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### The Role of Social Media on Oral Health Promotion among Youth in Jordan

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#### ABSTRACT

**Objectives:** The aim of the current study is to assess the prevalence of using social media to obtain and share oral health information among Jordanian youth.

**Materials and Methods:** A cross-sectional study was conducted among university students in northern Jordan using a self-administered questionnaire distributed electronically. Data was analyzed by the Statistical Package for Social Sciences (SPSS, v.25.0). All statistical analyses were carried out at a significance level of  $p < 0.05$ .

**Results:** A half of respondents (50%) were using social media for oral health reasons. The most frequently used applications were; Facebook (89.1%), WhatsApp (78.0%), and YouTube (67.8%). The majority (67%) stated that easy access to information was the main reason for using social media as a source of oral health information, while (58%) of the respondents chose the difficulty in communicating with specialists as the main reason.

**Conclusions:** Social media platforms were considered an essential source of oral health information by university students. Easy and free access to internet represented the most reported advantage. Difficulty in communicating with oral health specialists was perceived as the major barrier towards using social media.

**Keywords:** Social media, Oral health promotion, Internet applications, Barriers, Jordan, Youth.

#### 1. Introduction

Social media platforms are rapidly growing and their applications dynamically attract millions of users. The use of social media has dramatically increased in the past decade due to an enormous increase in advancement in technology. Scientists define social media as “a group of internet-based applications that build on Web 2.0 technology”, creating and exchanging contents among users, which became easier and more convenient (1).

According to the Data reportal website, about 59.4% (4.76 billion users) all over the world are using social media as of January 2023 (2). Facebook, Twitter, Instagram, YouTube, TikTok, and WhatsApp are

examples of social media applications. Facebook is ranked the most popular social network by the number of active users, as of April 2024, followed by YouTube (3). Social media can be used to connect one with others, exchange ideas, and share information, amusing themselves. Easy access to social media applications facilitates the communication and information exchange among people across the world. These applications gained their popularity, because of their easy way to connect one with friends, family, and colleagues across distances (4), and they provide a publicly accessible source of information. Social media might also be used to disseminate medical knowledge (5).

These applications may serve as a source of information for patients and support them in clinical care (6). Obviously, in addition to searching in traditional health topic information sources, patients' activity on the internet is increasing (7). Crossing geographical boundaries, social media platforms make it easier to extend clinical care to distant patients (6). The extensive use of social media by youth encourages the utilization of these platforms in providing oral health information. Compared to traditional media, such as newspapers, radio, and television, social media can be more cost-effective in reaching these populations and providing them with information to improve their oral health practices (8-10). Planning social media-based health education campaigns may benefit from understanding whether social media users also prefer to use social media to receive oral health information. The prospect is attractive given that data on social media platforms is readily available, easily accessible and usually available at no cost (11).

In Jordan, despite the neglect of oral health importance and the unmet treatment needs among Jordanians (12), there are also insufficient epidemiological studies on raising the awareness for better oral health (13-17). Moreover, up to the best of our knowledge, there are no studies in Jordan showing the role of social media in gaining enough oral health information and barriers hindering gaining this information.

Given that social media can be used to disseminate information and health-related topics amongst individuals (5,7), to date, there are no studies conducted in Jordan to explore the utilization of social media platforms for obtaining and exchanging oral health knowledge. There is also no available literature in Jordan highlighting the challenges and barriers that hinder the use of social media as a knowledge engine. Therefore, the objectives of the present study are to assess the prevalence of using social media to obtain and share oral health information among university students in Jordan and highlight the potential barriers that might affect students' use of social media as a key oral health information source.

## **2. Materials and Methods**

### **2.1 Study Design and Setting**

A cross-sectional survey was conducted among university students in Jordan, particularly in the northern

region, in February 2021. The study was conducted according to the guidelines of the declaration of Helsinki, and approved by the Institutional Review Board (IRB)) at Jordan University of Science and Technology (JUST) (Ref.No.28/136/2020). The questionnaire was distributed electronically as a Google Form through the official university e-mail list that was provided by the admission unit at each university, as well as through the official social networking groups considered by each university, using Facebook platform.

