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THE IMPACT OF MEDICAL INFORMATION IN SOCIAL MEDIA ON MEDICAL AWARENESS OF SAUDI COMMUNITY

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ABSTRACT

Background: Over the last decade, social media has integrated into our daily lives and has complemented almost all parts of our life activities. Some of the popular social media such as Facebook, Twitter, Instagram, YouTube, Snap chat etc. allows people to share and interact online contents and also helps to connect like-minded people. In the Kingdom of Saudi Arabia, social media is becoming more popular among the citizens and according to the Communications and Information Technology Commission (CITC) usage of social media increased to 91.7%. **Methodology:** A descriptive cross-sectional study using a pretested and validated questionnaire were employed among people residing in Saudi Arabia. The questionnaire was administered online and a minimum sample of 1740 was calculated for our study**. Results:** We found that 42% of participants spend 3-5 hours per day using social media and 24% use it for more than 6 hours per day. Only 9% of participants agreed that they use it for one hour or less. When participants were asked about their favourite social media, 36% said that it is Snap Chat, 31% mentioned it like Twitter, 29% selected it as Instagram and only 4% selected for Facebook. **Conclusion:** the majority of the participants are using social media for understanding and discussing health-disease related topics. Users should be able to identify the sources and reliability of the health information before sharing online in social media. English.

KEYWORDS: Medical information, social media, Saudi community.

INTRODUCTION

Social media is an online service that enables people not only to communicate both verbally and visually but also to share published and unpublished work, pictures, thoughts and everything a mind can think of. 1,2. Some of the popular social media such as Facebook, Twitter, Instagram, YouTube, Snap chat etc. allows people to share and interact online contents and also helps to connect like-minded people.[3]

In the Kingdom of Saudi Arabia, social media is becoming more popular among the citizens and according to the Communications and Information Technology Commission (CITC) usage of social media increased to 91.7%. A study done by CITC reported that 98.7% of the young people who are in the age group of 20-24 years use social media compared to 98.1% of 25-30 years.[4] Societies in recent years rely on the Internet as a tool for getting trusted information regarding their health and wellness. One survey conducted in the USA that 65% of Americans saying they trust the information taken online.[5]

Medical communities, groups and hospitals have been using social media as an essential tool to communicate, teach, provide trusted medical information and widely spread the much-needed medical content.[6-8] Agencies like the National Institutes of Health & Centers for Disease Control and Prevention have been using Internet & social media as a tool for the distribution of evidence-based medical information in an easier way to get to the targeted population whether they are health care practitioners or general people.[9-11] Studies show that doctors have been using social media services like

Twitter, Instagram and Snap chat as platforms to spread health and medical awareness on a social scale.[12,13]

The use of social media for health promotion and behavioural changes in the targeted population might be promising and help the audience in engaging in physical activities for health and wellness.[15] When using social media for health communications, doctors and health care professionals need to simplify the health information and make it more clear and transparent for the public to understand.[16] Social media in various ways is becoming a good tool to share health-related information about specific diseases and conditions and also to target some of the health crisis, outbreaks which could further help the public to consult the doctors immediately.[17]

In the Kingdom of Saudi Arabia even though there are some accounts on social media that are trying to promote health and increase public awareness about health facts or issues there is no precise data on the number of accounts being actively involved in this communication. We noticed some 120 or more accounts collectively on Twitter, Instagram, Facebook, Snap chat and YouTube used by Ministry of health, health professionals, private hospitals and clinics etc. that are being used to for these purposes. There is no clear data on how the public utilizes and perceive this information and also how these are beneficial to them. Hence this study was aimed to assess the perception of common people in Saudi Arabia use social media as a tool for educating and promoting health. The objectives of our study include a) to know that social media is beneficial to the society, b) To know that society is looking for medical information on the internet, and c) To know the range of reliability of the information given by doctors in social media.

METHODOLOGY

A descriptive cross-sectional study using a pretested and validated questionnaire were employed among people residing in Saudi Arabia. The questionnaire was administered online and a minimum sample of 1740 was calculated for our study. We used an online-based Arabic language questionnaire which was created using Google Forms. The Arabic version was also translated into English and this was also subjected to the Validation process based on a pilot test. The questionnaire was reviewed by four doctors (clinical) and two academic professors to ensure its clarity and validity. Permission and approval to do the study were obtained from the Ethics and Research Committee of Taif University.

A minimum sample size of 3275 was calculated for our study. We received a total response from 8966 participants and this was included for our analysis. The questionnaire consisted of two sections. The first section collected information on the Sociodemographic and educational details. The second section included closed-ended questions related to the usage of social media and perceptions of its use related to health and diseases. Confidentiality of the data provided was ensured to the participants in the questionnaire.

