for 1 minute, 54.3% (n=51) perform tooth brushing for 2 minutes and 21.3% (n=20) perform tooth brushing for more than 2 minutes.

In an attempt to outline the prevalence of manual versus electric toothbrush use in the general population sample we determined that 52.1% (n=49) use a manual toothbrush and 47.9% (n=45) use an electric toothbrush.

In this study we investigated whether the individuals surveyed replace their toothbrush at regular intervals of 2-3 months or at longer intervals. Of the total 94 individuals corresponding to the values in the chart 10.6% (n=10) replace their toothbrush less than every 2 months, 52.1% (n=49) replace their toothbrush every 2-3 months, 19.1% (n=18) replace their toothbrush every 4-5 months, 9.6% (n=9) replace their toothbrush every 5-6 months and 8.5% (n=8) replace their toothbrush only when they notice significant wear on their bristles.

This study determined whether the individuals in the study sample take the necessary measures to combat toothbrush contamination. Study participants were asked whether they wash and dry their toothbrush after each use. Of the total 94 participants, 75.5% (n=71) answered "yes", 13.8% (n=13) answered "no" and 10.6% (n=10) wash and dry their toothbrush after each use only sometimes.

In this study we have detected whether or not individuals avoid keeping toothbrushes in toothbrush boxes. According to the values in the chart 33% (n=31) keep toothbrush in toothbrush boxes and 67% (n=63) answered "no".

With this survey we have tracked whether the individuals in the sample use floss as an adjunct to brushing. According to the values in the chart 69.1% (n=65) floss, 29.8% (n=28) do not floss and only 1.1% (n=1) answered "sometimes".

For this study, individuals who answered yes to the question "Do you floss?" were screened. In this questionnaire we aimed to assess the correct handling of dental floss by detecting the occurrence of lesions in the interdental papilla or gingiva. Out of the total 94 individuals 65.2% (n=43) injure the interdental papilla or gingiva during flossing and only 34.8% (n=23) do not injure it.

In this study, additional means of tooth brushing and their use by the sample individuals were detected. Through this study we determined whether the study sample from the general population uses interdental brushes. According to the values from the total of 94 participants, only 14.9% (n=14) use interdental brushes and 85.1% (n=80) do not use them. The use of mouthwash was of interest in the research. The values obtained indicate that out of the total number of individuals only 21.3% (n=20) use mouthwash and 78.7% (n=74) do not use mouthwash. The study determined whether the individuals use mouthwash. According to the recorded values a majority of 66%(n=62) use mouthwash and only 34% (n=32) do not use mouthwash. In this study we investigated whether fluoride ion remineralisation is compromised because of immediate rinsing of the oral cavity after tooth brushing. According to the variables in the figure we found that a high rate of 90.4% (n=85) rinse the oral cavity immediately after brushing and only a minor rate of 9.6% (n=9) do not.

Using the first figure we determined that of the total sample of high school graduates only 33% (n=21) go to the dentist once every 6 months, 40% (n=25) go once a year to the dentist and 27% (n=17) go occasionally. According to the variables, of the total participants who have a high school education only 33% (n=21) go to the dentist once every 6 months, 30% (n=19) go once a year and 37% (n=23) go occasionally.

Consistent with the variables we noted that the correct duration of tooth brushing of 2 minutes was applied by a higher rate of individuals (61%) in the age category 18-25 years compared to the lower rate of individuals (44%) in the age category 26-30 years.

According to the graph we determined the correlation between the age category and the type of toothbrush used, so as the individuals move to an older age category, they tend to use more and more manual toothbrushes. According to the values in the graph it was noted that the use of the electric toothbrush prevails in the age category 18-25 years.

Consistent with the values in the graph, individuals who have only completed high school change their toothbrushes at short intervals, most of them at intervals of 2-3 months. Individuals who have completed higher education (bachelor's or master's degree) change their toothbrush approximately equally at intervals of 2-3 months and 4-5 months.

We found that individuals in the sample who brush twice a day replace their toothbrush every 2-3 months. In contrast, the largest number of individuals examined who brush once a day change their toothbrush every 4-5 months.

According to the variables in the chart, we determined that both individuals using the manual toothbrush and individuals using the electric toothbrush have a prevalence of tooth brushing duration of 2 minutes.

Consistent with the values in the graph, we found that the highest number of individuals who go to the dentist once every 6 months and once a year replace their toothbrush every 2-3 months. In the graph we found that the highest number of individuals who occasionally go to the dentist replace their toothbrush every 2-3 months and every 4-5 months.

CONCLUSIONS

Out of the total 94 individuals surveyed, only 30.9% (n=29) visit the dentist only occasionally. This in itself is not a fault but may be a factor in oral hygiene education. Regarding the frequency of brushing, out of a total of 94 participants in the questionnaire, only 17% (n=16) brushed less than twice a day, 16%(n=15) brushed only once a day and 1%(n=1) brushed every few days. In terms of duration of brushing 24.4%(n=23) brush for less than 2 minutes, 19.1% (n=18) brush for 1 minute and 5.3% (n=5) brush for less than 1 minute. Out of the total of 94 participants 37.2%(n=35) replace their toothbrush less often than indicated, of these 19.1%(n=18) replace their toothbrush every 4-5 months, 9.6% (n=9) replace their toothbrush every 5-6 months and 8.5% (n=8) replace their toothbrush only when it shows significant wear.

Of the total number of participants, 24.4%(n=23) are guilty of improper toothbrush hygiene, of which 10.6%(n=10) claim to wash and dry their toothbrush after use only sometimes and 13.8% (n=13) do not do so at all. Regarding toothbrush storage, 33% (n=31) of those surveyed store their toothbrush in toothbrush boxes.

Findings on objectives are mostly related to the use of adjuvant oral hygiene methods or the use of more modern means in the hygiene process. From the sample surveyed it appears that 47.9%(n=45) use an electric toothbrush. It was also observed that 69.1% (n=65) of the individuals flossed regularly, 1.1% (n=1) said they flossed sometimes, and 65.2% (n=61) of these had injured the papilla through incorrect use. Other adjuvants used by the individuals surveyed are mouthwash in 66% (n=62), mouthwash in 21.3% (n=20) and interdental brushes in 14.9% (n=14). Another important and much omitted factor is that 90.4% (n=85) of those questioned rinse immediately after brushing, thus toothpastes with fluoride in their composition cancel out their remineralising effect.

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