### **2.2 Questionnaire**

A self-designed questionnaire was created in English and then translated into Arabic, the mother tongue of most participants, to increase the validity of the questionnaire and to ensure that there was no misunderstanding of terms and vocabulary (18). Bilingual experts in Second Language Education (SLE) translated the questionnaire. Both English and Arabic versions of the questionnaire were then checked by a panel of experts for clarity and precision.

The questionnaire was used to assess the use of social media to obtain and share oral health information among the targeted population of the current study. Twenty-eight closed and open-ended questions were divided into two main categories.

1. The first category was concerned with demographic data, such as educational background, specialization, and whether or not the participant used social media applications.
2. The second category consisted of multiple-choice questions, where participants could select more than one answer. The following items were included:
  - a. General source to obtain oral health information.
  - b. Usage of social media to receive and share oral health information.
  - c. The most used social media applications to search and get oral health information.
  - d. The most searched oral health topics through social media.
  - e. The advantages of using social media as a source of oral health information.
  - f. The barriers hindering the use of social media in receiving oral health information.

The structured questionnaire was tested through a

pilot study conducted in December 2020 to check validity and reliability. The results of the pilot study were not included in the main study. The pilot study was conducted by sending the questionnaire to 21 university students randomly selected from the e-mail lists. The results of the pilot study were evaluated, and the Cronbach's alpha coefficient ( $\alpha$ ) was calculated to test the internal reliability, where a value of 0.87 was considered adequate, indicating that the items have acceptable internal consistency values (19).

Participation in the study was voluntary, and full confidentiality of the collected data was ensured. Informed consent was obtained from all subjects involved in the study. Exclusion criteria were set according to nationality, where non-Jordanian students were excluded in order to reflect the social acceptance among Jordanians in particular. The time duration of the publication of the questionnaire was 14 days. After one week, a reminder note was sent, encouraging the targeted population to respond. A total of 10,000 invitations were sent.

### 2.3 Statistical Analysis

Data was processed by the Statistical Package for Social Sciences (SPSS), version 26 (IBM SPSS Statistics for Windows, version 26.0. IBM Corp., Armonk, NY). A descriptive analysis of univariate distributions was obtained for each of the questionnaire items.

### 3. Results

A total of 10,000 invitations were sent, and the response rate was 15% (1500 fully completed responses). However, according to the exclusion criteria set in the current study; e.g. nationality, only 909 responses were considered. Using the Raosoft sample size calculator, the study power was set at 95% with a margin of error of 5% and 50% as a response distribution (20), which resulted in a recommended sample size of 377 participants.

The majority of the respondents 904 (99.4%) were using social media. Regarding oral health, 450 (50%) students used social media in gathering and exchanging oral health information (67.6% for women and 32.4%

for men). The respondents' age ranged from 18 years to 52 years with a mean age ( $\pm$ SD) of 22.3 ( $\pm$ 5.5) years. The demographic characteristics concerning using social media in gathering and exchanging oral health information are shown in Table 1.

**Table 1:** Demographic characteristics of participants who use social media in getting oral health information (N=450)

Variable	Frequency (N%)
<b>Gender</b>	
Male	146 (32.4%)
Female	304 (67.6%)
<b>Age group (y)</b>	
18-25	392 (87.1%)
26-34	38 (8.5%)
35 or more	20 (4.4%)
<b>University</b>	
Irbid	29 (6.4%)
Jadarah	41 (9.1%)
Jerash	30 (6.7%)
JUST	224 (49.8%)
Yarmouk	126 (28.0%)
<b>Specialty</b>	
Business	40 (8.9%)
College of Arts and Sciences	270 (60.0%)
Medical	75 (16.7%)
Engineering	65 (14.4%)
<b>Level of education</b>	
Undergraduate	407 (90.4%)
Graduate	43 (9.6%)

The main sources of oral health knowledge gathering and exchanging were listed as internet and social media (83.3%), health workers (52.4%), family and friends (24.4%), magazines/ publications/ newspapers (15.3%) and TV (15.1%) (Table 2).