The inclusion criteria included adult participants aged above 18 years who are residing in the Kingdom of Saudi Arabia for the last three years and who are using any type of social media for the last three years. Both genders were included and nationality was not a criterion. The participants who didn't use any type of social media and those aged less than 18 years were excluded from our study. Also, those who were residents in Saudi Arabia for less than three years were not included.

Data Management and Statistical Analysis

Data obtained from the selected samples from tabulated accordingly using Microsoft Excel 2011 and were translated according to English version for our analysis. A descriptive statistical analysis of prevalence and percentage was conducted using SPSS software version 23.0. A significance value (α) of less than 0.05 was considered statistically significant at 95% confidence interval.

RESULTS

We did a cross-sectional study that covered almost all provinces of the Kingdom of Saudi Arabia. The details of socio-demographics details of the participants are given in Table 1. Our study had 18.28% of participants who worked in the medical field and 81.27% belonged to the non-medical field. The survey showed that 81.99% of participants had Instagram and 74.56% had a Twitter account (Table 2). We found that 42% of participants spend 3-5 hours per day using social media and 24% use it for more than 6 hours per day. Only 9% of participants agreed that they use it for one hour or less (Figure 1). When participants were asked about their favourite social media, 36% said that it is Snap Chat, 31% mentioned it like Twitter, 29% selected it as Instagram and only 4% selected for Facebook (Figure 2).

In our study, 87.95% of participants agreed that they searched for health-related topics on the Internet and 65.25% said that they did the same on social media. 63.83% of participants reported that they follow doctors on social media, whereas 67.01% agreed that they discussed topics related to health and diseases in social media. When participants were asked whether it is an effective method to share and discuss health-related information through social media, 78.13% agreed to this. 47.13% agreed that they have contacted a doctor through social media to consult for some health problem (Table 2).

The responses to questions related to knowledge regarding health and diseases are depicted in Table 3. We found that only 34.11% of the participants selected the correct answer (‘*Fish’*) for ‘the most beneficial cholesterol for the human body’. For the signs of elevated blood pressure, only 10.8% selected the correct

answer (‘*Thirst or dryness of the mouth’).*28.51% mentioned it as ‘*Blurred vision’* and 27.72% opted for ‘*Fatigue*’. Only 25% of participants selected the correct answer for ‘ not a sign of elevated blood glucose which was ‘*sweating’*. When participants were asked which is the best time to get sun exposure in the winter for increasing vitamin D levels, only 21.07% selected the correct option ‘*from 10 am till 3 pm’*. 52.3% believed that peppermint relieves irritable bowel syndrome symptoms, which is correct (Table 3).

More than half of the participants (52.3%) said that too much urination after drinking liquids in winter cause dehydration, which was the wrong answer. 57.72% of the participants, believed that drinking warm water with lemon and ginger burns fat and lowers weight, which is not correct. 41.03% of participants said that oral contraceptive pills cause obesity and delayed procreation after stopping it, whereas 19.86% didn't believe so (Table 3).

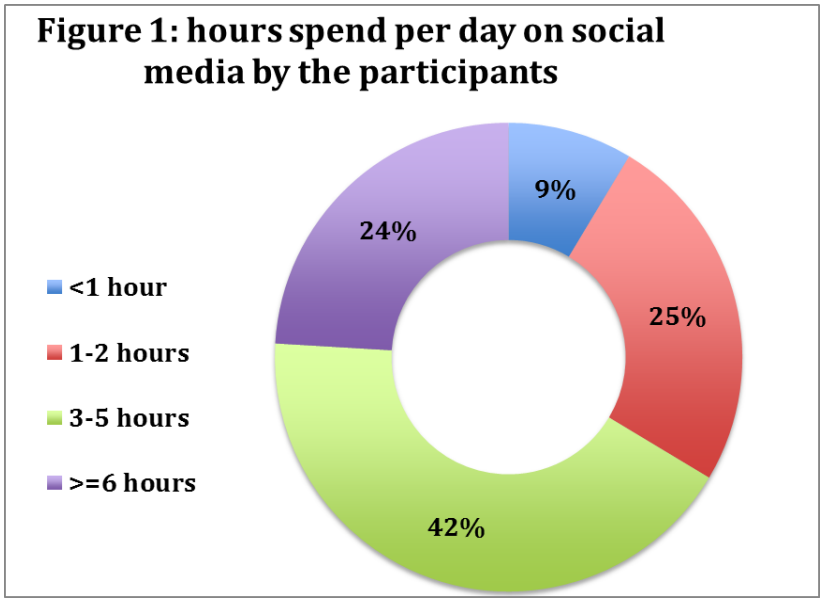
31.05% of the participants believed that infection with hepatitis C would have a problem with marriage life, which is incorrect. Only 8.53% believed that MMR vaccine causes autism and 63.01% were not sure of this. When participants were asked whether flu vaccine cause harm to mother and the fetus, 23% said ‘Yes’ to this. Only 29.78% said ‘No’ which is the correct answer. Nearly half of the participants had a wrong belief that brown sugar is less harmful than white sugar. Also, only 21.74% believed that sugar-free products are harmful to people with diabetes (Table 3).

