

# Health information on social media. *Perceptions, attitudes, and practices of patients and their companions*

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## ABSTRACT

**Objectives:** To assess social media and search engines used to find health information in Saudi patients and their companions and to describe their perceptions, attitudes, and practices.

**Methods:** A cross-sectional study was carried out on 374 patients and their companions at a tertiary care hospital in Riyadh, Saudi Arabia. The data were collected between January and March 2018 using a self-administrated questionnaire adopted from the literature and developed in Arabic. The questionnaire was validated and modified by the researchers to fulfill the purpose of this study. The questionnaire contains 4 sections (25 questions), divided into a demographic section and the 3 sections assessing perceptions, attitudes, and practices.

**Results:** Eighty-five percent sought health information using social media; of whom 293 (78.3%) used WhatsApp, 237 (63.4%) used YouTube, and 46 (12.3%) used Facebook. Furthermore, 72% searched information for themselves and 52% for a family member. Approximately 28% of participants had used social media for medical consultations. The reliability of health information on social media was met for 51% of participants, and 81.4% claimed that the health information obtained was knowledgeable. However, only 29% share their personal health experience with the public on social media.

**Conclusion:** Our findings suggest that the majority of the participants used social media platforms to find information related to their health conditions, while approximately one third received direct medical consultations online. Public awareness to use reputable sources for health information is needed.

*Saudi Med J 2019; Vol. 40 (12): 1294-1299  
doi: 10.15537/smj.2019.12.24682*

The internet is a convenient source for obtaining educational materials and information.<sup>1</sup> Social media refers to web-based applications that allow people to create and exchange information such as

blogs and microblogs (for example, Twitter), content communities (like YouTube), and social networking (for example, Facebook and LinkedIn).<sup>2,3</sup> Social media and online resources have affected most aspects of our lives, and many are now using it to guide their healthcare decisions.<sup>4,5</sup>

Over the past years, social media enabled an unrestricted sharing of information and knowledge distribution, including medical and healthcare information that can be quickly discovered by patients. The use of social media is unlimited; some people use the mentioned platforms to receive medical consultations, while others use it to find information related to their conditions.<sup>1,2,4,5</sup> Several studies are stressing how technology has empowered individuals and changed the way they seek out health-related information on the internet.<sup>6,7</sup>

Social media provide informal channels for disease reporting. It also plays a vital role in connecting patients all over the world with others that have the same health conditions, enabling them to discuss mutual concerns and solutions. Patients take into their consideration the comments of strangers when making medical decisions.<sup>3-5</sup>

Today, many patients are seeking online advice from physicians they have never met. The advantage of an online medical consultation is that there are no geographic boundaries, as the patient can gain access to reputed physicians that are not usually available. Another advantage is the cost; the consultations provided online are lower in cost. However, this will not be suitable for many cases, where a physical examination is needed.<sup>8</sup>

Although social media can be used to enhance patient care and education, it might also create potential risks to both the patients and healthcare professionals. The distribution of poor-quality information can cause harm to patients and damage the professional image.<sup>9</sup> Even though patient engagement in social media was seen by many as an influential factor in improving health and reducing costs,<sup>10</sup> there is a considerably high risk of patients encountering misleading information. The health care practitioners can help reduce the potential harm caused by untrustworthy information retrieved from social media by sharing accurate knowledge and educating patients to reputable sites. Another risk is the inappropriate exchange of online information or advice for in-person visits to a healthcare provider.<sup>2</sup>

Thus, the use of social media among patients has been widely spread, which is changing the traditional information-seeking behaviors. This study aims to assess the use of social media networks in Saudi patients and their companions for obtaining health information and to describe their perceptions, attitudes, and practices.

**Methods.** This is a cross-sectional study conducted between January and March 2018 at King Fahad Medical City (KFMC), Riyadh, Saudi Arabia. The ethical approval for this study was obtained from the Institutional Review Board at KFMC and conducted according to Declaration of Helsinki principles. The inclusion criteria consisted of Saudi adult patients and their companions seen in KFMC outpatient clinics. The participants should be literate in Arabic and use the internet regularly (daily). Those who did not meet the inclusion criteria were excluded. A research coordinator distributed a self-administered questionnaire to be completed by each participant who was randomly selected from the waiting rooms of the outpatient clinics at KFMC. Participants willing to partake in this study signed a consent form before completing the questionnaire.