**Table 2:** The percentage of main sources and applications used for getting oral health information

Sources for oral health information (N=450) (percent %)		Most used social media applications (N=450) (percent %)	
1. Internet / Social Media	83.3%	1. Facebook	89.1%
2. Health workers	52.4%	2. WhatsApp	78.0%
3. Family / friends	24.4%	3. YouTube	67.8%
4. Magazines/publications/newspapers	15.3%	4. Instagram	65.8%
5. TV	15.1%	5. Snap Chat	48.9%
		6. Twitter	28.2%
		7. LinkedIn	10.9%
		8. Telegram	3.8%

Regarding the feedback to the questions related to the most used applications for accessing oral health information, the majority of the respondents reported Facebook (89.1%), WhatsApp (78%) and YouTube (67.8%) (Table 2).

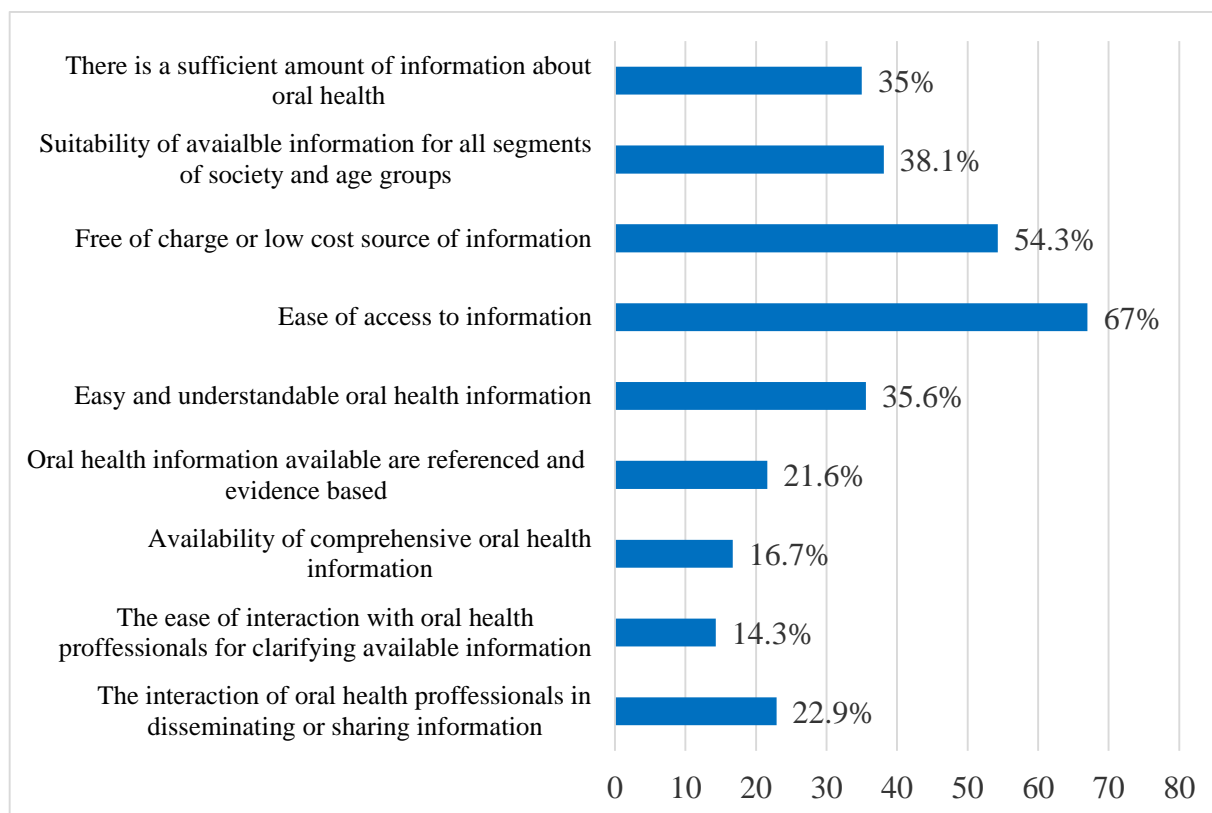
The oral health subjects that respondents have routinely searched/viewed through social media are shown in Table 3. Obviously, bleaching and oral hygiene were the most searched/viewed topics by university students.

