

The prevalence of social media uses for medical consultation and health information in Saudi Arabia



Khaleel I. Alyahya^{1,2,*}, Rand A. Alhomaidhi³, Lulu S. Al-Dhwhaihy³, Nada A. Bin Semaih³, Noura A. Al-Bulushi³, Shahad M. Al-Qahtani³, Sheikah F. Al-Dossari³

¹Department of Anatomy, College of Medicine, King Saud University, Riyadh, Saudi Arabia

²Medical Education Research Lab (MERL), Riyadh Valley, Riyadh, Saudi Arabia

³College of Medicine, King Saud University, Riyadh, Saudi Arabia

ARTICLE INFO

Article history:

Received 27 January 2020

Received in revised form

1 June 2020

Accepted 2 June 2020

Keywords:

Social media

Health information

Medical consultation

ABSTRACT

To determine the reasons behind individuals' seeking medical consultation and health information from social media applications. To determine the patterns of health concerns that influence individuals to use social media for medical consultation and health information. To identify the demographical characteristics of the groups that are affected the most. A cross-sectional, quantitative, and observational study was performed. Three hundred and eighty-five social media users were studied in Saudi Arabia from December 2016 to April 2017, and the data was gathered and distributed through an online self-administrated questionnaire via Twitter and WhatsApp. Chi-square was used to examine significant associations between the socio-demographic characteristic of participants, their health status, and their uses of social media applications for medical consultation and health information. The findings of this study show that 320 (83.1%) of the participants were females, who have higher education levels and live in the central region of Saudi Arabia. Of them, 295(76.6%) reported that they use social media for medical consultation and health information, in which 131(34%) thought Twitter is the primary source for this among all applications. Social media offer many features that made them the first line for lots of people to find information nowadays. Hence, doctors and patients should be aware of social media consequences on health. Further study is required to achieve full understanding and to organize the use of this approach to ensure and get the best outcomes.

© 2020 The Authors. Published by IASE. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

The internet is a broad term used to describe a network for spreading information and allowing people to communicate with each other regardless of the geographical burden between them. In 1994, Saudi Arabia law did not allow the public use of the internet, and it was only limited to academic and medical fields to use. However, in 1999 the internet was officially available for public use. The expansion of internet usage has been rapidly increasing across the world with the development of smartphones and social media applications. For instance, the growth of internet users in Saudi Arabia rose from 200,000

users in the year 2000 to 20 million users in the year 2016, with increment representing about 63.6% of total Saudi populations (Bahkali et al., 2016; Baker et al., 2003). With the propagation of internet use, people are turning to the internet to gain information on different topics, including health information and medical consultation instead of visiting doctors.

In addition, the growth of new social media applications for smartphones such as Twitter, WhatsApp, Instagram, and Snapchat allows individuals to share their medical experience and health information regardless of its authenticity. However, some of the health professionals used their accounts to provide health information as a way of raising public awareness, and some gave medical consultation across the internet. A recent study estimated that 40% of American adults, who have access to the internet at the time, have used it to seek health information or medical consultation (Diaz et al., 2002). Another study in the Arab world

* Corresponding Author.

Email Address: alkhaleel@ksu.edu.sa (K. I. Alyahya)

<https://doi.org/10.21833/ijaas.2020.09.010>

Corresponding author's ORCID profile:

<https://orcid.org/0000-0003-3211-7759>

2313-626X/© 2020 The Authors. Published by IASE.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

estimated that about 48.6% of people within various age groups had used the internet to search for health information (Grajales et al., 2014).

The manner of getting health information and medical consultation in social media is unreliable since anyone can post information and spread it to millions of people regardless of its nature, whether it is true or not. For this reason, many health care workers have made significant efforts to make social media reliable for getting health information.

The reasons that made people often prefer the use of the internet for health information and medical consultation are autonomy, financial concern, time and distance issues, fear of embarrassments, and seeking a second opinion (CITC, no date). Moreover, patients feel satisfied when they find information about their illness before their appointment to enhance interactive communication with their doctors.

