



Roles of Social Networks in Supporting Health Care: Case Study on the Public and Private Health Sectors in Saudi Arabia

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Abstract

The study seeks to identify the roles of social networks in supporting health care. The importance of the study lies in educating community members about the accuracy of choosing social media networks that can be relied upon in obtaining medical information to protect them from any health complications that may affect them because of using unreliable sources. This study uses the descriptive and analytical approach by preparing a questionnaire and distributing it to 112 doctors and nurses in Saudi hospitals and analyzing the collected data through the SPSS program. The research results stress that there is a statistically significant positive effect for the role of social networks in supporting health care. Besides, there is a statistically significant positive effect at the significance level of 0.05 among the averages of the research sample estimates of the role of social networks in supporting health care from the viewpoint of the study sample. The researcher came out with a set of recommendations, the most important of which is the necessity to ensure the accuracy and reliability of health information published on social networks.

Disciplinary: Information Technology (Social Media Networking) and Health Management (eHealthcare).

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1 Introduction

The media, with its various elements, have become one of the most important components of the world's life now due to the diversity of the areas of issues it presents and addresses and its great ability to influence individuals, especially at a time when the level of dependence on social media is increasing. This has enabled individuals to communicate with each other from wherever

they are. It gave its users the ability to exchange information in various fields, including the health field. Moreover, social media networks have enabled its user to form new friendships and expand the circle of exchanging information and news and he/she is the one who decides the validity of this tool in the actions he/she will perform. Thus, it can be used either correctly and achieve positive effects, or incorrectly by depending on unreliable sources and therefore lead to negative effects as these networks have linked individuals from different countries of the world and facilitated the possibility of exchanging their experiences and experiences with each other [1].

In the field of health care and health awareness, in particular, social media networks have proven their effective role and have been the cause to make society members get rid of many negative improper health habits that have dominated them for long periods. Health care has witnessed a development that coincided with the development of the means that were relied upon in exchanging information, which has become highly dependent on social media [2].

Afifi [3] pointed out that social networks have increased the level of health awareness among individuals in a way that avoids falling into health problems. Health care has become highly dependent on the use of social networks, as the real power of social networks lies in their ability to form virtual groups of patients that did not exist before. These groups make the patient feel psychologically comfortable because he shares the experiences of other patients suffering from the same disease, which helps him to confront and deal with it.

By reviewing a group of Arab and foreign studies related to the subject of the study, it becomes clear that there is no previous study that targeted studying the roles of social networks in supporting health care in the Kingdom of Saudi Arabia. The focus of previous studies was to link social media to the level of health awareness and the behavior of individuals in dealing with health information. In fact, there was no study conducted in Saudi Arabia, which confirms the need for theoretical literature to studies supporting the previous ones and overcoming the gap in the previous theoretical literature related to the research topic.

The importance of the research is evident from the importance of the topic that it seeks to focus on, which is the role of social networks in supporting health care. These networks have become one of the basic tools that health care service providers rely on to introduce their services. The importance of these sites is that they provide various health information. Through it, it can answer patients' various questions about health in general in addition to its effective role in establishing effective bridges of cooperation and communication between patients and doctors and enhancing the level of awareness of individuals in various health fields. The importance of this study is that decision-makers in health centers and institutions can benefit from the results of this study in improving the nature and level of health information that is disseminated through their sites and their own networks through social networking sites. This study is considered one of the first Arab studies in the Saudi environment that examines the roles of social networks in supporting health care in the Kingdom of Saudi Arabia. This research provides a modern scientific reference that can be used to support the results of future studies.

Given the role played by social networks in disseminating specialized health information to individuals, especially in the field of health care, the current research aims at uncovering the role that social media networks play in supporting health care in the Kingdom of Saudi Arabia from the point of view of specialists in the health sector (government and private) in Saudi Arabia.

Despite the great importance presented by social media in the field of supporting health care, educating individuals, and enhancing their level of awareness, it is considered a double-edged weapon as it is necessarily dependent on the social sites that people rely upon in obtaining health information. The danger lies in following influencers from well-known personalities who present and advertise medical products that they claim to have used and had a positive effect on them and advise others to try them without paying attention to the size of the differences between people and the negative effects that may affect them [4]. Some individuals may lack sufficient experience in verifying health information on social media sites. In fact, most of this information is paid ads to promote certain health products, which emphasizes the need to tighten control over ads posted on various social networks.

1.1 Concept of Social Networks

Social networks consist of applications that allow users to communicate with each other and exchange experiences and ideas using pictures, drawings, comments, and other means [5, 6, 7]. It can be defined as websites that allow individuals to get acquainted and share their ideas and contribute to the formation of social relationships between individuals [8]. Shuaib [9] pointed out that these networks consist of a group of active participants who can communicate with each other and exchange information and experiences, and the level of effectiveness of these networks is determined by the level of the continuous interaction of the participants with each other.

