

# Using Promotional Strategies to Increase the Use of Miswak among Teenagers in Saudi Arabia

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## ARTICLE INFO

### Keywords:

*advertisement,  
Saudi Arabia communication,  
standardisation,  
health behaviour*

## ABSTRACT

Miswak is a chewing stick that has been used in Muslim communities across the world for over 1,500 years as an oral hygiene aid. There is evidence to support its clinical effectiveness in plaque management when used alone or in conjunction with a conventional toothbrush. However, evidence of its deleterious effects on periodontal health is equivocal. To study culturally acceptable strategies for promoting oral health practices and preventing illness among adolescents in Saudi Arabia, advertisements were assessed for their ability to engage and open up new communication channels for oral health messages. The aim is to encourage adolescents to adopt the habit of using miswak to improve their oral hygiene, wherever they may be. The data for this study was collected from 116 teenage respondents from Saudi Arabia. The mean age of the study participants was  $16.66 \pm 0.943$  years, with a median age of 17 and a range from 12 to 17. The study included 66 males (56.9%) and 50 females (43.1%). Furthermore, the overall mean assessments of both advertisements were negative due to several problems with the design and use of pictures in the ads. The analysis of this study show that a more standardised method of advertisement is required to properly gain the attention of this generation of adolescents in Saudi Arabia. In addition, the individuals who took part in the research believed that social media is the most suitable venue for conveying messages promoting miswak. To be able to communicate effectively about oral health messaging, one must first have a solid understanding of the advertising messages that are relevant to oral health, as well as the influence of religion. Another prerequisite for the creation of effective advertising is knowledge of media platforms and the impacts that these platforms have on the behaviour of teenagers. Successful communication could make youths in Saudi Arabia likelier to use miswak.

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### Cite this article as:

Alzhrani, H. G. (2023). Using Promotional Strategies to Increase the Use of Miswak among Teenagers in Saudi Arabia. *European Journal of Behavioral Sciences*, 6(3): 16-27. <https://doi.org/10.33422/ejbs.v6i3.1069>

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## **1. Introduction**

A person's state of oral health is crucial to their general health and well-being (Heaton et al., 2019). In addition, to being important for keeping your teeth and gums healthy, excellent oral hygiene also has aesthetic benefits (Bos, 1993). Taking care of one's teeth and gums on a regular basis is one of the most crucial tasks, since a clean mouth and teeth may ward off potential health issues (Halawany, 2012).

Dental caries and other infections of the mouth have been treated using a wide range of approaches towards good oral hygiene (Mlenga & Mumghamba, 2021). The goal of today's dental tools is to chemically and physically clean the teeth's surfaces and interdental regions, leaving them free of plaque and food particles. An old-fashioned toothbrush and some elbow grease are essential for maintaining oral hygiene (Niazi et al., 2016).

Miswak has been rising in popularity throughout the Muslim world, most notably in certain African and Arab nations (WM & LA, 2017). Miswak is considered a religious obligation in Muslim-majority nations (Bos, 1993). More than a thousand years have passed since the prophet Muhammad (SAW) recognised its worth as an oral hygiene tool (Eid et al., 1991).

*Salvadora persica*, or miswak, is the most popular kind of chewing stick due to the ease with which its stem and base may be crushed between the teeth. When submerged in water, the root swells and softens (Patel et al., 2012). Traditional toothbrushes in numerous third-world nations are made of miswak (Naseem et al., 2014).

Due to its long history of the usage of Miswak, widespread availability, and inexpensive price, the World Health Organization recommended miswak for oral hygiene in impoverished countries in 1987 (In, 1997). Gingival issues may be alleviated with the use of chewing sticks, or extracts from them (Al-Obaida et al., 2010). As a result, consumers choose 'natural' toothpastes that include fewer chemicals (Davis & Duke, 2018). In the developed West and Asia, in recent decades, natural supplements have risen in popularity in oral healthcare goods (Schubbe et al., 2020). Past studies have investigated the effectiveness of dental guidance promoted through marketing (Davis & Duke, 2018), but few have provided a clear, readily implementable method of addressing the oral health behaviours of Saudi Arabian teenagers.

Advertising can employ visual imagery to transmit health messages, particularly oral health messages, to audiences (Davis & Duke, 2018; Hackley & Hackley, 2021). The use of effective advertisements has been shown to change people's health attitudes and behaviours (Hackley & Hackley, 2021). On the other hand, the use of Islamic language in advertisements has helped attract Muslim audiences (Harun et al., 2021). The use of cues and symbols as instruments is effective in terms of reminding consumers of their cultural values and affiliations (Waqas et al., 2023).