Some patterns of health concerns were encouraging individuals to use social media. For instance, a study revealed that 68% of their participants sought nutritional advice or a change in their lifestyles such as diets or smoking cessation, while 58% of participants were looking for drugs' side effects and 41% of the participants were looking for alternative medications (Jamal et al., 2015). Furthermore, many studies try to correlate the different types of social media usages with socio-demographic characteristics such as gender and age of participants. For example, a study showed that females who are using social media to search for health information had an increasing trend corresponding to an increase in age. In contrast, males showed a decreasing pattern corresponding to an increase in age (Rupert et al., 2014). People with an age range between 16 and 25 years were searching for health information more than the elderly, which is probably due to the fact they grow up having social media and internet (Grajales et al., 2014). Based on gender, a study showed that Arab females are using online-health information to increase their self-awareness level more than males. However, this may be due to the Arabic culture of living where females sit at home most of the time (Grajales et al., 2014).

We conducted this study to determine whether social media are encouraging individuals to seek medical consultation and health information in the Saudi population. Moreover, the study tried to determine the reasons and patterns of health concerns that influence people to turn to social media instead of visiting doctors. Also, the study aimed at getting a view on the socio-demographic characteristics of the groups influenced by social media.

2. Methodology

A quantitative, observational, and cross-sectional study was conducted in Saudi Arabia from November 2016 to April 2017. The targeted population of the study was Saudi social media

applications users of 18 years or older. A sample size of 385 participants was calculated with a single proportion formula at a 95% level of significance and 5% allowable error, by the findings of the previous studies.

Inclusion criteria were Saudi, females, and males of 18 years or older, who use social media applications (Twitter, WhatsApp, Instagram, or Snapchat).

Exclusion criteria were illiterate, non-Saudi, non-user of social media applications (Twitter, WhatsApp, Instagram, or Snapchat), and those with ages less than 18 years.

Questionnaire: A structured questionnaire of 22 questions was designed following an extensive literature review based on previous studies to fulfill the studying objectives. A Pilot study was applied to test the reliability and validity of the questionnaire on a sample of 32 participants (which represent 10% of the sample size) who were excluded from the final study. The questionnaire consisted of four parts; the first part deals with socio-demographic characteristics of participants, which include nationality, age, gender, place of residence, occupation, and educational level. The second part was concerned about the health status and chronic illnesses of participants. The third part was about the information on social media usage. The fourth part investigated the use of social media applications for medical consultation and health information.

Data collection: The garnering of data was done over a two-day period during mid-November 2016, where an online questionnaire in Arabic-language was distributed via Twitter and WhatsApp applications. A random convenient sampling technique was used to select participants. Data was stored in a protected electronic format.

Statistical analysis: The collected data were entered into Microsoft Excel version 2011 and analyzed by using the Statistical Package for Social Sciences (SPSS), version 23. The Chi-square test with 95% confidence intervals (CI) was used to examine significant associations between the socio-demographic characteristic of participants, their health status, and their uses of social media with the use of social media applications for medical consultation and health information. P-value < .05 was considered statistically significant.

3. Results

Characteristics of the 385 questionnaire participants were included in our study.

During the pilot stage, participants were able to answer the survey without any issues. The average time spent on completing a single survey form was 4 minutes.

The mean (SD) age was 37.5 (12.8%) years, 252 (85.4%) of the participants were female, 231 (78.3%) had higher education levels, and 207 (70.2%) live in the central region of Saudi Arabia. "Poor" general health was reported only by 2 (7%) of respondents, while almost half of respondents

said to have at least one chronic condition (132; 44.7%) (Table 1).