Ubada [10] also defined it as a concept that refers to a group of social sites that appeared with the second generation of the web, which was known as "Web2.0", it provides individuals with a virtual environment through which they can communicate and share their interests. Muhammad [11] defined it as websites that facilitated communication between individuals through sharing video and audio clips and pictures so that individuals can transfer these clips at any time. This means that social networks represent interactive websites that allow individuals to communicate with each other easily and smoothly, and thus overcoming the restrictions of time and space between them through exchanging photos and videos, conducting instant conversations, and other means and methods used.

As for the most prominent social networks, they can be identified as follows:

Facebook: It is one of the most prominent social networking sites, which has become one of the largest social media networks that are easy to use and access from various countries [12]. It is a site that includes information about each user, including the place of work, the university, and the name of the school in which the subscriber learned in addition to a group of other information. The user can browse the site and choose the groups that he wants to join in addition to choosing the friends that he wants to add to his personal page [13].

Twitter: It is a social network that includes millions of users from different parts of the world and that allows its users to communicate with each other via computers and mobile phones, and one of the most prominent features of messages that can be posted on this site is that they are composed of 140 characters.

YouTube: It is a site dedicated to posting videos free for users.

Myspace: It is a website that provides services on the web to users, and it also provides them with the opportunity to publish videos, photos, music clips, and members' personal files.

1.2 The Importance of Social Media Networks

Social media networks are among the most prominent and important results of modern technology and their importance was initially limited to communication between individuals. However, the level of its use quickly developed and the areas of reliance on it expanded. Thus, it became an important educational tool that could enhance the level of awareness of its users, educate them and strengthen their level of experience in various fields. These networks have also become one of the most important sources that are relied upon in changing social behaviors and directing individuals' positive and negative behaviors in some cases [14].

At the level of participation, social networks contribute to achieving interaction between individuals who have the same interests, especially in the field of awareness and education. They also contribute to strengthening the concept of social responsibility. These social networks have proven their effectiveness in guiding and instructing, spreading cultures, and achieving changes in various fields. It represented the pillar on which many groups relied to unleash their energies and creativity [15].

In general, social media networks have contributed to:

- Facilitate the transfer of data and information via e-mail.
- Enhance the level of cooperation and sharing between the teacher and the learner in the educational environment [16].
- Establish mutual relationships and friendships and increase the opportunity to get to know individuals who were not able to communicate with them for a period as they transcend temporal and spatial limits.
- Spread awareness and enhance the cultural level of individuals
- Social media allowed individuals to express themselves.

1.3 Social Media and Healthcare Networks

Social networks have witnessed a remarkable development during the past years and are still developing rapidly until the present time. Individuals have increased their dependence on it in the health field because of its effective role in obtaining health information and exchanging practical and scientific experiences. Doctors' interest in it has increased as one of the most effective means of advancing the level of health care for the various members of society, as these modern methods have contributed to facilitating the transfer and exchange of information in various fields, including the health field [4].

A presentation was given at the "Middle East Summit for Social Communication in Health Care" that was held in Dubai, organized by the international "Mayo Clinic" in partnership with the Mohammed Bin Rashid University of Medicine and Health Sciences and the American Hospital in Dubai, indicated that social networks have become an important and effective component of health care stressing that these networks cannot be a substitute for the regular doctor. The study cited a set of statistics that confirm the importance of social media networks in health care. It showed that about 80% of Internet users in the USA use social networks to search for their medical information, 60% of individuals trust the medical information doctors presented through these networks more than any other sources and that 60 million Americans shared their health experiences through social networks during the year 2018. Also, 890 hospitals in the USA resorted to using social networks to communicate with patients and 40% of the participants indicated that these networks affected the way they were cared for in their health.

2 Previous Studies

Donyazad [16] found an effective role for social networks in achieving health awareness for individuals. In fact, the primary goal of individuals browsing health pages and websites is to obtain advice related to health care, especially as those browsing these pages find interest from followers and offer topics that are at their level of interest aspirations.

Al-Taher and Walid [17] indicated the main purpose of using social networking sites in the health field is prevention. Thus, respondents follow advisory, preventive and educational recommendations because of their desire to avoid and prevent diseases. This confirms the level of awareness of individuals towards the use of these means. The results also confirmed that followers interact with health topics that are raised through social networks, which confirms the importance of these topics for followers due to their relevance to health aspects, and that these sites help to improve the level of health awareness among followers regardless of the demographic characteristics of the followers such as gender, educational level, and age.

Singh et al. [18] pointed out that patients and their families in the United States of America depend on social media to share their health experiences and obtain education in the health aspect. However, it showed that the risk that may be associated with the use of social media in the health aspect is spreading false health information through these sites that could negatively affect students and followers.

