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Original article

The use of social media among Saudi residents for medicines related information

Mahmoud S. Alhaddad

Faculty of Pharmacy, Taif Univeristy, P.O. Box 888, Taif 21974, Saudi Arabia

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ABSTRACT

This study aimed to measure the use of social media applications for health information among residents in Saudi Arabia. A cross sectional study was adopted in this study between 20th of September to 1st of December 2017. A pre-validated questionnaire was either distributed through face to face to respondents in public areas or through online survey which was posted to main social media groups in Saudi Arabia. All data was analyzed through using SPSS version 22.0. All p-values of less than 0.05 were considered significant. A total of 751 valid responses were obtained out of 1200 invitations. WhatsApp was the main application frequently used among our respondents 83.8%. In addition, about 18% of respondents use social media to search on medicines related information on weekly basis. On the other hand, 12.6% of respondents receive medical related information on social media daily. Friends are the main source of medical related information on social media which is represented by 28.5% of responses. Whereas health specialists represent only 20.1% of health information on social media. One-third of our respondents either search or receive medical related information on social media on daily and weekly basis. More than 90% of respondents prefer to receive medical related information from trusted official sources. Health authorities have to frequently review the health information contents available in social media as well as educate patients on the importance of validating the medical information available on social media from their healthcare providers.

1. Introduction

Patients are increasingly using social media applications such as Facebook, Twitter, YouTube, and Instagram to access healthcare information. It is believed that using social media allow them to have two way communication with other patients and healthcare professionals (Solutions, 2013). Social Media can easily connect large groups of people who share common diseases or health conditions throughout the globe (Solutions, 2013).

The use of social media among American adults has risen from 5% in 2005 to 70% in 2016 where 75% of Americans use Facebook on daily purposes (Housman, 2017). In addition, the number of monthly active users of Facebook increased from 100 million in 2008 to 2.07 billion in 2017 (Statista, 2017). Furthermore, Instagram has recently reached a total of 700 million active users (forune.com).

Adolescents are the major public categories that use social media which might expose them to alcohol and drug promoters through advertising of alcohol and drugs, exposure to peerportrayals and misinformation and marketing of illegal drugs on social media (Salimian et al., 2014, Moreno and Whitehill, 2014).

Physicians should utilize social media for disseminating health related information (Barreto and Whitehair, 2017). Thus, many studies found that social media is heavily utilized in medical education among healthcare professionals and medical students to share their knowledge and improve their medical information and skills (Popoiu et al., 2012, Avci et al., 2015, Madanick, 2015).

Nourishing health information through social media such as Facebook is very promising in facilitating disseminating health information and communicating with healthcare professionals (Adharuddin and Ramly, 2015). For example, good evidence of utilizing social media among healthcare professionals was noticed in exchanging information and communicating with patients (Hawkins et al., 2016, Ranginwala and Towbin, 2017). A large number of physicians were found to have two types of social media accounts. One for personal use and the other for professional use

E-mail address: dr_mahmoud77@hotmail.com

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(Mary Modahl et al., 2011). This is due to the fact that healthcare professionals worry to accept friendship requests with their patients. This is because once they accept their patients' friendship requests, their patients can easily access to their personal profile, their contacts, their posts and personal life which exceeds the healthcare provider-patient relationship boundaries (Jain, 2009, Bosslet et al., 2011).

On the other hand, hospitals frequently communicate and educate their patients using social media applications such as Facebook, Twitter, Instagram and LinkedIn (Widmer et al., 2017, Solutions, 2013). For example, a study evaluated patients' utilization of Facebook page of University of Texas M. D. Anderson Cancer Center over 15 days. A good interaction of patients and their relatives was noticed with the hospital page contents over the study period. This is believed to improve patients' knowledge and experience (Carissa Hilliard, 2012).