Table 1: The relation between the demographic characteristics of the participant and the usage of social media Applications for medical consultation and health information (n=385)

Variable	Yes n (%)	No n (%)
NATIONALITY		
Saudi	290(98.3)	90(100)
Non Saudi	5(1.7)	0(0)
AGE		
18-28 y	122(41.4)	18(20.0)
29-39 y	42(14.2)	18(2.0)
40-49 y	70(23.7)	26(28.9)
50-59 y	57(19.3)	25(27.8)
60 y and above	4(1.4)	3(3.3)
GENDER		
Male	43(14.6)	22(24.4)
Female	252(85.4)	68(75.6)
RESIDENCY PLACE		
North Region	13(4.4)	1(1.1)
Central Region	207(70.2)	61(67.8)
Eastern Region	42(14.2)	17(18.9)
Western Region	31(10.5)	9(10.0)
Southern Region	2(7)	2(2.2)
OCCUPATION		
Employed	110(37.3)	43(47.8)
Unemployed	83(28.1)	27(30.0)
Private Business	11(3.7)	3(3.3)
Student	91(30.8)	17(18.9)
EDUCATIONAL LEVEL		
Primary Level	6(2.0)	1(1.1)
Elementary Level	7(2.4)	1(1.1)
Secondary Level	51(17.3)	27(30.0)
University or Higher	231(78.3)	61(67.8)
HEALTH STATUS		
Good	235(79.7)	70(77.8)
Fair	58(19.7)	20(22.2)
Poor	2(7)	0(0)
Do not have any of these chronic conditions		
Yes	163(55.3)	50(55.6)

According to Table 2, the majority used social media apps for more than 2 hours a day for general purposes (180; 46.8%). The app most frequently

utilized to that effect was WhatsApp (333; 86.5%), while Twitter was used the least (172; 44.7%).

Table 2: The percentage of time spent and the most usable application of social media (n=385)

Daily time spent on Social Media network n (%)	
Less than two hours	105(27.3)
From two to five hours	180(46.8)
More than five hours	100(26.0)
The most usable Social media application for general purposes	
Instagram	
Yes	187(48.6)
No	198(51.4)
Twitter	
Yes	172(44.7)
No	213(55.3)
Snapchat	
Yes	245(63.6)
No	140(36.4)
WhatsApp	
Yes	333(86.5)
No	52(13.5)

Comparing to online health-related information seeking Twitter came first (109; 37.8%), while Snapchat came last (31; 10.8%) (Table 3).

Table 3: The most social media applications used for seeking medical consultation and health information (n=366)

Application	Yes n (%)	No n (%)	p-value
Twitter	109 (37.8)	22 (28.2)	0.006
Snapchat	31(10.8)	8(10.3)	0.006
Instagram	73(25.3)	12(15.4)	0.006
WhatsApp	75(26.0)	36(46.2)	0.006

The online health-related information seekers searched most for nutrition and diet details (241; 62.6%) followed by fitness and exercise (149; 38.7%) (Fig 1).

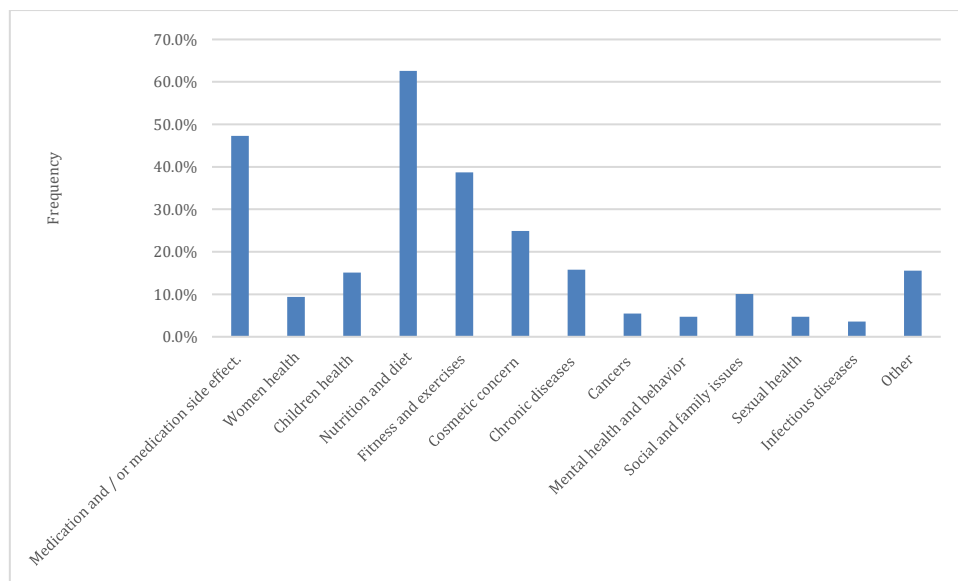


Fig. 1: The frequent health information topics searched by participants

Most of the respondents reported that their primary source of health information is health professionals. People used apps mostly to learn more about their conditions (253; 65.7%), and sometimes

because it is hard to find time to visit a doctor (117; 30.4%).