## **2. Methods**

### **2.1. Study Design and Settings**

A descriptive, correlational, cross-sectional design was employed for this study. Since the study aimed to assess the effectiveness of two advertisements promoting the use of miswak among teenagers in Saudi Arabia, this is the most appropriate design. It enabled us to measure the effects and outcomes at a single point in time. This study design provides reliable results rapidly and easily. The study was conducted using online survey in Saudi Arabia. The participants were selected between March and June 2022.

## **2.2. Population**

The targeted population was all teenagers aged 12–18 years in all regions of Saudi Arabia.

## **2.3. Sampling and Sample Size**

The study participants were selected using a non-probability convenient sampling technique. The sample size was determined according to the total number of teenagers aged 12–18 years in all regions, with a confidence level of 95% and marginal error of 5%.

## **2.4. Data Collection**

The data were collected using Google Forms and extracted on an Excel sheet.

## **2.5. Content of Advertisements**

In the course of the research, a comparison was carried out between two advertisements, both titled: ‘The correct way to utilise miswak.’ An image of a human and a bear appears in the very first advertisement for miswak ever published. The artwork’s objective is to depict the correct way the product should be utilised. Figure 1 provides a graphical illustration of the correct way to use miswak. The second commercial has a quotation from the Prophet Muhammad in which he is reported as stating, among other things, ‘It (miswak) is cleansing for the tongue, and it is a technique of seeking ALLAH’s joy’. This indicates that Allah looks favourably upon the practicing Muslim who makes use of the miswak. Figures (2).

The first advertisement, shown in Figure 1, uses a traditional method of drawings to try and attract a wide audience. Meanwhile, the second advertisement, shown in Figure 2, uses Islamic language to attract attention and further persuade adolescent audiences to pay attention to miswak and use it as a healthy habit for oral aid.

## **2.6. Instruments**

The first questionnaire was about the drawing-based advertisement that supported the use of miswak as a cleaning teeth tool. The second questionnaire concerned the advertisement with realistic pictures, which featured the Prophet’s words concerning the use of miswak as a teeth-cleaning tool. The two questionnaires had the same questions.

Immediately after seeing the messages, the participants were asked to report every thought that had come to mind while viewing the ads. Following that, 11 items were ranked on a 5-point Likert scale (strongly agree–strongly disagree).



Figure 1: First advertisement: 'How to use the miswak'. Photo credit: MiswakClub.com



Figure 2: Second ad: 'Sunnah of how to use the miswak'. Photo credit: Facebook

## 2.7. Statistical Analysis

Data obtained from the questionnaire were entered and analysed using SPSS (Statistical Package for the Social Sciences), version 23 computer software. Sociodemographic data are presented using descriptive statistics such as means, medians, percentages, and standard deviations (SDs). A paired sample t-test and one-way Analysis of Variance (ANOVA) were used to demonstrate statistical significance among the participants' characteristics. A chi-square test was used to determine the relationships between categorical variables.

## 2.8. Ethical Considerations

Permission was obtained from the Research Ethics Committee of Taif University (number HAO-02-T-105) to collect quantitative data from teenagers aged 12–18 years. After we

explained the study objectives, the participants were asked to volunteer to participate in the study.

### 3. Results

#### 3.1. Results for Advertisement 1

The questionnaire for advertisement one was completed by 116 teenage participants. The mean age of the study participants was  $16.66 \pm 0.943$  years, with a median age of 17 years. Their ages ranged from 12 to 17 years. The sample included 66 males (56.9%) and 50 females (43.1%) (Figure 3).

