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ORIGINAL RESEARCH ARTICLE

Evaluation of Individuals' Mouthwash Buying and Using Habits

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Abstract

Purpose: Mouthwash use includes processes such as recognizing the problem, collecting information, and evaluating alternatives. It has been associated with a variety of factors, including sociodemographic traits, health, and behavioral aspects. In light of this information, our study aimed to evaluate patients' purchase and use habits of mouthwashes.
Materials and Methods: 500 patients who applied to Ankara University Faculty of Dentistry Department of Periodontology were included in the study. The patients were asked to fill in a questionnaire consisting of 24 questions about mouthwash usage habits. Data were evaluated with SPSS for Windows v.26. To assess the association between variables, the Chi-square test was performed.
Results: 59% of the participants were women, 29.8% consisted of individuals between the ages of 18-24, 15.2% between the ages of 25-34, and 18.3% of individuals between the ages of 35-44. 54.2% of the participants have been using mouthwash for the last two years, and 34.5% prefered it because they think it kills bacteria. This was followed by the answers to prevent gingival diseases, prevent bad breath, and whiten teeth, respectively. The dentist's recommendation was the most critical factor affecting the participants when buying mouthwash, but 72% of the participants go to the dentist when needed.
Conclusions: Mouthwash usage was related to factors such as the frequency of dental visits and tooth brushing, so all individuals in the community should be educated about mouthwash.

Key words: mouthwash; oral health; preventive dentistry

Introduction

Dental plaque is the primary cause of the onset and development of oral disease.[1] Plaque clearance is necessary to avoid plaque collection on the teeth and associated gingival surfaces. Standard oral hygiene principles include teeth brushing and interdental cleaning.[2,3] Plaque and gingivitis can be controlled by brushing teeth with an anti-plaque toothpaste and cleaning between teeth with toothpicks and dental floss. A proximal brush is advised to reach open interdental areas.[2] Studies show that frequent professional plaque control can help to maintain a healthy periodontium.[4] Furthermore, mouthwash can prevent plaque formation and enhance oral health by inhibiting the multiplication of germs in plaque or preventing bacteria from adhering to tooth surfaces.[5]

Mouthwashes should be used to support tooth brushing since they can reach spaces between teeth that are thought to be the most common locations of plaque formation.[6] Chinese Traditional Medicine is credited with the earliest known use of mouthwash as a therapy for gum disease.[7] Since then, various combinations of components have been utilized to create the mouthwash mixture, and there is greater awareness of oral hygiene, resulting in a rise in sales and mouthwash brands on the market.[8]

It is critical in dentistry to investigate the profile for the use of oral hygiene products for two reasons. First, changes in the epidemiology of the most prevalent oral illnesses have been linked to variations in oral hygiene product consumption trends. Second, dental practitioners are responsible for recommending and prescribing oral hygiene products to the general public while considering the adverse effects of those products on the deterioration of gingival epithelium and tissue hemostasis, and they are also responsible for attracting attention to the patients on this issue. Because there are no studies on this profile, the profession has delegated its role in this area to industry and marketing.[9–12] Therefore, knowing how individuals determine their preferences when purchasing