Besides, 306 (79.5%) reported that they got beneficial information from using social media apps

regarding health, whereas only 24 (6.2%) thought that information on social media is not reliable in Table 4.

Table 4: The reliability of online health information and its effect on the participants

The reliability of online health information	
Yes	59(15.3)
Sometimes	302(78.4)
No	24(6.2)
The beneficial effect of online health information on the participants	
Yes	306(79.5)
No	72(18.7)

Furthermore, 150 (39.0%) respondents of medical consultation and health information seekers thought it affected their lifestyle, such as sports, diet, etc., whereas only 64 (16.6%) felt it enhanced their ability to manage their health care without visiting a doctor or other health care providers.

4. Discussion

This study evaluated the extent of social media use when searching for health-related information and medical consultation among the Saudi population. Approximately 76.6% of the sampled participants were using social media applications for health information and medical consultation.

The use of social media for health information and medical consultation was associated with age, gender, and education level; 18-28 years-old participants, females, and participants with higher education levels were the most frequent users of social media for health information and medical consultation.

The present results differed from those reported in studies performed in Italy and in the United States, especially regarding the age range. The first study showed that Italians with a tertiary education level, females, and age group of 30-41-year-old searched on the internet for health information more than others (Thackeray et al., 2013). In the United States, 35-49-year-old participants, females, and those with higher education levels were more than others.

The present findings indicated that higher educational attainment is of great significance concerning the use of the internet for accessing health-related information as it gives people a greater awareness of health, smartphones, and social media applications. Besides, women portrayed a higher interest in the search for health-related information than men. The trend was expected since women are more involved in family care.

Furthermore, there was an association between health status, health information, and medical consultation search, 44.7 % of participants admitting having at least one chronic illness. Individuals with chronic diseases are more likely to look for medical information regarding their condition, and more often, they search consultations online, and that appeared to be a vital tool in assisting them in

managing their illnesses. Such results were consistent with previous studies (Siliquini et al., 2011). The online health-related information seekers searched most for nutrition and diet (62.6%) followed by medication and drug side effects (47%), fitness and exercises (38.7%). The present results were in accordance with a previous study performed in Arab countries showing that body fitness information and diet were the most topics sought out by the participants (Grajales et al., 2014). In another study, 68% of participants were seeking for nutrition or diet information and 58% to investigate drug side effects and complications of medical therapy (Jamal et al., 2015).

Numerous studies have indicated people who seek health information online are interested in materials that are easy to understand and to practice, such as nutrition and exercise, and not in complicated subjects dealing with specific medical conditions (Grajales et al., 2014).

Study participants reported a variety of motives and reasons for their usage of social media for health information and medical consultation. Most participants who did not get enough information from their doctors wanted to learn more about their state of health. Moreover, one of the main reasons was the difficulty encountered to visit a doctor because the distance was too far, or the appointment was not available. Another reason was the desire to look for a second opinion. These findings were consistent with previous studies (Jamal et al., 2015; Umejford et al., 2003).

Furthermore, doctor-patient communication influences the satisfaction of care seekers, adherence, and their chances of looking for different doctors' opinions. However, providing in-depth medical details might become complicated in light of needing more consultation time, more frequent visits, and more communication skills (Dalen et al., 2001).

Overall, 15.3% of participants considered the information on social media reliable, 78.4% considered it sometimes reliable, and only 6.2 % of participants found it not reliable. In spite of the vast prevalence of reliable health-related information on social media, several reviews have shown that patients may access potentially false or inaccurate information when using the internet (Jamal et al., 2015).