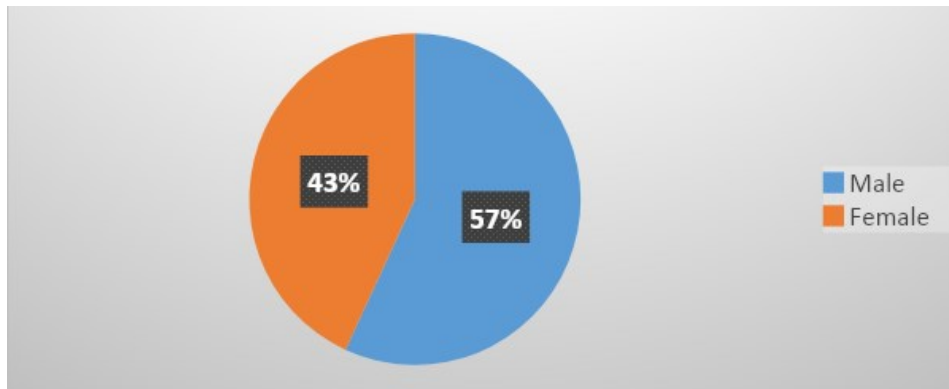


Figure 3: Gender distribution among study participants

The participants mentioned several points regarding what they liked about the advertisement, including its simplicity, ease of use, clarity, and straightforwardness. On the other hand, they criticised the resolution of the images used. Some disliked the portrayal of the person in the picture due to a detailed representation of their mouth, which provoked disgust in the participants. Most of the study participants were unaware of miswak ( $n = 92$ , 79.3%). Figure 4 shows the distribution of awareness among the study participants.

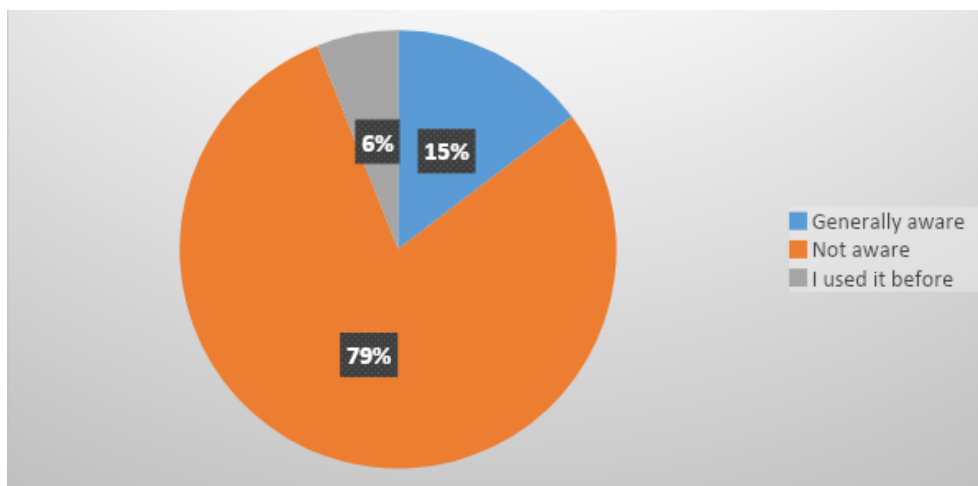


Figure 4: Miswak awareness distribution among study participants

This general unawareness could be due to the removal of the participants from the values and practices of Islam (Guntur, 2021), as well as the prominence of alternatives for maintaining oral hygiene (Jeong et al., 2022).

The participants were also asked about the frequency with which they used miswak. Most of them did not use it at all ( $n = 98$ , 84.5%), while only four participants used it every day (3.4%). The participants assessed the advertisement on a 7-point Likert scale. Their responses are shown in Table 1.

Table 1.

*Participants' perceptions of advertisement one*

| Item   | Mean | SD   | Mean % | Rank |
|--|------|------|--------|------|
| Please indicate your assessment of the message about miswak use.                         | 5.37 | 1.48 | 76.79% | 3    |
| Miswak use is relevant to me.  | 3.17 | 1.78 | 45.33% | 9    |
| I think miswak use sounds involving.   | 3.03 | 1.67 | 43.32% | 10   |
| I think miswak use sounds interesting.   | 3.63 | 1.87 | 51.90% | 8    |
| Please indicate how familiar you were with the use of miswak before you saw the message. | 1.79 | 1.58 | 25.59% | 11   |
| How strongly does the ad motivate you to use miswak?                                     | 3.66 | 1.78 | 52.33% | 7    |
| The use of miswak in this message grabbed my attention.                                  | 4.47 | 1.80 | 63.92% | 6    |
| The use of miswak in this message is worth remembering.                                  | 4.65 | 1.67 | 66.49% | 5    |
| The use of miswak in this message is easy to understand.                                 | 4.86 | 1.92 | 69.49% | 4    |
| I expended effort looking at the content of this message.                                | 5.78 | 1.30 | 82.65% | 2    |
| I paid attention to the content of the message.  | 6.12 | 1.24 | 87.51% | 1    |
| Overall  | 4.23 |      | 60.48% |      |

Male participants had a more positive response on average than female participants ( $P = 0.003$ ). Furthermore, participants who were already aware of miswak had a more positive mean response ( $P < 0.001$ ). When the participants were asked about the best medium for promoting the use of miswak, they responded that social media is the best method ( $n = 75$ , 64.7%), followed by broadcast television ( $n = 24$ , 20.7%).