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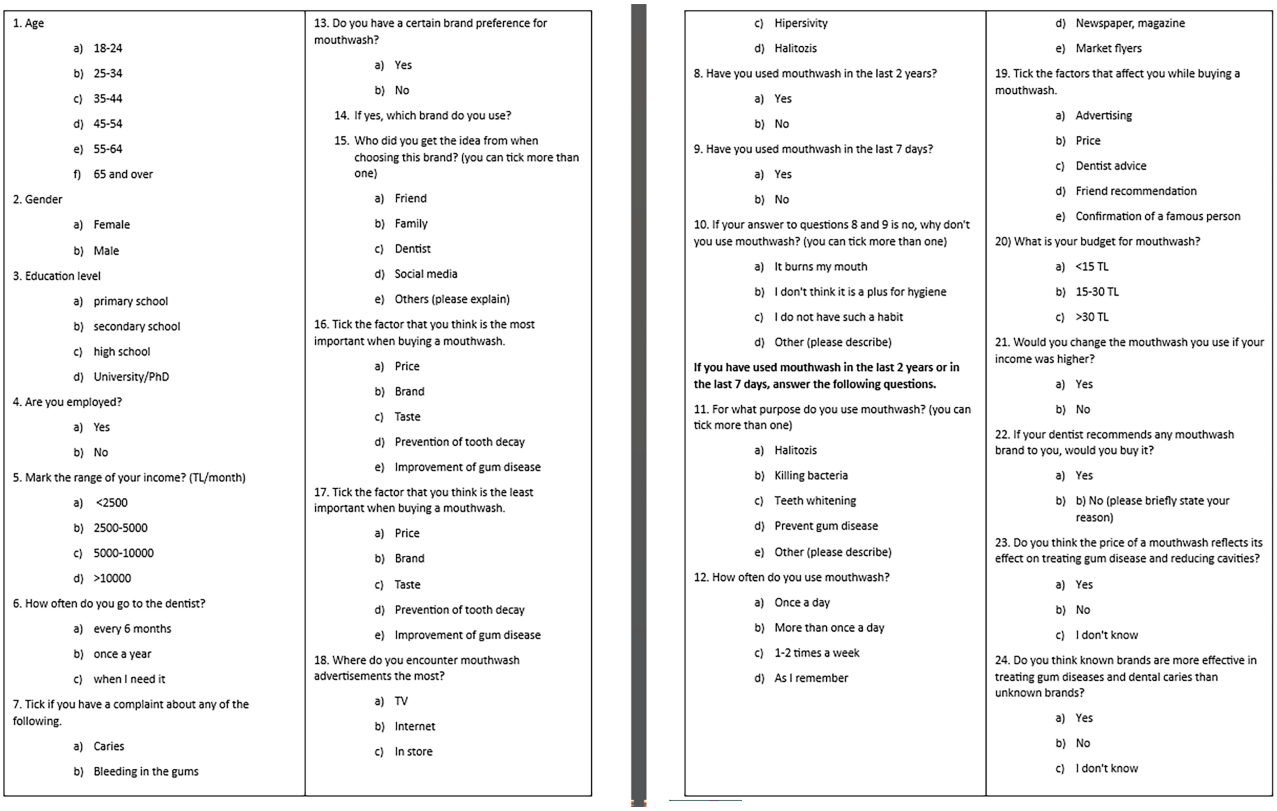

1. Age
   a) 18-24
   b) 25-34
   c) 35-44
   d) 45-54
   e) 55-64
   f) 65 and over
2. Gender
   a) Female
   b) Male
3. Education level
   a) primary school
   b) secondary school
   c) high school
   d) University/PhD
4. Are you employed?
   a) Yes
   b) No
5. Mark the range of your income? (TL/month)
   a) <2500
   b) 2500-5000
   c) 5000-10000
   d) >10000
6. How often do you go to the dentist?
   a) every 6 months
   b) once a year
   c) when I need it
7. Tick if you have a complaint about any of the following.
   a) Caries
   b) Bleeding in the gums
   c) Hipersivity
   d) Halitozis
8. Have you used mouthwash in the last 2 years?
   a) Yes
   b) No
9. Have you used mouthwash in the last 7 days?
   a) Yes
   b) No
10. If your answer to questions 8 and 9 is no, why don't you use mouthwash? (you can tick more than one)
   a) It burns my mouth
   b) I don't think it is a plus for hygiene
   c) I do not have such a habit
   d) Other (please describe)

If you have used mouthwash in the last 2 years or in the last 7 days, answer the following questions.