5. Conclusion

In conclusion, the present results indicated that Saudi society is using social media for medical consultation. The desire for patients to know more about their medical situations, without doctors' help, is a drive to this trend. Besides, social media is attractive, accessible at any time, cost-efficient, easy to use, and it also ensures privacy. The importance of investing in medical applications is emphasized within the results. Such platforms, when reviewed by experts according to based evidence medicine, may

benefit the patients and allow for the consultation process to be more useful and accurate.

The authors suggested the development of a well-designed and managed applications with free access under the supervision of the ministry that can be accessible to the entire Saudi society. Further study is required to achieve full understanding and to organize the use of this approach to ensure and get the best outcomes.

Compliance with ethical standards

Ethical approval

The study was approved by the Institutional Review Board (IRB) of the Research Centre, College of Medicine, King Saud University. Respondents were informed about the study objectives, and data were kept confidential and used only for research purposes.

Conflict of interest

The authors declare that they have no conflict of interest.

References

- Bahkali S, Almaiman R, El-Awad M, Almohanna H, Al-Surimi K, and Househ MS (2016). Exploring the impact of information seeking behaviors of online health consumers in the Arab world. *Studies in Health Technology and Informatics*, 226: 279-282.
- Baker L, Wagner TH, Singer S, and Bundorf MK (2003). Use of the Internet and e-mail for health care information: Results from a national survey. *JAMA*, 289(18): 2400-2406.
<https://doi.org/10.1001/jama.289.18.2400> **PMid:12746364**
- Dalen VI, Groothoff J, Stewart R, Spreeuwenberg P, Groenewegen P, and van Horn J (2001). Motives for seeking a second opinion in orthopaedic surgery. *Journal of Health Services Research and Policy*, 6(4): 195-201.

<https://doi.org/10.1258/1355819011927486>
PMid:11685782

- Diaz JA, Griffith RA, Ng JJ, Reinert SE, Friedmann PD, and Moulton AW (2002). Patients' use of the Internet for medical information. *Journal of General Internal Medicine*, 17(3): 180-185.
<https://doi.org/10.1046/j.1525-1497.2002.10603.x>
PMid:11929503 PMCID:PMC1495021
- Grajales FJ, Sheps S, Ho K, Novak-Lauscher H, and Eysenbach G (2014). Social media: A review and tutorial of applications in medicine and health care. *Journal of Medical Internet Research*, 16(2): e13.
<https://doi.org/10.2196/jmir.2912>
PMid:24518354 PMCID:PMC3936280
- Jamal A, Khan SA, AlHumud A, Al-Duhyim A, Alrashed M, Shabr FB, and Qureshi R (2015). Association of online health information-seeking behavior and self-care activities among type 2 diabetic patients in Saudi Arabia. *Journal of Medical Internet Research*, 17(8): e196.
<https://doi.org/10.2196/jmir.4312>
PMid:26268425 PMCID:PMC4642387
- Rupert DJ, Moultrie RR, Read JG, Amoozegar JB, Bornkessel AS, O'Donoghue AC, and Sullivan HW (2014). Perceived healthcare provider reactions to patient and caregiver use of online health communities. *Patient Education and Counseling*, 96(3): 320-326.
<https://doi.org/10.1016/j.pec.2014.05.015> **PMid:24923652**
- Siliquini R, Ceruti M, Lovato E, Bert F, Bruno S, De Vito E, and La Torre G (2011). Surfing the internet for health information: An Italian survey on use and population choices. *BMC Medical Informatics and Decision Making*, 11: 21.
<https://doi.org/10.1186/1472-6947-11-21>
PMid:21470435 PMCID:PMC3079597
- Thackeray R, Crookston BT, and West JH (2013). Correlates of health-related social media use among adults. *Journal of Medical Internet Research*, 15(1): e21.
<https://doi.org/10.2196/jmir.2297>
PMid:23367505 PMCID:PMC3636287
- Umefjord G, Petersson G, and Hamberg K (2003). Reasons for consulting a doctor on the Internet: Web survey of users of an ask the doctor service. *Journal of Medical Internet Research*, 5(4): e26.
<https://doi.org/10.2196/jmir.5.4.e26>
PMid:14713654 PMCID:PMC1550573