ANALYSIS

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Awareness and prevalence of mouthwash use among the general public: A survey based study in Riyadh, Saudi Arabia

Saad Fahad S Ben Shabr[1]✉, Moaath Saad M Alqudairy[1], Thamer Ali Mansour Alkhamis[1], Sultan Ibrahim H AlSalamah[1], Abdulrahman Sulaiman Alkathiri[1], Abdulaziz Abdullah A Almousa[1], Abeer A Al Nafea[2], Abdulrahaman Dahham Al Saffan[3]

[1]General Dental Practitioner, Riyadh, Saudi Arabia
[2]Dental Intern, College of Dentistry, Riyadh Elm University, Riyadh, Saudi Arabia
[3]Assistant Professor, Dental Public Health, Riyadh Elm University, Riyadh, Saudi Arabia

✉**Corresponding author**
General Dental Practitioner, Riyadh, Saudi Arabia; Email: saad.alshabr@gmail.com

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ABSTRACT

Introduction: Use of oral rinses or mouthwashes has been extensive since a very long time by the public. But the actual prevalence and knowledge regarding the usage is not much studied. *Materials and methods*: This cross-sectional study was conducted among the general public, more than 18 years of age in Riyadh using an online survey. The closed-ended questionnaire consisted of information regarding demographics as well as use and awareness pertaining to mouthwashes. *Results*: A total of 1259 study participants responded to the survey, out of those males were 29% and females 71%. As far as the age groups were concerned, 31% belonged to 18-30 years, 37% to 31-45 years, 30% to 46-60 years and only 3% to 60 or more years. *Conclusion*: The mouthwash related knowledge was found to be satisfactory among the study participants.

Keywords: Mouthwash, General Public, Oral Hygiene

1. INTRODUCTION

Oral rinses or mouth washes have been used extensively by the public since a very long time. Major uses of mouthwashes include treatment of bad breadth caused by various systemic or local diseases. Different mouthwashes contain multiple types of therapeutic

agents, which are readily available in market as OTC. Mouth washes have been used for more than a century now (Rayman and Almas, 2008). Mouthwashes can also be utilized to prevent plaque and related periodontal diseases. One of the ingredients of these products is chlorhexidine, which plays a very important role in preventing and treating periodontal diseases (Boyle et al., 2014). As mentioned above, mouthwash consists of various therapeutic agents and one of the very commonly added ingredients is fluoride. Fluorides, when added to oral rinses, act as a preventive measure against dental caries. Various studies have associated fluoride rinses with decrease in caries incidence among populations (Asl Aminabadi et al., 2007).

Mouthwash use is also associated with the incidence of oral cancer. The HNSCC was showing slight association with periodontal disease. The frequency of mouthwash being used was determining the increase in risk of factors ranging from at least once per day to never using mouthwash. The number of times non-alcoholic mouthwash used was determining the HNSCC against the use of any other kind of mouthwash. Hence, portraying has the direct relationship between periodontal disease and HNSCC. Their data suggest that mouthwash use is associated with HNSCC, but they noted no difference between the effects of alcohol-containing and non-alcoholic mouthwashes (Eliot et al., 2013). Several studies have been conducted to measure the prevalence of mouthwash use among the general public in various countries. A research in Malaysia revealed high levels of knowledge related to the use and different brands of mouthwashes among the female population as compared with the males. However, an extensive study is required in order to generalize the results and expand the scope by increasing the sample size (Mitha et al., 2016). On the other hand, a study conducted in Scotland revealed a contrasting finding as far as mouthwash use was concerned. It was noted that majority of the study participants never used mouthwash. However, those who did use it, the prevalence decreased with increase in age of study subjects. Level of education might play an important role in determining the use of mouthwash. Another factor which may dictate the use of mouthwash was found to be smoking (Macfarlane et al., 2011).

Aims of the study

1) To determine the prevalence of mouthwash use
2) To measure the knowledge of general public related to the use and effects of mouthwash.
3) Compare the results between males and females.
4) Compare among the educational levels and age groups.