11. For what purpose do you use mouthwash? (you can tick more than one)
   a) Halitozis
   b) Killing bacteria
   c) Teeth whitening
   d) Prevent gum disease
   e) Other (please describe)
12. How often do you use mouthwash?
   a) Once a day
   b) More than once a day
   c) 1-2 times a week
   d) As I remember
13. Do you have a certain brand preference for mouthwash?
   a) Yes
   b) No
14. If yes, which brand do you use?
15. Who did you get the idea from when choosing this brand? (you can tick more than one)
   a) Friend
   b) Family
   c) Dentist
   d) Social media
   e) Others (please explain)
16. Tick the factor that you think is the most important when buying a mouthwash.
   a) Price
   b) Brand
   c) Taste
   d) Prevention of tooth decay
   e) Improvement of gum disease
17. Tick the factor that you think is the least important when buying a mouthwash.
   a) Price
   b) Brand
   c) Taste
   d) Prevention of tooth decay
   e) Improvement of gum disease
18. Where do you encounter mouthwash advertisements the most?
   a) TV
   b) Internet
   c) In store
   d) Newspaper, magazine
   e) Market flyers
19. Tick the factors that affect you while buying a mouthwash.
   a) Advertising
   b) Price
   c) Dentist advice
   d) Friend recommendation
   e) Confirmation of a famous person
20) What is your budget for mouthwash?
   a) <15 TL
   b) 15-30 TL
   c) >30 TL
21. Would you change the mouthwash you use if your income was higher?
   a) Yes
   b) No
22. If your dentist recommends any mouthwash brand to you, would you buy it?
   a) Yes
   b) b) No (please briefly state your reason)
23. Do you think the price of a mouthwash reflects its effect on treating gum disease and reducing cavities?
   a) Yes
   b) No
   c) I don't know
24. Do you think known brands are more effective in treating gum diseases and dental caries than unknown brands?
   a) Yes
   b) No
   c) I don't know

Figure 1. Questionnaire

mouthwash is essential in determining the effects on physicians in this area and how patients are managed. Based on the hypothesis that patients do not have enough information when choosing a mouthwash, the primary purpose of this study was to evaluate the population's buying and using habits of mouthwashes.

Material and Methods

Study population

Five hundred patients who applied to Ankara University Faculty of Dentistry Department of Periodontology were included in our study, and the participants were asked to fill out a questionnaire consisting of 24 questions about mouthwash usage habits (Figure 1). The questionnaires were adopted from previous study[13] and modified after consultation with experts associated with the field. The questionnaire consisted of sociodemographic details and 18 questions related to knowledge and attitude of oral care and mouthwash-using habit. The current study was authorized by Ankara University's Human Subjects Ethics Board (No: 36290600/23, on 11.03.2020) for using and accessing human subjects in research. It was carried out in accordance with the Helsinki Declaration. Prior to the trial, all subjects provided written permission.

Statistical analysis

A margin error of 5% (for CI 95%) was selected, and the sample size was determined as 384 according to Serdar et al.[14]

The data were evaluated using special software (SPSS for Windows v.26, IBM SPSS Inc., New York, NY, USA). Chi-square test was used to assess the relationship between variables.

Results

In this study, 59% of the individuals who participated were women, and 29.8% were between the ages of 18-24, 15.2% were individuals between the ages of 25-34, and 18.3% were individuals between the ages of 35-44 (Figure 2). When the income levels of the participants, of which 49.6% were university/doctoral graduates, were evaluated, it was found that 27.5% <2500, 35.1% 2500-5000, 27.5% 5000-10000 and 9.6% >10000 (Figure 2).

13% of the participants stated that they visited the dentist every six months, 15% indicated that they went to the dentist once a year, and 72% stated that they went as needed (Figure 3). When the mouthwash usage habits of the participants were evaluated, 30% indicated that they used it once a day, 14% more than once a day, 22% 1-2 times a week, and 34% as often as they remember (Figure 3). The most common reason why participants preferred mouthwashes was that they think it killed bacteria (Figure 3). This was followed by the reason that it protects against gum diseases. One of the least preferred reasons was the effectiveness of teeth whitening. Treatment of gingival diseases was stated as the most affecting factor in mouthwash preference (Figure 4). The factor that influenced the purchase most was the dentist's recommendation. The mouthwash fee followed this. When the participants were asked whether they would change the mouthwash they use if their income increased, 59.50% said they would not change it, and 35 of the participants thought there was no direct relationship between the price of mouthwash and its effectiveness.