Patients frequently use social media for searching on health related information. A survey from Pew Internet Project and the California Healthcare Foundation found that 51% of adults in the U.S. who live with chronic diseases have searched online for health related information such as treatments, procedures, medications and OTCs. Whereas 66% of healthy adults search online for health related information (Susannah Fox and Kristen Purcell, 2010). Relying on untrusted sources of information on social media might increase the risk in disseminating and sharing inaccurate or wrong information which would significantly affect on patients' health and quality of life (Solutions, 2013).

Therefore, this study aimed to measure the use of social media applications for health related information among residents in Saudi Arabia, frequency and sources of receiving health related information on social media, and patients' preference of the presence of health related education on social media from official sources.

2. Materials & methods

2.1. Study design

A cross sectional research design using non-probability convenience sampling technique was used in this study between 20th of September to 1st of December 2017.

2.2. Data collection tool

A pre-validated questionnaire was developed and used in this study. An extensive literature search was performed using major research databases such as PubMed, Sciencedirect, Proquest, EbscoHost, and GoogleScholar. Questionnaire was initially developed, reviewed and validated by expert in pharmacy practice research. Then a pilot study was performed to come up with the final draft of the questionnaire.

2.3. Questionnaire

Questionnaire was divided into three parts. First part included respondents' personal information such as age, gender education and living area. Second part included respondents' use of social media in general. Whereas last part included respondents' use of social media for medicines related information and most frequent people who share with them medical information on social media.

2.4. Inclusion and exclusion criteria

All residents who live in the Kingdom of Saudi Arabia, able to read and write in Arabic Language and use at least one social media program were included in this study. While those who failed to meet the previous criteria were excluded from the study.

2.5. Data collection procedure

Data collectors distributed the questionnaire among respondents through either face to face in public areas or through online survey where an online link was built and distributed to major social media groups in Saudi Arabia using WhatsApp, Twitter and Instagram. Respondents were given the freedom to participate in the study. They were informed that all the collected information will be kept confidential and none of their personal data that could identify them will be published.

2.6. Data analysis

Descriptive and inferential analysis were done for this research. Mean ± standard deviation, frequency and percentage of respondents' demographic data were presented in tables. While Chi Square and Fisher Exact tests were used to compare between respondents' preferences and practice. Data was entered, coded and analyzed using SPSS version 22.0. All p-values of less than 0.05 were considered significant.

3. Results

A total of 751 responses, out of 1200 invitations, were successfully received with a response rate of 62.6%. Mean age of respondents was 29 ± 12.2 years. As shown in Table 1, majority of respondents were of university education 57.8%, males, 69.5% and live in city 94.5%.

Table 2 shows that WhatsApp, Snapchat and YouTube were the main social media applications used among our respondents 83.8%, 65.3%, and 58.7%, respectively. Higher proportions of respondents with primary educational level never used Facebook, Twitter and Instagram. Whereas higher proportions of university graduates always use Snapchat and WhatsApp. On the other hand, higher proportions of female respondents never use Facebook, sometimes use Twitter, most of the time use Instagram and always use Snapchat. While higher proportions of male respondents always use WhatsApp.

According to Table 3, about 6% and 18% of respondents use social media to search on medicines related information on the daily and weekly basis, respectively. On the other hand, 12.6% and 22.6% of respondents receive medical related information on social media daily and weekly, respectively. In addition, 41.2% of respondents prefer to receive medical related information daily from trusted official sources. Higher proportions of respondents with primary education never received medical related information on social media and prefer to receive medical related

Table 1
General characteristics of respondents.

Demographic characteristics		Frequencies (n)	Percentages (%)
Education Level	None educated	6	0.8
	Primary	29	3.9
	Intermediate	93	12.4
	Secondary	186	24.9
	University	434	57.8
Gender	Male	522	69.5
	Female	225	30.0
Living area	Village	41	5.5
	City	706	94.5
Do you have a smart phone?	Yes	718	95.6
	No	30	4.0

Table 2
Frequency of using Social Media.