2. MATERIALS AND METHODS

Ethical approval

The study proposal was registered in the research center of REU, and ethical approval was obtained with registration number FRP/2020/292. Informed consent to participate in the study was obtained from the subjects before start of the study. The study was conducted from February, 2020 to July, 2020

Study Design and sample

This was a cross sectional study conducted among the general public in Riyadh using an online survey. The population above 18 years and with sound mind were considered for the study sample. We achieved a total sample size of 1259 participants.

Study Instrument

A closed ended questionnaire constructed online using Google forms. The survey link was then sent out to the general public via emails and social media websites.

The survey included the demographics such as gender, age groups (18 to 30 years, 31 to 45 years, 46 to 60 years, and 60+ years) and educational levels (high school, bachelors, and masters). Further variables included people's evaluation of their own general as well as oral health to be responded with poor, fair excellent, good. Their knowledge what mouthwash is and if they had ever used a mouthwash to be responded with yes or no. Furthermore, reasons to use mouthwash to be responded with bad breath, prevention against caries, prevention against gum diseases or as a habit. Then we inquired about the use of a specific brand to be responded with yes or no. Finally, inquired about the person who advised them to use mouthwash to be responded with dentist, family or self-awareness. Data was categorical in nature with percentages being calculated and mentioned in front of each category.

Instrument Validity and Reliability

A pilot study was conducted by sending the survey to 20 participants and the data were inserted in SPSS version 22 to determine the reliability by using Cronbach's coefficient alpha (value was 0.761). Validity of the questionnaire was tested by sending it to experienced researchers in Riyadh Elm University, but no changes were made (figure 1).

Statistical Analysis

Collected data was analyzed using SPSS version 22, where descriptive as well as inferential statistics will be conducted. Comparisons between groups will be made with the value of significance kept under 0.05 using Chi square test.

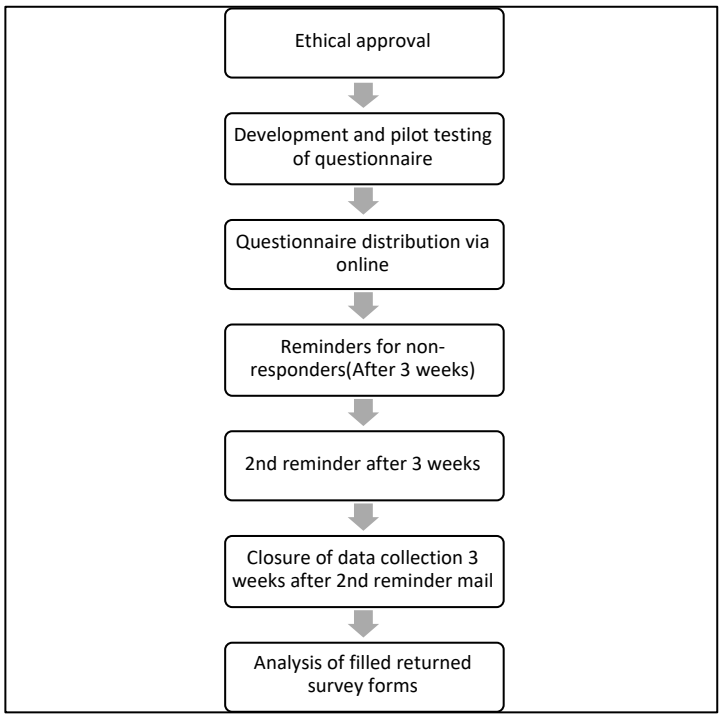

Figure 1 Flowchart of study methodology

3. RESULTS

A total of 1259 study participants responded to the survey, out of those males were 29% and females 71%. As far as the age groups were concerned, 31% belonged to 18-30 years, 37% to 31-45 years, 30% to 46-60 years and only 3% to 60 or more years. On the other hand, 14% of the study participants had an educational level of high school or below, 72% were graduates and 14% were masters (Table 1). Figure 2 shows that 89% of the participants knew what is a mouthwash and 83% and used it in their lifetime. Only 11% of respondents used mouthwash as a habit and 42% had taken it due to self-awareness.