### 3.2. Results for Advertisement 2

The questionnaire for advertisement two was completed by 103 teenagers. The mean age of these participants was  $14.02 \pm 2.92$  years, with a median age of 15 years. Their ages ranged from 12 to 17 years. This sample included 51 males (49.5%) and 52 females (50.5%) (Figure 5).

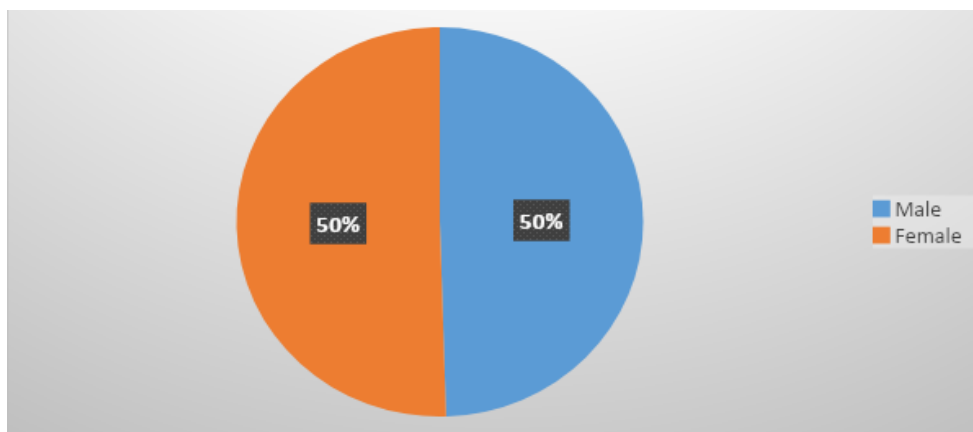


Figure 5: Gender distribution among study participants

The participants mentioned several things that they liked about the advertisement, such as how it was understandable, clear, simple, and readable. On the other hand, they criticised the advertisement as being poorly designed. Most of these study participants were unaware of miswak ( $n = 89$ , 86.4%). Figure 6 shows the distribution of awareness among the study participants.

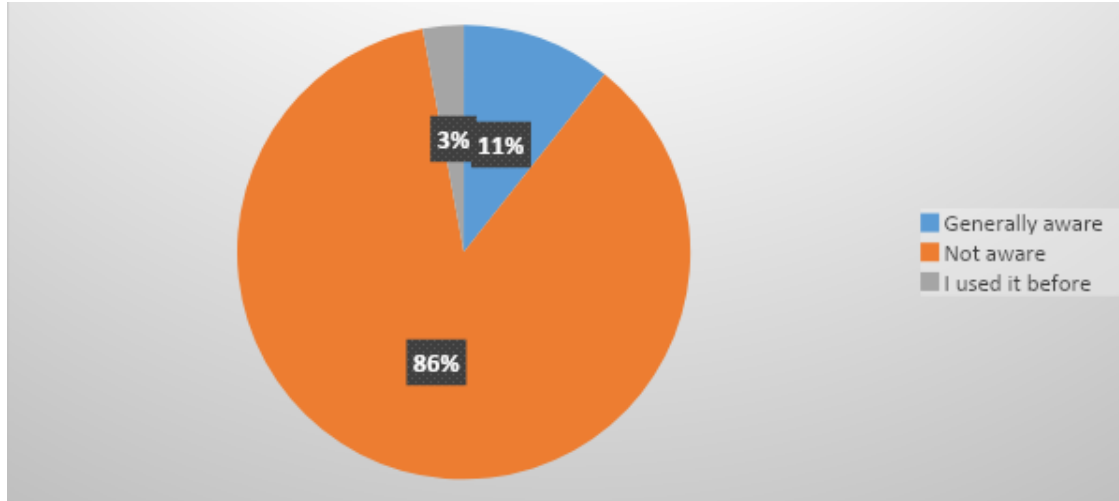


Figure 6: Miswak awareness distribution among study participants

The participants were asked about the frequency of their miswak use. Most of them did not use it at all ( $n = 96$ , 93.2%), and only one participant used it every day (1%). These participants also assessed the advertisement on a 7-point Likert scale. Their mean responses are shown in Table 2.

Table 2.