Section	Responses (n) (%)					Education	Gender	Living area
	Never	Rarely	Sometimes	Most of the time	Always			
Frequency of using social media								
Facebook	452 (60.7)	167 (22.4)	83 (11.1)	14 (1.9)	29 (3.9)	0.001*	<0.001*	0.772*
Twitter	150 (20.1)	107 (14.4)	212 (28.5)	128 (17.2)	148 (19.9)	<0.001*	0.037*	0.096
Instagram	149 (20.0)	90 (12.1)	183 (24.5)	175 (23.5)	149 (20.0)	0.054*	<0.001*	0.180
Snapchat	109 (14.6)	40 (5.4)	110 (14.7)	145 (19.4)	342 (45.8)	0.01*	0.012*	0.205
WhatsApp	37 (5.0)	20 (2.7)	64 (8.6)	138 (18.5)	488 (65.3)	<0.001*	<0.872*	<0.886*
YouTube	74 (9.9)	73 (9.8)	161 (21.6)	162 (21.7)	276 (37.0)	<0.001*	0.004*	0.288

* Fisher exact test.

Table 3
Frequency of using social media for medical related information.

Section	Responses (n) (%)					Education	Gender	Living area
	Never	Daily	Weekly	Monthly	Yearly			
How often do you search for medicines related information on social media?	218 (29.3)	45 (6.0)	134 (18.0)	216 (29.0)	131 (17.6)	0.002*	0.003*	0.261
How often do you receive information about medicines on social media?	165 (22.1)	94 (12.6)	169 (22.6)	235 (31.4)	85 (11.4)	<0.001*	0.021*	0.919
How often do you prefer to receive medicines related information on social media from trusted official sources?	119 (17.2)	284 (41.2)	238 (34.5)	47 (6.8)	1 (0.10)	0.001*	0.103*	0.651*

* Fisher exact test

information from official sources on weekly basis. On the other hand, higher proportions of female respondents search and receive medical related information on social media on monthly basis and prefer to receive medical related education on social media from official sources on weekly basis.

Fig. 1, shows that friends are the main source of medical related information on social media which is represented by 28.5% of responses. Whereas health specialists represent only 20.1% of health information on social media.

As shown in Table 4, about 90% of respondents are ready to receive medical related information from official sources on social media and agree on the presence of specialized education on chronic diseases in social media from official sources where they believe it will improve the rationale use of medicines. Higher proportions were noticed among university graduates who agreed on the presence of medical education on social media from official sources and thought that these educations would result in improving the rationale use of medicines.

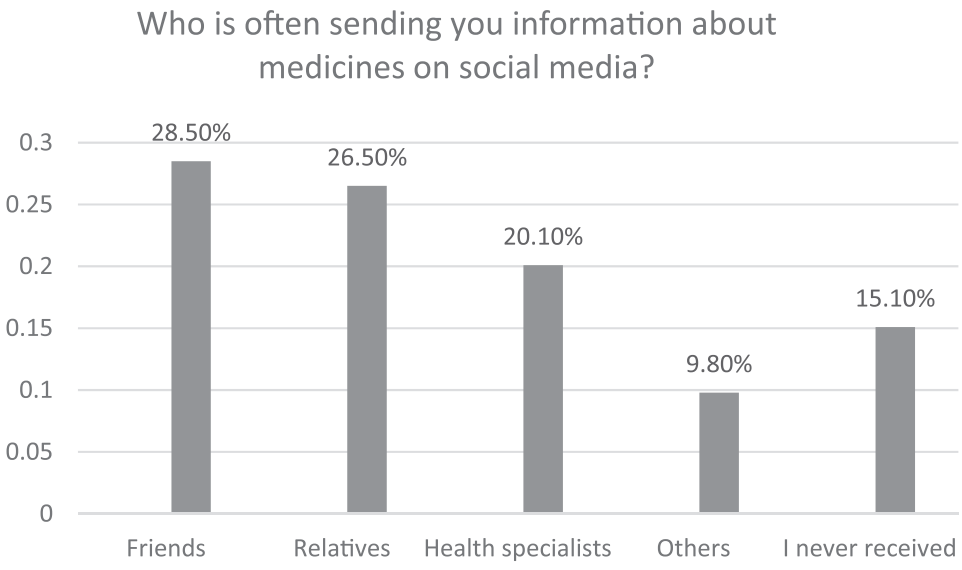

Fig. 1. Persons who often send medical related information on social media.