There was significant difference ($p<0.05$) between responses for the items like self-perceived oral health, Know what mouthwash is, Ever used mouthwash and Who advised you, when compared between genders with females showing better results than males (Table 2). When participants were compared based on age groups significant difference was observed for all items except the item reason to use mouth-wash and no significant difference was found when participants were compared based on their educational level. All the comparisons can be acknowledged from the tables 2, 3 and 4.

Table 1 Demographics of study participants

Item	Frequencies
Gender	Males: 29% Females: 71%
Age Group	18-30: 31% 31-45: 37% 46-60: 30% 60+: 3%
Educational level	High school: 14% Bachelors: 72% Masters: 14%

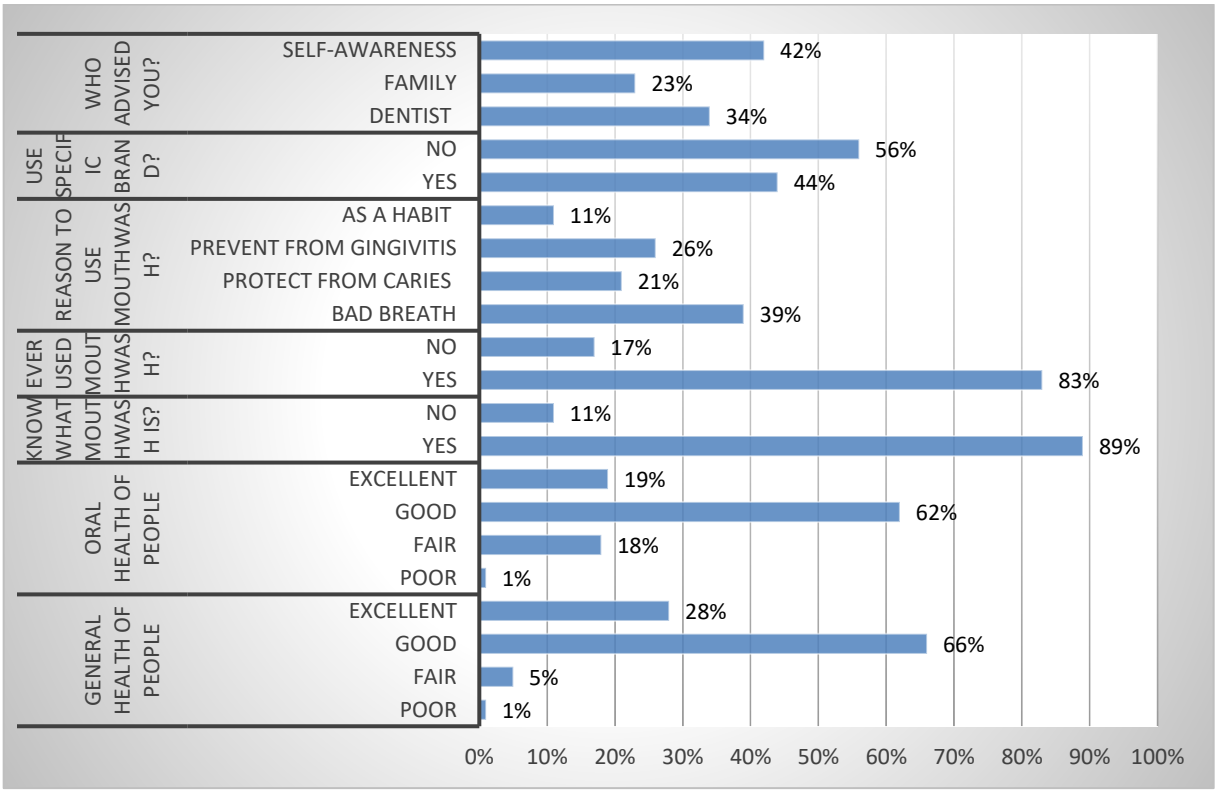

Figure 2 Overall responses of study participants

Table 2 Gender comparison for survey items

Item	Frequencies	Male	Female	p-value
General health of people	Poor	1%	1%	0.210
	Fair	3%	6%	
	Good	63%	67%	
	Excellent	33%	26%	
Oral health of people	Poor	1%	1%	0.000*
	Fair	31%	12%	
	Good	47%	68%	
	Excellent	20%	19%	
Know what mouthwash is?	Yes	79%	94%	0.000*
	No	21%	6%	
Ever used mouthwash?	Yes	77%	86%	0.025*
	No	23%	14%	
Reason to use mouthwash?	Bad breath	49%	37%	0.064
	Protect from caries	19%	22%	
	Prevent from gingivitis	24%	28%	
	As a habit	09%	13%	
Use specific brand?	Yes	45%	44%	0.859
	No	55%	56%	
Who advised you?	Dentist	28%	37%	0.006*
	Family	32%	20%	
	Self-awareness	40%	43%	

*p<0.05; significant

Table 3 Age group comparison of the survey items

Item	Frequencies	18-30 yrs	31-45 yrs	46-60 yrs	60+ yrs	p-value
General health of people	Poor	1%	1%	0%	1%	0.000*
	Fair	9%	2%	4%	14%	
	Good	50%	69%	80%	64%	
	Excellent	39%	28%	16%	21%	
Oral health of people	Poor	0%	3%	1%	0%	0.001*
	Fair	14%	14%	27%	0%	
	Good	62%	66%	56%	70%	
	Excellent	25%	17%	16%	30%	
Know what mouthwash is?	Yes	98%	95%	74%	93%	0.000*
	No	2%	5%	26%	7%	
Ever used mouthwash?	Yes	91%	88%	70%	79%	0.002*
	No	9%	12%	30%	21%	
Reason to use mouthwash?	Bad breath	36%	42%	43%	36%	0.413