*Participants' perceptions of advertisement two*

| Item   | Mean | SD   | Mean % | Rank |
|--|------|------|--------|------|
| Please indicate your assessment of the message about miswak use.                         | 5.51 | 1.49 | 78.79% | 3    |
| Miswak use is relevant to me.  | 2.51 | 1.76 | 35.89% | 9    |
| I think miswak use is involving.   | 2.51 | 1.62 | 35.89% | 9    |
| I think miswak use is interesting.   | 2.86 | 1.84 | 40.89% | 8    |
| Please indicate how familiar you were with the use of miswak before you saw the message. | 1.75 | 1.77 | 25.02% | 10   |
| How strongly does the ad motivate you to use miswak?                                     | 3.31 | 1.75 | 47.33% | 7    |
| The use of miswak in this message grabbed my attention                                   | 3.87 | 1.88 | 55.34% | 6    |
| The use of miswak in this message is worth remembering.                                  | 3.90 | 1.71 | 55.77% | 5    |
| The use of miswak in this message was easy to understand.                                | 5.13 | 1.62 | 73.35% | 4    |
| I expended effort looking at the contents of this message.                               | 5.63 | 1.37 | 80.50% | 2    |
| I paid attention to the contents of the message.   | 5.86 | 1.48 | 83.79% | 1    |
| Overall  | 3.89 |      | 55.62% |      |

The male participants had a more positive mean perception than the females ( $P = 0.043$ ). Furthermore, participants who were more aware of miswak had a more positive response on average ( $P < 0.001$ ).

As with the first group, when we asked the participants about the best medium for promoting the use of miswak, they identified social media ( $n = 72$ , 69.9%), followed by broadcast television ( $n = 22$ , 21.4%) and printed media ( $n = 9$ , 8.7%).

When comparing the results of the analysis of the two advertisements, the chi-square statistic is 2.5139. The p-value is .642146. The result is not significant at  $p < .05$ .

#### 4. Discussion

The Arak tree is the source of the miswak (*Salvadora persica*), a kind of chewing stick used to keep one's teeth and gums clean. This chewing stick has a diameter of 1 centimetre and length of 15 centimetres, making it perfect for use in the mouth and on the teeth (Temkar & Menon, 2021).

Miswak was used by a number of different civilisations (Kumar et al., 2019), but it was not until the Islamic period that maintaining personal cleanliness, which included the use of miswak as a technique for maintaining oral hygiene, became an essential component of religious devotion (Pathekar et al., 2021). As a kind of badge of pride for their devotion to religious instruction, supporters of the *Jamaah Tabligh*, also known as the Islamic Education Movement, were known to always have a miswak on hand (Saleh et al., 2017). The practice of miswak use is still carried out, and it is widely acknowledged among Muslim communities that it serves as a cultural identifier (Nordin et al., 2020). However, the younger generation today is less motivated to use miswak than older generations were (Sejal et al., 2021).

Contradictory accounts of people who use miswak may be found in nations with low standards of living, as well as in diverse regions of Saudi Arabia, Africa, Iran, India, and Malaysia. In Cameroon, an extremely high proportion of the population (85%) uses miswak (Agbor & Azodo, 2013), which is used either alone or in conjunction with a toothbrush. The vast majority of *Jamaah Tabligh*, including 73% of mosque attendees surveyed in Kuala Lumpur, Malaysia, believe that the additional consumption of miswak is a matter of personal preference (Baharin et al. (2016). In contrast, a study in Aseer, Saudi Arabia by Al-Hammadi et al. (2018) found that just around half of the population uses miswak, either by itself or in conjunction with a toothbrush.

Advertising has contributed to a greater level of awareness among the general public concerning proper health behaviour (Hackley & Hackley, 2021). According to Veloutsou and Ahmed (2006), the reactions of audiences depend on the meaning assigned to advertisements as well as the characteristics of both the advertisement and audience. In the present study, the effectiveness of two distinct pro-miswak advertisements among Saudi Arabian adolescents was compared using digital surveys to determine which was more successful. The Saudi Arabian Ministry of Health needs to investigate and evaluate the effects of messages that encourage young people to embrace the use of miswak. Additionally, it needs to learn how to identify the connections between consumer behaviour and the effectiveness of advertising concerning oral health strategies.