Table 4
Perceptions towards education through social media from trusted official sources.

Section	Yes n (%)	No n (%)	Education	Gender	Living area
Are you ready to receive medicines related information through social media from trusted official sources?	650 (87.1)	96 (12.9)	0.005	0.018*	0.710
Do you agree on the presence of specialized education on chronic diseases through social media from official sources?	678 (90.6)	70 (9.4)	<0.001	0.250*	0.045*
Do you think that establishing medical education through social media from official sources would result in improving the rational use of medicines?	694 (92.8)	54 (7.2)	<0.001	0.129*	0.761*

* Fisher exact test.

Fig. 2 shows that WhatsApp and Twitter were the main social media applications that respondents prefer to receive medical related education.

4. Discussion

Self-medication is considered prevalent among general public in Saudi Arabia (Alghadeer et al., 2018, M. and K., 2017, Al-Haddad et al., 2016). Many recent studies have discussed the prevalence and determinants of self-medication in Saudi Arabia where poor knowledge on medications was one of the main reasons of self-medication (Aljadhey et al., 2015). Social media might be considered as a major tool to mislead the public. In our study, the use of social media is considered high in which more than 70% of respondents use social media either sometimes, most of the times or always. This figure is comparable with the percentage of social media users in USA which was 70% in 2016 (Housman, 2017). WhatsApp is the main social media application used in our sample which represented 65.3% of all responses which is compared to 75% of Americans who use Facebook daily (Housman, 2017). Therefore, we can notice that in our study the main source of medical related information on social media was friends. This is could be due to the nature of WhatsApp application where information shared on the network is mainly from friends and contacts. While in other social media networks such as Facebook you can see posts of your friends, their friends, and all Facebook pages that you follow.

Only 29.3% of our respondents never searched for medical related information on social media. Whereas about 70% of our respondents searched for medical related information on social media either on daily, weekly, monthly or on yearly basis. These findings are equivalent to a previous study in Saudi Arabia which found that 68% of their respondents seek medical related information through social media (Bahkali et al., 2016). Previous study by Bahkali et al., faced few limitations where it relied only on Twitter participants for data collection. In this study, we tried to generalize our findings and overcome this limitation through relying on face to face interviews with general public, WhatsApp (the major social media application used by our respondents), Twitter and Instagram for data collection. Social media can easily connect large groups of people who share common diseases (Solutions, 2013). Many studies evaluated the use of common social media applications for medical related information. For example, many groups were found related to congenital anomalies (Jacobs et al., 2016), liver transplantation (Dhar et al., 2017), diabetes (Abedin et al., 2017, AlQarni et al., 2016), Epilepsy (Meng et al., 2017) and smoking cessation (Naslund et al., 2017). Where majority of group members were looking for others' personal experiences, support, education, and disease related information.

A national telephone survey in the U.S. found that 74% of their respondents use the internet. Out of all respondents, 59% searched online for health related information, 25% of respondents read others' experience on certain health conditions, 18% of respondents consulted online reviews on certain drugs or treatments and 11% of respondents followed their friends or social networkers personal medical experiences (Susannah Fox, 2011). Another cross sectional study was implemented among adult population in Italy to measure the use of social media for searching information on