	Protect from caries	18%	25%	21%	14%	
	Prevent from gingivitis	32%	23%	25%	43%	
	As a habit	14%	11%	11%	7%	
Use specific brand?	Yes	38%	40%	58%	36%	0.001*
	No	62%	60%	42%	64%	
Who advised you?	Dentist	31%	37%	35%	36%	0.042*
	Family	20%	20%	31%	36%	
	Self-awareness	49%	44%	34%	28%	

*p<0.05; significant

Table 4 Educational levels comparison of the survey items

Item	Frequencies	High School	Bachelors	Masters	p-value
General health of people	Poor	1%	1%	0%	0.164
	Fair	2%	5%	8%	
	Good	78%	64%	67%	
	Excellent	19%	30%	30%	
Oral health of people	Poor	0%	1%	1%	0.060
	Fair	9%	19%	17%	
	Good	74%	60%	59%	
	Excellent	17%	19%	21%	
Know what mouthwash is?	Yes	92%	88%	95%	0.106
	No	8%	12%	5%	
Ever used mouthwash?	Yes	83%	83%	86%	0.779
	No	17%	17%	14%	
Reason to use mouthwash?	Bad breath	31%	42%	42%	0.506
	Protect from caries	25%	25%	23%	
	Prevent from gingivitis	32%	27%	20%	
	As a habit	12%	11%	14%	
Use specific brand?	Yes	51%	43%	46%	0.379
	No	49%	57%	54%	
Who advised you?	Dentist	42%	33%	36%	0.597
	Family	21%	24%	23%	
	Self-awareness	37%	43%	1%	

*p<0.05; significant

4. DISCUSSION

We aimed to compare our findings on the basis of gender, age group and educational level. We will merely discuss the results which are statistically significant. It can be noted from table 2 that the female participants believed their oral is better as compared the males. Females also mentioned that they had better knowledge of what mouthwash is and they had used it more than males. Females also seemed to be better aware of the use of mouthwash and they received this information from their dentists, which shows they have been visiting dentists more than the males. On the other hand, young age group participants believed their general health is excellent as compared with the older age groups. However, older age groups believed they had better oral health as compared with the younger age groups. Young age groups had better information about what mouthwash is and its regular use. When inquired about the source of information about mouthwash, younger age group participants revealed that they were self informed.