Table 1: Socio-demographic details of participants.

		Frequency	Percent
Age	Under 20	1080	12.05%
	20-29	3550	39.59%
	30-39	1992	22.22%
	40-49	1475	16.45%
	50-59	677	7.55%
	Over 60	192	2.14%
	Total	8966	100.0%
Gender	Female	5248	58.53%
	Male	3718	41.47%
	Total	8966	100.0%
Education level	High school	2490	27.77%
	Bachelor	5859	65.35%
	Master degree	456	5.09%
	PhD	161	1.8%
	Total	8966	100.0%

Table 2: Responses of participants on questions related to social media use.

	Yes		No		Didn't answer	
	n	%	n	%	n	%
Job in medical field	1639	18.28%	7327	81.72%	-	-
Using an Instagram account	7351	81.99%	1615	18.01%	-	-
Using a Twitter account	6685	74.56%	2281	25.44%	-	-
Have you ever searched for a health related topics on the internet?	7886	87.95%	648	7.23%	432	4.82%
Have you ever searched for a health related topics on social media?	5850	65.25%	2684	29.93%	432	4.82%
Do you Follow any doctors on social media?	5723	63.83%	2803	31.26%	440	4.90%
Do you read carefully the topics discussed in social media?	6008	67.01%	2154	24.02%	804	8.97%
Do you feel this is a effective method and a great a help to the society?	7005	78.13	1160	12.94	801	8.93
Have you ever tried to contact a doctor & consult him for a health problem through social media?	4226	47.13%	3957	44.13%	783	8.73%



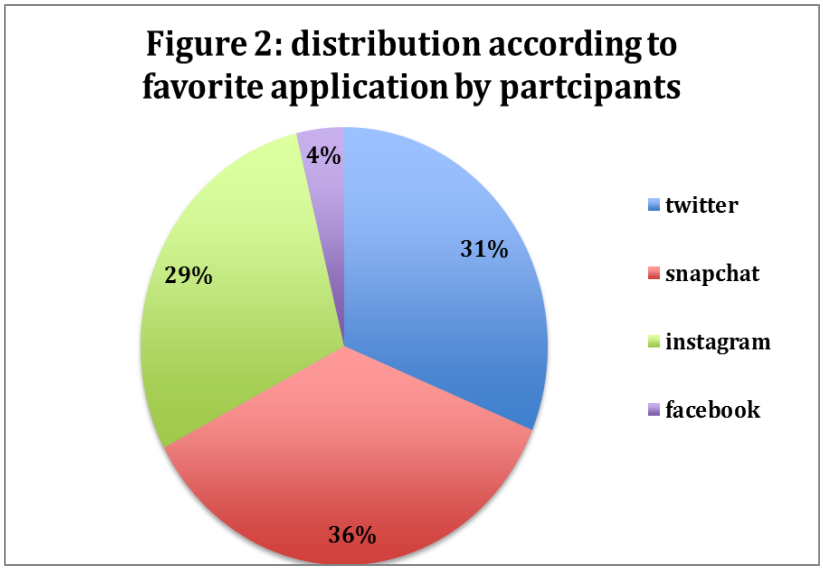


Table 3: Responses of participants for questions related to health and body.

Which of the following is the most beneficial cholesterol for human body?	Fish	34.11%
	Olive oil	25.14%
	Flax seeds	5.43%
	Egg	11.8%
	I don't know	23.52%
Which of the following are signs of elevated blood pressure?	Thirst or dryness of the mouth	10.8%
	Sweating	12.99%
	Blurred vision	28.51%
	Fatigue	27.72%
	I don't know	19.98%
Which of the following is not a sign of elevated glucose level?	Sweating	25.0%
	Dryness of the mouth	13.66%
	Loss of concentration	11.72%
	Blurred vision	12.37%
	Headache	37.25%
Which of the following is the best time to get sun exposure in the winter in order to get vitamin D?	Early morning hours till 10 am	63.9%
	From 10 am till 3 pm	21.07%
	After 3 pm till sunset	9.43%