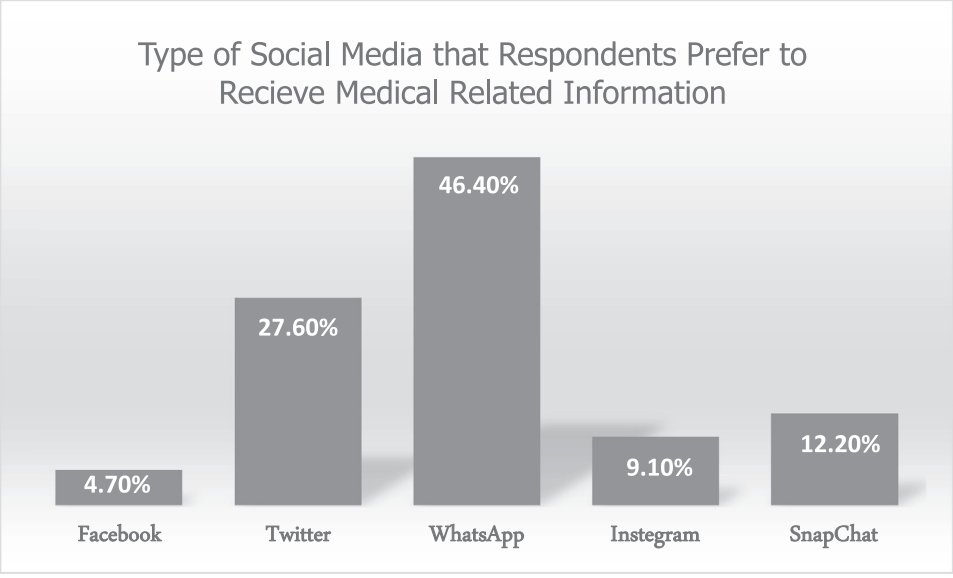

Fig. 2. Type of social media that respondents prefer to receive medical related information.

antibiotics. Out of 913 respondents, 73.4% used the internet to search for information regarding antibiotics use. Among social media users, 46.5% used these networks for gathering information about antibiotics. Main reasons of search were to get second opinion about their health conditions 58.9%, and to gather information if the disease requires antibiotics or not 31.1% (Zucco et al., 2017).

In our study, females and those with university education were more frequently using social media for health related information than others. This is compatible with other findings were females and higher educated patients were more social media users to get health related information (Zucco et al., 2017, Cordos et al., 2017, Bahkali et al., 2016).

Patients are not experts in medicines. They usually tend to trust and share medical related information on social media without any prior check or validation of the information that they share on social media. This would result in the presence of many inaccurate or wrong medical information on the social media. A recent review article reviewed publications on PubMed related to medical information available on social media. A high and low quality videos were found on YouTube which could mislead users. Facebook was found to contain more marketing information than providing health related information (Cordos et al., 2017). This confirm the conclusion that it is difficult to find high quality of medical related information on social media. Another study among young adults attending a primary care adolescent and young adult clinic in Boston found that 98% of respondents used social media within the previous month. Fifty one percent of them shared health related information on social media whereas those with poor health conditions were more likely to share health information on social media (Hausmann et al., 2017). In addition, three-quarters of participants believed that social media is a usefulness source of health related information (Hausmann et al., 2017). Due to this fact, majority of our respondents, about 90%, were willing to receive health related information and education from trusted official sources and believed that this kind of information and education from official sources would result in improving rationale use of medicines and patients' quality of life.

Study Limitations: Two main limitations were faced in this study. First limitation was the low responses that came from village residents where it would be better to have more responses from village residents to have a clear comparison with responses from city residents. The second limitation was the mean age of respondents which was 29 ± 12.2 years. This might be biased to middle age group. But this could be due to the fact that main users of social media are of young and middle age groups.

5. Conclusion

One-third of our respondents either search or receive medical related information on social media on daily and weekly basis. More than 90% of respondents prefer to receive medical related information from trusted official sources. Health authorities have to frequently review the health information contents available in social media. In addition, health authorities have to spread the awareness among general public regarding the opportunities and threats of using social media on health related information. Moreover, health authorities have to stress on the importance of validating any health related information with healthcare professionals prior to using any advice or medication published or shared on social media.

6. Funding

No funds were received.

7. Conflict of interest

There is no conflict of interest. Parts of results were presented in the 4th national higher educational conference for male and female students in the Kingdome of Saudi Arabia.

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