A self-administered 4-section questionnaire was adopted from the literature to assess the use of social media by Saudis seeking health information.<sup>5</sup> The self-administered questionnaire was developed in Arabic (the native language in the Kingdom of Saudi Arabia) and modified by the researchers to fulfill the purpose of this study and to ensure validity. We searched PubMed and other databases to retrieve relevant literature that addresses our research question. First, the literature was reviewed, and previous instruments were examined to develop drafts. Second, the questionnaire was reviewed by 3 experts: a social media expert, a researcher, and an epidemiologist. Finally, a pilot survey of 40 Saudi patients and companions was conducted. Taking the suggestions of the experts and the outcome of the pilot study into consideration, a few questions were developed, and others were added or deleted to enhance the validity. The pilot survey data were not included in the final analysis. The reliability was measured using Cronbach's alpha tool. Cronbach's alpha of the questionnaire for sections II was 0.76, section III was 0.68, and section IV was 0.74.

The questionnaire consisted of 4 sections with a total of 25 questions. The first section involved of socio-demographic data of the participants, such as gender, age-category, income, education level, marital status, and history of at least one chronic disease as a binary variable (yes or no). The second section evaluated the participants' perceptions of health information

found on social media using four questions measured by "yes", "no", and, "don't know" choices. Four questions were used in the third section to assess their attitudes in this regard, including sharing medical experiences, the desire to communicate on social media, evaluating physicians on social media, and applying previous experiences of the health condition. Likert scales (3- and 5-point) were used for the perceptions, attitudes, and practices questions. While the final section determined the practices of social media usage for obtaining health information. Participants were mainly asked if they seek medical consultation via the Internet; response choices were yes or no. Participants were also asked about the reasons behind this practice and the influence of social media on their behavior toward using specific medication.

A pilot survey of 40 Saudi patients and their companions was conducted to estimate the use of social media among them for obtaining health information. The results showed that 32 (80%) of the participants regularly used social media. This outcome permitted us to estimate the required sample size of 385 participants. The estimated sample size was calculated using the Raosoft online sample size calculator, 95% confidence interval, an assumed 50% prevalence of patients using social media for medical information, and a 5% margin of error.

**Statistical analysis.** The demographic characteristics of the participants were reported as mean  $\pm$  standard deviation for continuous variables, and categorical variables were reported as counts (percentage). The Chi-square test was used to assess which socio-demographic variables are associated with the use of social media for acquiring health information. Statistical analyses were carried out using the Statistical Packaged for Social Sciences for Windows, version 22.0 (IBM Corp, Armonk, NY, USA) package (a 2-tailed, p-value of 0.05 was considered statistically significant).

**Results.** The demographic information of the participants is summarized in Table 1. Among the 374 participants, 352 (93.9%) used at least one type of social media. WhatsApp usage was predominant (78%), followed by Snapchat (67%), YouTube (63%), and Twitter (58%). Only 211 (56%) participants reported that they find medical information through physicians, followed by Google search engine (54%). From a list of 11 sources of medical web pages provided in our questionnaire (Altibbi, Webteb, Mayo Clinic, Medscape, WebMD, Drugs.com, World Health Organization, Ministry of Health, Food and Drug Administration, Daily Medical Info, and Others), 286 respondents (76.3%) were familiar with at least one of

**Disclosure.** This study was funded by the Research Center, King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia (Grant no. 018-011).

them.

The participants' perception of social media usage is presented in Table 2. A 81.4% of the participants' believe the health information available in social media increased their health awareness. Approximately 50% think the obtained health information from social media is reliable, while 73.3% claimed that the information acquired has an influence on their health status.

The attitude of participants regarding social media usage is shown in Table 3. Among 347 respondents, 83%

expressed their interest in using social media to communicate with their physicians, and 67% do not prefer to share their medical conditions with the public through the internet. A 38% of the participants are interested in applying the experience of other patients on their health condition.

Approximately 85% of respondents sought medical information using search engines. Out of these, 72.8% searched for information through social media. Most (72.2%) searched for themselves and 52.4% for family members. The level of online health information was satisfactory in approximately 80% of the respondents.

Twenty-seven percent of participants (n = 104) who used social media for medical consultations claimed that the online information provided by physicians is useful. An additional motive for such a practice was the time since the main reason for seeking consultations on social media was the lack of time to visit the physician's office, which is expressed by 27.8% of participants. (Table 4).