	I don't know	5.6%
Does peppermint relieve irritable bowel syndrome symptoms	Yes	52.3%
	No	12.94%
	I don't know	34.75%
Does too much urination after drinking liquids in winter cause dehydration?	Yes	52.30%
	No	12.94%
	I don't know	34.76%
Drinking warm water with lemon and ginger burns fat and lowers weight?	Yes	57.72%
	No	22.87%
	I don't know	19.41%
Drinking warm water with lemon and ginger burns fat and lowers weight?	Yes	57.72%
	No	22.87%
	I don't know	19.41%
Does the oral contraceptive pills cause obesity and delayed procreation after stopping it?	Yes	41.03%
	No	19.86%
	I don't know	39.11%
Does hepatitis C affect the ability to get married?	Yes	31.05%
	No	23.24%
	I don't know	45.71%
Does the MMR vaccine cause autism?	Yes	8.53%
	No	28.46%
	I don't know	63.01%
Does the flu vaccine cause harm to the pregnant and fetus?	Yes	23.0%
	No	29.78%
	I don't know	47.21%
Is brown sugar less harmful than white sugar?	Yes	47.51%
	No	31.89%
	I don't know	20.61%
Sugar free products are not harmful to people with diabetes?	Yes	54.38%
	No	21.74%
	I don't know	23.89%

DISCUSSION

To our knowledge, this is the first study conducted in the kingdom to assess the use and impact of social media for medical information among Saudi Arabian population. Before the introduction of social media, citizens received health-related information from the Web that is a non-interactive and unidirectional method. The advent of social media has changed this concept by shifting the 'informed patient care' into 'patient participative care'.[18] The interactive nature of social media has helped the public not only to access health-related information but also to participate, discuss and share health-related contents to others.[19]

The findings of our study showed that the majority of our participants used some forms of social media and have searched or discussed health-related topics through social media. Although our study focused on the Saudi Arabian context, these findings may transferable to other similar countries especially the ones in Middle East Asia due to the pervasive nature of social media and the ability to access it. Our study showed that Snap Chat and Twitter are the favourite social media applications of our participants. It is reported that Facebook is a widely used social media platform for health-related purposes.[20] Another study conducted among Health professionals showed that YouTube, Snapchat and Twitter are the frequently used social media applications for health-related purposes in the Kingdom of Saudi Arabia.[21] In our study, it was found that 42% of participants used social media for 3-5 hours per day. Study done by Alshakhs F and Alanzi T in Saudi Arabia reported similar findings of usage duration of social media by health professionals.[21]

Consulting or discussing a health problem with a doctor or health professional is becoming a trend nowadays as it is found to be an easy and beneficial method for both the patients and the health professional.[22] In our study, we found that 47.13% of participants have used this type of consultation or discussion with doctors for a health problem. Social media use could also help the health professionals for brand building, strengthen health care market position and improve health care service delivery.[23-25]

In our study, we included some of the commonly searched questions related health and the human body to assess the knowledge regarding the same among the participants. We found that most of the participants didn't answer the correct options for many questions. These findings suggest that in spite of increased use of social media for health-related information our participants'

knowledge regarding health and diseases is poor. The use of these media for health-related events could do both benefits and drawbacks.[26] Thus it is important to identify these challenges as an increasing number of patients use social media for health-related purposes so that doctors or health professionals will have to reflect on both beneficial and harmful effects.

Another key factor in using social media for health-related purposes is the quality of information. Some of the features that threaten the quality of information are a global audience, public availability, the possibility of alteration at any time, immediacy, spam attack, easy usability etc.[27] Due to its global availability and easy access that make anyone post or share advice on certain health problems, there is a need to create a reliable online platform to prevent misuse and exacerbation of health problems. One misguided advice on twitter regarding Ebola urged people in Nigeria to drink a large amount of saltwater to combat the disease.[28]

Some of the factors of social media usage by patients which effects on doctor-patient relationship are a) more equal communication between patient and doctor which could lead to a more confident relationship with the doctor[29,30], b) increased switching of doctors is also visible due to conflicting online discussion or due to negative reactions from doctors about treatments which could lead to shorter relationship between them.[31] Smailhodzic E et al have reviewed some of the health-related reasons that affect social media use by patients and the reasons found were enhanced subjective and psychological well-being, improved self-management and control, diminished subjective well-being, loss of privacy, being targeted for promotion, addiction to social media.[32]

The aim of our study was only to assess the use of social media and its impact n knowledge regarding health and disease. Thus our study may have many limitations or shortfalls and one should understand these before generalizing the findings. We didn't check the relationship of different variables such as age, profession, type of health-related information searched and other socio-demographic details with the usage of social media. We also didn't examine how to measure or describe the impacts of health care using social media on self-management. The degree of involvement of users or activeness in social media by the users for health-related topics should also need to be focused on future researches.

CONCLUSION

In our study, the majority of the participants are using social media for understanding and discussing health-disease related topics. Social media offers a wide range of possibility for citizens to communicate among them and with doctors that could help them to be better informed about the health problems and more involved in their treatment process. It is often challenging to control or regulate the sources and quality of information, which may have negative detrimental effects for patients and doctors if it is misleading. Users should be able to identify the sources and reliability of the health information before sharing online in social media.

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