A study conducted by Kaur and Sharma (2020) among the general public in Ontario, Canada reported that 93% of the participants bought and used mouthwash without their dentists' prescription and merely 7% via prescription. Moreover, their findings also revealed that the females tend to show better attitude and higher prevalence of mouthwash use as compared to males. When compared these results with our study findings, it was noted that 34% of participants used mouthwash following the advice of their dentists, which is much higher than the Canadian study. However, one similarity between these studies is the better attitudes exhibited by the female study participants.

Another Malaysian based study conducted by Mitha et al., (2016) listed important factors associated with general public's attitude and use of mouthwash in daily routine. It was observed from their investigation that 33.8% of their participants used mouthwash regularly to fight bad breath as compared to other reasons. This number was slightly higher reported by our study participants as 39% used mouthwash to get rid of bad odor.

An Indian study conducted by Manju et al., (2020) among the Chennai based residents regarding their mouthwash use reported that 43% of the participants never used mouthwash in their lifetime, which is much lower than what we observed in our study as only 17% never used it. There were no statistically significant comparisons among the educational levels of participants. There is a need to expand the scope of this study by increasing the sample size.

5. CONCLUSION

The mouthwash related knowledge was found to be satisfactory among the study participants. Young age participants showed better awareness. Females exhibited better knowledge about mouthwash use.

Authors Contribution

All author made best contribution for the concept, assessment and evaluation, data acquisition and analysis and interpretation of the data.

Conflict of Interest

The authors declare no conflict of interest.

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Informed Consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

Data and materials availability

All data associated with this study are present in the paper.

REFERENCES AND NOTES

1. Asl Aminabadi, N., Balaei, E., Pouralibaba, F. The Effect of 0.2% Sodium Fluoride Mouthwash in Prevention of Dental Caries According to the DMFT Index. J. Dent. Res. Dent. Clin. Dent. Prospects; 2007; 1(2), 71–76.
2. Boyle, P., Koechlin, A., Autier, P. Mouthwash use and the prevention of plaque, gingivitis and caries. Oral Dis. 2014; 20(1), 1–68.
3. Eliot, M.N., Michaud, D.S., Langevin, S.M., McClean, M.D., Kelsey, K.T. Periodontal disease and mouthwash use are risk factors for head and neck squamous cell carcinoma. Cancer Causes Control CCC. 2013; 24(7), 1315-1322.
4. Kaur, H. and Sharma, P., 2020. Mouthwash Use in General Population of Mississauga, Ontario, Canada. Journal of Advanced Medical and Dental Sciences Research. 2020;8(7), 6-11.
5. Macfarlane, T.V., Kawecki, M.M., Cunningham, C., Bovaird, I., Morgan, R., Rhodes, K., Watkins, R. Mouthwash Use in General Population: Results from Adult Dental Health Survey in Grampian, Scotland. J. Oral Maxillofac. Res. 2011; 4(1).
6. Manju, J., Krithika, C., P.R. Koteshwari, Kumar, G.M. Awareness of Oral Hygiene Aids among General Population. Indian J. Forensic Med. Toxicol. 2020; 14(3), 411–415.
7. Mitha, S., Elnaem, M., Koh, M., En, C., Babar, M., Siddiqui, M.J., Jamshed, S.Use and Perceived Benefits of Mouthwash among Malaysian Adults: An Exploratory Insight. J. Adv. Oral Res. 2016; 7(2), 14.
8. Rayman, S., Almas, K., 2008. Halitosis among racially diverse populations: an update. Int. J. Dent. Hyg. 2008; 6(1), 2–7.

Peer-review

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