This research shows a need for improvement in advertisement methods for adolescents in Saudi Arabia regarding miswak. According to Hackley and Hackley (2021), there are many successful advertisement strategies focused on helping people change their health behavior and habits for maintaining oral health. By analysing these strategies and understanding the main factors involved, the Ministry of Health of Saudi Arabia can use them to improve the promotion of the use of miswak as a tool for oral aid.

When it comes to the methods used in effective advertisements, information and language that appeal to the preferences of a Muslim audience can improve persuasion (Hackley & Hackley,



2021). For example, religious beliefs are a significant driving force behind the choice to use miswak in some Muslim countries (Agbor & Azodo, 2013; Al-Hammadi et al., 2018; Ibrahim et al., 2020; WM & LA, 2017).

A study conducted by Naseri and Tamam (2012) points out that references to religious values, as well as the use of religious cues or symbols, are effective in advertisements. As a result of a lack of comprehension of the method of using miswak and the practice of the Prophet Muhammad (PBUH), few Saudi adolescents who took part in the study were aware that the use of miswak was a sunnah (custom) of the Prophet Muhammad, peace be upon him. An existing study showed that only 32.6% of the general Muslim population in Malaysia admitted to consuming miswak (Nordin & Abd Rahim, 2014). The continued use of miswak in Muslim communities may be attributed to both religious and secular factors (WM & LA, 2017). One of these reasons is the widely acknowledged benefits that miswak offers for oral health care (Ibrahim et al., 2020).

There are benefits of using miswak in areas where it is harvested. For example, the cost of using a miswak toothbrush in Saudi regions may be lower than the cost of using a traditional toothbrush, which would give Saudi adolescents more reason to use miswak sticks (Al Subait et al., 2016). *Rhus vulgaris* Meikle and *Landa trifolia* L are the two kinds of chewing sticks most often found in Uganda (Odongo et al., 2011). Some of the most popular plant sources include neem (*Azadirachta Indica*) in India, lime tree (*Citrus aurantifolia*) and orange tree (*Citrus sinensis*) in West Africa, senna (*Cassia vennea*) in other regions of Africa, and Arak (*Salvadora persica*) in the Middle East (Ra'ed I & Khalid, 1999). In contrast to the Indian neem, miswak may be found throughout Asia, Oceania, and even Africa (Niazi et al., 2016). In addition to its low cost of manufacturing, the simplicity of acquiring access to the source contributes to the widespread use of miswak as a resource (Al-Hammadi et al., 2018). A sunnah by the Prophet Muhammad (PBUH) mentions that Allah favours those who maintain healthy habits for their body (Nordin & Abd Rahim, 2014). Miswak is a tool for oral aid used by the Prophet Muhammad (PBUH), and parents should help their children adopt the use of miswak as a healthy habit (Pathekar et al., 2021).

In recent years, most adolescents in Saudi Arabia have used social media for key daily activities (Ahmad Rizal et al., 2022). One such activity is watching online media. For example, YouTube is a platform for content creators to present their own media to others. Between videos, viewers will encounter advertisements aimed at the viewer's interests and determined by an algorithm (Ahmad Rizal et al., 2022; Hackley & Hackley, 2021). The problem with this method is that most advertisements do not attract the viewer's interests due to poor choices by the algorithm. This makes targeting adolescents through social media quite difficult (Davis & Duke, 2018). However, using methods of advertisements that catch the viewer's eye helps to ensure that the viewer will pay attention to advertisements promoting healthier oral aid habits (Petersen, 2003).

## **5. Conclusion**

Although Saudi Arabia is a mostly Muslim country, most people who took part in this research did not use miswak in their day-to-day lives. The participants had similar responses to the two advertisements. In addition, the mean assessments of both pieces of advertising were below average because of several problems with the commercials' designs and use of images. The individuals who took part in the research believed that social media is the most efficient method of conveying information on miswak use. The examination of the influence of visual imagery and efficiency of ads may contribute to the improvement of oral health among teenagers in Saudi Arabia and the corresponding prevention of sickness. This finding needs to be verified

by further research since the sample size was rather small and the influence was only evaluated at a particular moment in time.

Most adolescents in the current generation of Saudi Arabians are less aware of the culture and values of Islam than those of older generations. This is mainly due to the rise of social media, which attracts the attention of adolescents during their youth, when they learn the most. Thus, health organisations in Saudi Arabia should utilise more effective methods of advertisement to attract all generations, both old and new, and help them adopt healthy oral aid habits.

### Competing Interests

The authors declare that they have no competing interests.

### Availability of Data and Materials

The datasets used and/or analysed in the current study are available from the corresponding author on reasonable request.

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