Discussion

This study investigated the usage rates of mouthwash, and the factors affecting the preference for mouthwashing in society were evaluated. The relationship between the participant's age, gender, education level, frequency of going to the dentist, reason for use, frequency of mouthwash, the budget allocated, and preferences

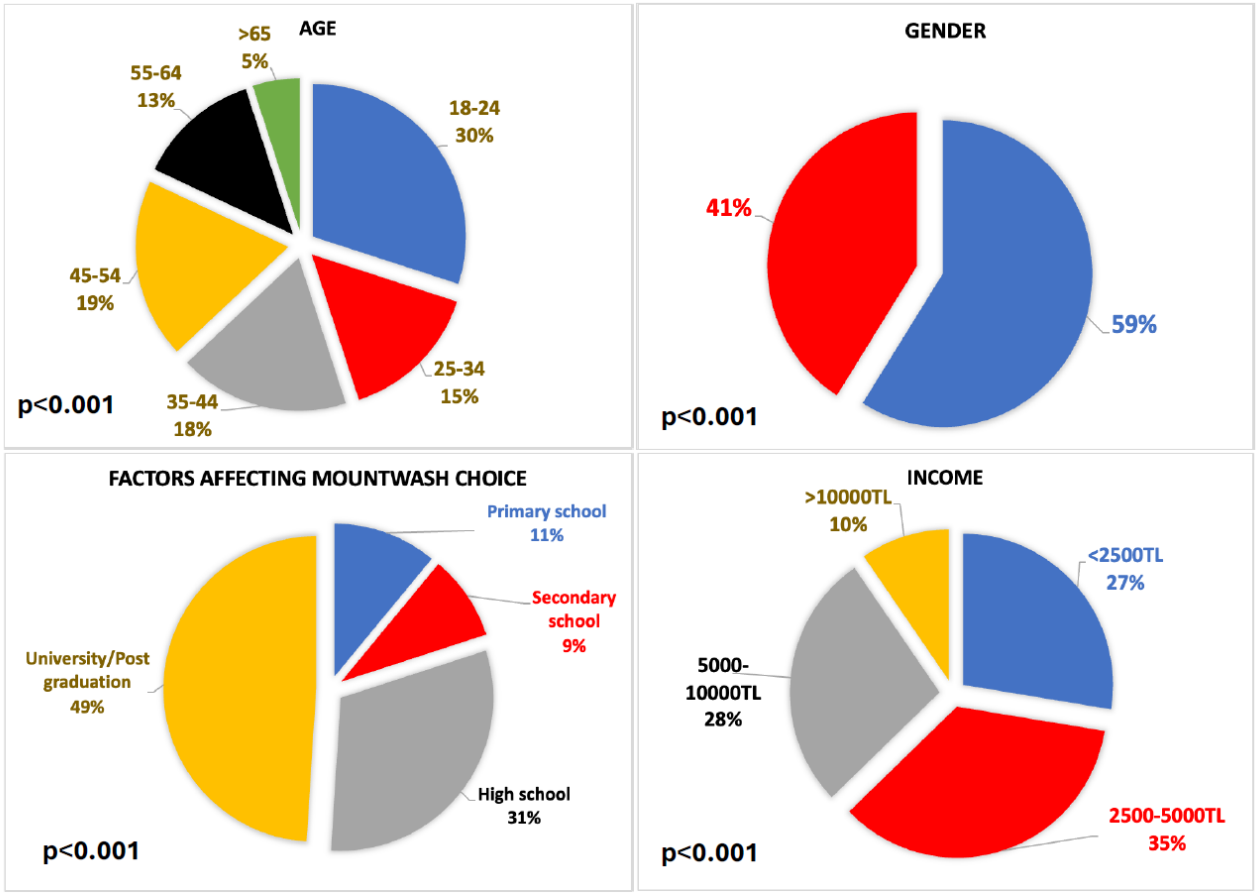

Figure 2. Distribution of demographic data among participants

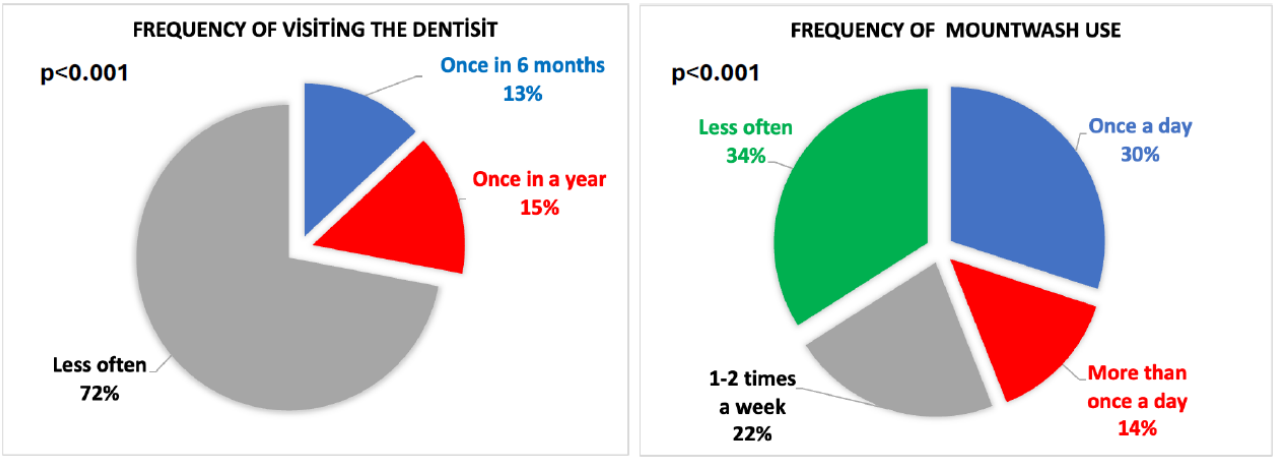

Figure 3. Distribution of dental habits of the participants

were evaluated. Oral hygiene is an essential factor affecting public health. There have been developments and changes in the oral care habits of individuals with preventive dentistry studies. In addition to brushing, dental floss, interdental brushes, and mouthwashes have become widespread.[15] In this study, it was aimed to evaluate the population's buying and using habits of mouthwashes.

Five hundred participants who stated that they use mouthwash were included in our study, and 59% were women. Similar studies conducted in Scotland[6], Sweden[16], and Malaysia[17] found that the rate of mouthwash use in women was higher than that of men. Among the few research examining the prevalence of mouthwash usage in Turkish society, Gömeç et al.[18] stated that women use mouthwash at a higher rate, while Yalnız et al.[19] concluded that there was no difference between male and female participants. These studies, which reached similar results, emphasized that the common point they reached about gender was that women were more interested in personal and oral hygiene and that mouthwashes were closely related to cosmetic products.[6,16] Considering that women pay more attention to personal hygiene and increased aesthetic concerns, it can be considered an expected result that women use mouthwash more than men in our study.

When the relationship between mouthwash use and age was examined, it was seen that there was no linear relationship. Still, by the literature, the rate of mouthwash use decreased as the age