**Table 3:** The percentage of oral health-related topics searched/viewed (%)

Topics	Percent (%)
Oral hygiene	64.4%
Bleaching	64.4%
Alleviating the pain of a toothache	37.3%
Cosmetic dentistry	36.9%
Orthodontics	33.8%
Pulp therapy	24.3%
Implanting	21.8%
Filling	21.6%
Surgeries	18.9%
Bridge	14.7%
Dentistry for young children	8.7%

Regarding illustrating the benefits and advantages of employing social media as the major source of oral health information, almost two-thirds of the respondents

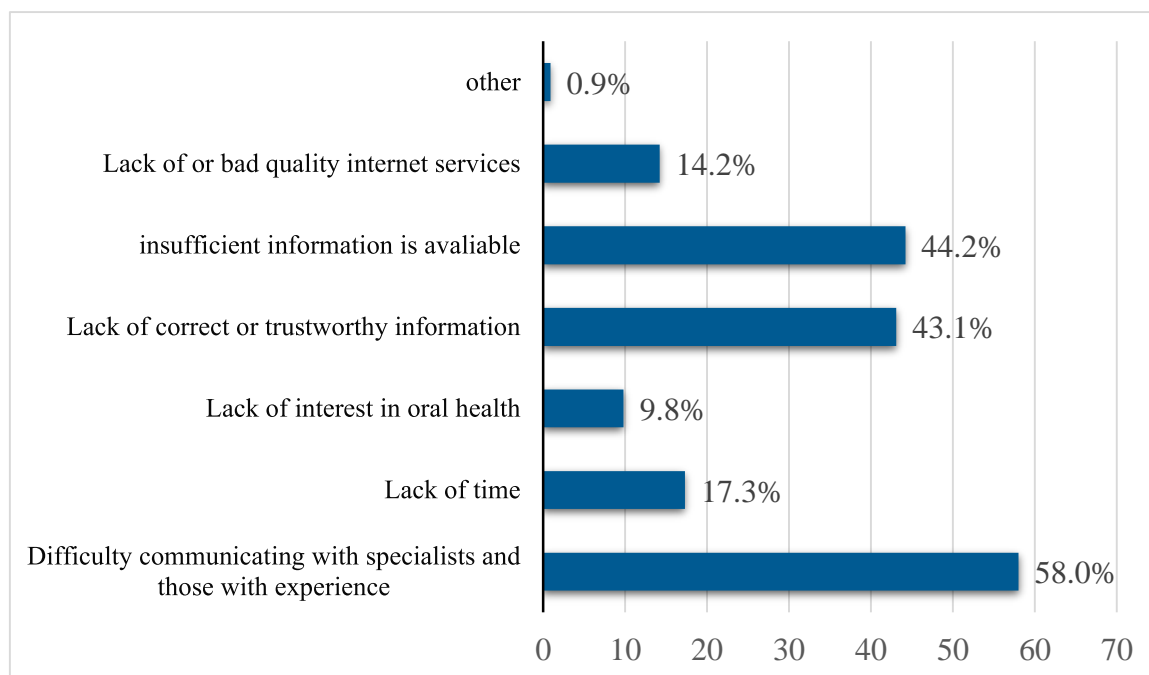
(67%) stated that ease of access to information is the main advantage of social media, while 54.3% reported that social media is a cost-effective option (Figure 1).



**Figure 1:** The advantages of using social media as the main source of oral health information

The bar chart in Figure 2 shows the barriers to using social media for obtaining oral health information. More than a half of the participants (58.0%) reported difficulty of communication with specialists and oral health

experts as the main barrier, followed by insufficient information available (44.2%) and the lack of trustworthy information (43.1%).



**Figure 2:** The barriers of using social media in getting oral health information

#### 4. Discussion

Recently, it has been reported that social media is playing a significant role in health care (21,22). Approaching information associated with general health has significantly boosted due to patients' freedom of access and the remarkable increase in the medical-related publications by both public and private sources (23). Diverse populations practise searching and exploring the internet via their computers or smart phones, and they are increasingly using social media to gain general and oral health information. Although social media is considered as a potential tool for health education, it requires precise application and may not always achieve the expected outcomes (8). However, only few studies in the literature described the relationship between social media and oral health promotion. In addition, studies in Jordan investigating the role of social media in acquiring oral health information are lacking, hence we compared some of our results with those of studies related to general health.