We investigated the association between the participant's perceptions, attitudes, and practices toward

**Table 1** - The demographic characteristics of participants (N = 374).

Variable	n (%)
<b>Age category (years)</b>	
18-24	58 (96.2)
25-34	169 (47.4)
35-44	85 (23.8)
45-54	30 (8.4)
55+	15 (4.2)
<b>Gender</b>	
Male	153 (40.9)
Female	221 (59.1)
<b>Marital status</b>	
Single	115 (30.7)
Married	242 (64.7)
Divorced	10 (2.7)
Widowed	4 (1.1)
<b>Residency</b>	
Inside Riyadh	260 (69.5)
Outside Riyadh	111 (29.7)
<b>Level of education</b>	
Primary and middle school	22 (5.9)
Secondary school	85 (22.7)
Bachelor's degree	239 (63.9)
Higher education	28 (7.5)
<b>Profession</b>	
Unemployed	145 (40.4)
Government	149 (41.5)
Private	65 (18.1)
<b>Income (SAR)</b>	
≤10,000	102 (57.3)
>10,000	76 (42.7)
<b>History of at least one chronic disease</b>	
Yes	90 (24.1)
No	284 (75.9)
<b>Types of social media used</b>	
WhatsApp	293 (78.3)
Snapchat	249 (66.6)
YouTube	237 (63.4)
Twitter	217 (58.0)
Instagram	210 (56.1)
Google+	99 (26.5)
Facebook	46 (12.3)
Others	25 (6.7)
Data are presented as numbers and percentages (%).	

**Table 2** - Participants' perception of health information on social media.

Participant's perception	n (%)
Influence of social media health information on your health status (N=337)	Yes: 247 (73.3)
	No: 68 (20.2)
	Don't know: 22 (6.5)
Influence of social media to select a specific doctor/hospital (N=341)	Yes: 230 (67.4%)
	No: 90 (26.4%)
	Don't know: 21 (6.2)
Reliability of health information through social media /search engines (N=335)	Very reliable: 23 (6.9)
	Reliable: 171 (51)
	Unreliable: 141 (42.1)
Beliefs of social media health information in enhancing awareness (N=340)	Yes: 277 (81.4)
	No: 25 (7.4)
	Don't know: 38 (11.2)
Data are presented as numbers and percentages (%).	

**Table 3** - Participants' attitude regarding health information on social media.

Participant's attitude	n (%)
Sharing a medical experience with the public via social media (N=344)	Yes: 100 (29)
	No: 230 (66.9)
	Don't Know: 14 (4.1)
The desire of using social media to communicate with a physician (N=347)	Yes: 289 (83.3)
	No: 42 (12.4%)
	Don't Know: 15 (4.3)
Evaluating a Physician /Hospital via social media (N=348)	Yes: 108 (31)
	No: 229 (56.8)
	Don't Know: 11 (3.2)
Applying the previous person's experience on health condition (N=339)	Yes: 129 (38.0)
	No: 200 (59.0)
	Don't Know: 10 (3.0)
Data are presented as numbers and percentages (%).	

**Table 4** - Participants' practice regarding health information on social media.

Participant's practices	n (%)
Seeking medical consultation via the internet (N=374)	Yes: 104 (27.8) No: 270 (72.2)
Reasons behind seeking medical consultation via the internet or social media	Not willing to see a physician: 92 (24.6) Insufficient time to see a physician: 104 (27.8) Free online consultation: 75 (20.0) Useful online consultation: 95 (25.4) Fear from contamination: 23 (6.2)
Influence of internet or social media on using a specific medication (N=340)	Yes: 133 (39.2) No: 178 (52.3) Don't know: 29 (8.5)
Previous usage of social media to obtain health information for self or family members (N=374)	Yes: 272 (72.8) No: 102 (27.2)
Previous usage of Search Engines to obtain health information for self or family members (N=374)	Yes: 313 (83.5) No: 61 (16.5)
Searching topic in health information	Self: 270 (72.2) Family members: 196 (52.4)
Social media health information represent as second medical opinion (N=330)	Yes: 227 (68.8) No: 61 (18.5) Don't know: 42 (12.7)
The frequency of search engines used for health information (N=342)	Daily: 24 (7.0) Weekly: 42 (12.3) Monthly: 131 (38.3) Annually: 24 (7.0) Rarely: 106 (31.0) Never: 15 (4.4)
Searching internet engines regarding the health condition before visiting the Physician (N=343)	Very often: 61 (17.8) Often: 62 (18.1) Sometimes: 107 (31.2) Rarely: 63 (18.4) Never: 50 (14.6)

Data are presented as numbers and percentages (%).

social media with demographic variables. Among all demographic characteristics, only the level of education was found to be significantly associated with the use of social media ( $p=0.003$ ).

**Discussion.** This study shows that health information obtained from social media has an influence on the health status of the majority of the participants. Participants of this study believe that the health information available on social media has enhanced their awareness regarding their health conditions. This highlights a big concern regarding the health misinformation and alarming for the urgent need for an official healthcare social media channels.