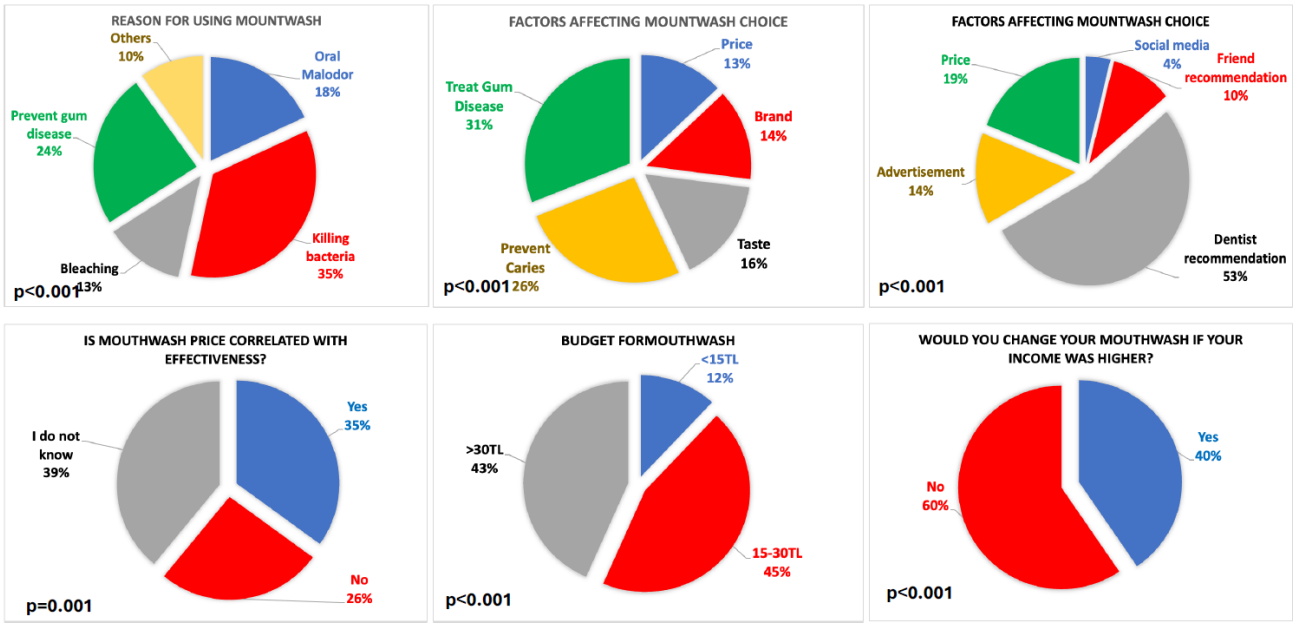

Figure 4. Participants' preferences and attitudes towards mouthwash

of the participants increased.[6,19] This might be related to reducing how many natural teeth an individual maintains. The usage of mouthwash in elderly adults, on the other hand, may be attributed to increased difficulties in cleaning teeth due to impairment.[6] Almost half of the participants are university graduates, and the available data is consistent with the findings of the literature.[6] However, studies in other societies investigated the association between levels of education and dental hygiene habits back with our findings.[20,21] While no direct relationship could be shown with education level regarding periodontal inflammation, caries indices, and the number of remaining teeth, especially at young ages, a positive correlation was observed between education level and oral health in later ages.[21] The emergence of this relationship in advanced age may be related to the cumulative effect of bacterial plaque, as well as the positive progress of dental awareness and, therefore, hygiene habits as the education level increases may be related to the increase in living standards. Most of the participants use mouthwash because it kills bacteria, as recommended by a dentist. However, most of the participants visit the dentist when they need it. In addition, 30% of the participants stated that they use mouthwash once a day, and 34% as they remember. However, although 49% of the participants had a higher education degree, only 9% had a high income level, which may explain the low rate of oral health awareness and access to oral hygiene tools.

This study was conducted in the post-pandemic period. The new Coronavirus has considerably changed the perception of patient hygiene within the dental practice. As a result of the awareness implemented to prevent virus transmission, patients are paying more attention to hygiene and preventive procedures to protect their health.[22] Considering all these effects of COVID-19, it can be thought that the use of mouthwash may have increased compared to the pre-pandemic period. However, the cross-sectional design of our study makes it impossible to draw clear conclusions in this sense. Our results show that our study population does not use mouthwash properly and regularly. In this sense, further studies are needed to evaluate both dentists' habits in recommending mouthwash and patients' attitudes in complying with these recommendations. In this context, with the right public health policies, dental problems can be prevented, and public health costs can be reduced by ensuring that individuals attend regular dentist checks every six months and providing oral health education.

Conclusion

In light of the findings of our study, it was concluded that society should be informed about the rational use and selection of mouthwashes.

Acknowledgements

The results of this study were presented as a poster presentation at the 51st Turkish Society of Periodontology International Symposium and Congress in 2022, and the abstract was included in the proceedings book.

Author Contributions

Z.G.: Conceptualization, Formal analysis, Methodology, Project administration, Supervision, Writing - original draft, review & editing C.S.: Conceptualization, Formal analysis, Methodology, Project administration, Writing - original draft, review & editing F.K..: Conceptualization, Formal analysis, Methodology, Project administration, Writing - original draft, review & editing Ş.K.: Conceptualization, Formal analysis, Methodology, Project administration, Writing - original draft, review & editing

Conflict of Interest

The authors declare that they have no conflicts of interest.

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