In the present study, university students were chosen to reflect the Jordanian youth social acceptance towards utilizing social media for obtaining and sharing oral health information. Although the response rate is low, a sample size of over 500 is considered to be excellent for an observational study (24). Most of the students who utilized social media for obtaining oral health information were women (67.6%). This is in agreement with Pew Research Center's Internet and American Life Project's tracking surveys, which found that women are significantly more likely than men to use social media sites (25). In a survey that investigated how gender correlates to frequency of use of social media, it was concluded that women are using social media platforms more than men with statistically significant differences between them (25). This might be explained by the different attitude for men who manage to be encouraged by skills to gain general information, in contrary to women, with their emotional volatility urging them to keep close relations and gain social information (26).

The present survey showed that (55.6%) of the respondents were using internet and social media for oral health information. This is less than Americans using the internet and social media to search for general health information (72%) in the Pew project (27). According to a study by Pennbridge et al. in 1999, there are many potential justifications for the small number of people who seek health information; first, people trust

their healthcare providers more than online sources (27). Second, only few of those with internet access are expected to connect with medical professionals through e-mail or social media. lastly, it is rare for most internet users to let their medical records available and publishable *via* the internet, even if they are protected (28).

The results of the current survey revealed that the majority of university students in the northern region of Jordan prefer to use internet and social media (80.9%) as a general source of oral health information. This result is similar to the rate found in the United States, where Knotos et al (2012) found that 79.04% of Americans reported using the internet and social media to obtain general health information (28,29).

The second most used source of oral health-related information was health workers (51.8%). A previous study in the United States found that primary care physicians and nurses represented the most useful source of health information (30). The preference to seek medical advice from health professionals might be a result of an individual's belief that is consistent with traditional beliefs, where the health care professional is a respected and trusted source of information (31-33).

The current study indicated that family and friends represent also a reliable source of oral health information (27.6%). However, in the United States, 56% and 65% of adults, reporting no chronic conditions and one or more chronic conditions, respectively, obtained information or support from family and friends (34).

The present findings revealed that Facebook was the most commonly used application (89.1%). WhatsApp was ranked the second social media application used in gathering oral health information (78%). This is in contrast to previous findings, where a study by Antheunis et al. revealed that the most common application used for searching health information was Twitter (59.9%) (34). Also, they reported that Facebook was the second preferred application used for obtaining health-related information (52.3%) (34).

The current study reported that among users of social media as a source of oral health information, oral hygiene and bleaching were the most searched topics (64.4% each). This finding agrees with a previous report in Saudi Arabia that found that oral hygiene and bleaching were the top searched topics by 55% and 50% of the participants, respectively.

The benefits of applying modern communication technologies in healthcare services have been well established (35). Social media has a significant potential value, as it is considered an easy and new method to access and share information (1,35). In the current study, the majority of the participants (67.0%) stated that ease of accessing information is the basic reason for the widespread usage of social media. This conclusion matches with previous research by Elof et al., who uncovered that 61% of the South African participants believed that health promotion campaigns employed online social networks to share information more in a smooth, easy way (36).

Regarding barriers that might inhibit using social media as a source for oral health information, the majority (58.0%) of the participants reported the difficulty of communicating with specialists and health experts through social media as the main barrier, as few specialists have active and reachable social media channels, followed by insufficient available oral health information (44.2%). Also, 43.1% of the participants found that the lack of trustworthy information was one of the main barriers. An application offering a kind of direct contact between health professionals and individuals *via* social media would help overcome such barriers (37).

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## 5. Conclusions

Social media has an evident role in obtaining information about oral health. Accessibility and low cost of social media applications are the main reasons that encourage youth to try obtaining necessary oral health information online. The difficulty in communicating with oral health specialists is among the main barriers for considering social media as a reliable source to obtain oral health information. This study suggests that promoting oral health *via* social media applications is a promising tool for disseminating oral health information and promoting oral health services. Expanding the survey by considering other geographical areas in Jordan or in other countries, and including different categories of youth represent is an urgent need.

## Conflict of Interests

The authors declare no conflict of interests, in the choice of research project, the design of the study, the collection, analysis or interpretation of data, the writing of the manuscript, or the decision to publish the results.

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