The results revealed an important fact on the reliability of health information sought by social media users. The reliability of information exceeded half of

the total number of participants (51%); this striking figure guarantees that health care practitioners and policymakers, in addition to the social media owners, can help reduce the potential harm of misleading or wrong information transmitted through social media by guiding patients to reputable sites.<sup>3</sup> Health care professionals and policymakers raised concerns regarding the reliability of health-related information found on the internet and how to make it practical for the public. The reliability of this information is unclear; therefore, jeopardizing the overall health of involved surfers.<sup>6</sup> On the other hand, 38% of participants have claimed to rely on a previous person's experience of their health condition. Accordingly, social media can be used to improve or enhance patient care and knowledge; however, it can also create potential risks to patients.<sup>11</sup> The distribution of poor-quality information can cause harm to the patients and damage the professional image. There is a high risk of misinformation; as healthcare providers are unable to control the content that is posted or discussed.<sup>11</sup> Following previous studies, 29% of participants were willing to share their medical experience with the public on social media, thus the number of people who are looking for others with similar medical conditions or who follow others' experiences of health were growing.<sup>4</sup> Similarly, regarding the information attained from social media, our findings were comparable to the figures assessed by Song et al.<sup>5</sup> Additionally, previous studies showed matching percentages of patients and family members using social media to gain medical information.<sup>3</sup> However, our finding in term of searching related health information shows that patients are more willing than other users to get their information from social media and search engine.<sup>12</sup>

In contrast to Europe report published in 2014, 59% of European citizens used the internet to obtain health information, 82% and 87% of them searched for health-related information using search engines.<sup>13</sup> This study shows that Saudi patients and their companions' in a tertiary care hospital frequently use social media to obtain health information for themselves, and surprisingly, almost half of all online health searches are performed on behalf of a family member. In addition, 80% of the surfers are satisfied with online health information. Some evidence suggests that Saudis seek online health information on behalf of family members more frequently compared to Americans, but at a similar rate as Asian and Latin Americans who take greater responsibilities in supporting their families than their European counterparts.<sup>5</sup> These findings could elicit inconsistent views because, even though the patient engagement in social media was seen by



many as an influential factor in improving health and reducing costs, the best strategy healthcare professionals can apply for the enhancement of social media content is reducing the rate of misleading information risks.<sup>9,10</sup>

Seeking health-related information from social media have some benefits, but at the same time result in challenges. Patients report both positive and negative effects. It is essential to identify these effects for health care authorities because the ratio of patients using social media for health-related purposes is evolving, so health professionals will have to follow on the advantages and disadvantages effects of this use.<sup>11</sup>

The findings of this study can change the preliminary public health policy. It could be by encouraging health caregivers to be active users of social media, at the same time increasing the awareness of the public on the proper channels to be used for obtaining the trustable information. The use of social media by healthcare organizations could provide credible information to educate, support, advocate, and communicate among those using this platform for better prevention, detection, treatment, and care. Thus, the results of this study will help guide healthcare practitioners on how to use social media to provide consultations and will also help in developing clear policies and guidelines to reduce misleading information risk. This study shows the need for having active healthcare givers who have the right skills to interact and educate the public using social media. Therefore, we recommend creating reliable online communication channels to prevent the exacerbation of health complications.

**Study limitation.** The study was conducted in one tertiary hospital in Riyadh, which might limit the generalizability of the results. Also, the sample consisted of highly educated participants. However, participants with different levels of education and or technology skills might indicate different perceptions and practices. These limitations likely reduce the generalizability of these results to Saudis with lower education levels, that are older, or with different marital status.

In conclusion, this study shows that social media usage is widespread among Saudi patients and their companions. The majority used social media platforms to seek health information. The study participants are more likely to search for health information on behalf of family members while a minority received one-to-one medical consultations.

Awareness campaigns on the practical use of social media are needed to enhance the knowledge of Saudis in evaluating the quality of health information, together with proper guidance and education for practitioners. Developing clear policies and guidelines in addition to addressing information accuracy and reliability, perhaps

via new technologies by respective governments, might reduce the risk of misleading information.

**Acknowledgment.** We gratefully acknowledge The Grant Management Department at King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia for their financial support. Also, we would like to acknowledge the effort of our colleague, Ms. Aya AlSarheed, for her participation in the data collection process. We would like to thank American Manuscript Editors ([www.americanmanuscripteditors.com](http://www.americanmanuscripteditors.com)) for English language editing.

Received 05th August 2019. Accepted 22nd October 2019.  
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