Mustafawi [19] concluded the importance of the advertising campaigns' role in enhancing the level of health awareness among students and increasing their ability to make the right health decisions and create a useful knowledge outcome. Increasing their level of health awareness contributes to enhancing their ability to make sound health decisions. The results of the study also confirmed that social media contributed to spreading health awareness by 96%, which confirms the influencing level of social media's contribution to spreading health awareness among individuals.

Henceforth, and based on the above, the important role played by social networks in supporting health care and enhancing the level of individuals' awareness of health aspects and

topics is very clear. In addition, social media role at the level of exchange of knowledge and experiences between individuals and doctors in a way that improves the patients' experience and increases their ability to confront and deal with their diseases is evident.

This study problem lies in the fact that patients resort to the Internet to obtain information in an attempt to overcome the knowledge gap they have regarding their health. Some may even resort to finding ways to treat their diseases, creating challenges for doctors because the medical information that those who resort to search engines obtain is originally from unreliable sources and is not specialized in providing accurate medical information. It is worth noting that social media networks, despite their importance and contribution to the development of health care, cannot substitute a doctor or those who serve in the field of hospitals and health centers.

Indeed, social networks should take a role that complements and supports the role of the doctor to provide the patient with psychological, health and moral guidance. It is also the responsibility of patients to rely on reliable sources to obtain medical information. Hence, the problem of the current research is to determine the role that social networks play in supporting health care in the Kingdom of Saudi Arabia. The researcher has noticed the lack of Arab studies that have discussed this topic, especially in the Saudi environment, despite the level of its importance in supporting the level of health care provided by these networks. This study problem is focused on answering the following questions:

- What are the health benefits achieved by social media networks in health care from the viewpoint of the study sample?
- What is the role social networks play in support of health care in the Kingdom of Saudi Arabia?
- Are there any statistically significant differences in the respondents' answers towards the role played by social networks in supporting health care due to the variables of age, educational level, and job experience?

3 Research Methodology

The researcher used the descriptive and analytical approach by preparing a questionnaire and distributing it to over 112 doctors and nurses in Saudi public and private hospitals during July-August 2020 and then collecting data and analyzing it through the SPSS program. The research hypotheses are given at the level of significance ($\alpha \leq 0.05$) as

H#1: There is a statistically significant effect of the roles of social networks in supporting health care,

H#2: There is a statistically significant effect of health satisfaction achieved by social media networks in health care,

H#3: There is a statistically significant effect of the health topics most discussed on social media networks.

3.1 The Characteristics of the Members of the Community and Study Sample

The research sample consisted of (112) doctors and nurses who return the questionnaire. Table 1 shows the results that were obtained about the characteristics of the study sample individuals classified into frequencies and percentages of the demographic variables (gender, age group, career level, qualification, experiences, and workplace).

Table 1: Distribution of the sample according to the demographic variable (Gender).

Variable	Level	Frequency	Rate (%)
Gender	Male	76	67.9
	Female	36	32.1
	Total	112	100
Age group	Less than 30 years	20	17.9
	30 years- less than 50 years	60	53.6
	50 years- less than 60 years	30	26.8
	60 years or more	2	1.8
	Total	112	100
Career Level	Doctor	84	75.0
	Nurse	28	25.0
	Total	112	100
Qualifications	Diploma	10	8.9
	Bachelor degree	39	34.8
	Master degree	25	22.3
	Ph.D. holder	38	33.9
	Total	112	100
Years of experience	Less than 5 years	22	19.6
	From 5 years to 10 years	21	18.8
	More than 10 years	69	61.6
	Total	112	100
Workplace	Public	77	68.8
	Private	35	31.3
	Total	112	100

4 Results and Discussion

Descriptive statistics results for the study axes:

4.1 First Axis: Roles of Social Networks in Supporting Health Care

To answer the first question, the arithmetic averages of the answers of the study sample members were extracted about the paragraphs of the axis "The role of social networks in supporting health care". Table 2 illustrates this.

Table 2: The arithmetic averages and SD of the roles of social networks in supporting health care.

No	Paragraph	Arithmetic average	SD
1	Social networks and media are used to spread campaigns and provide initiatives that support health care.	3.95	.914
2	Social media networks provide information and knowledge related to various forms of health care.	4.21	.832
3	Social networks allow you to communicate with a healthcare professional anytime and anywhere.	3.92	1.07
4	Social media helps reduce the duration of treatment by spreading awareness and education.	3.95	.914
5	Social networks provide the possibility to follow up the cases of illness during the treatment period.	3.92	.927
6	Social networks contribute to reducing disease transmission.	4.00	.890
7	Social networks promote interest in personal health care.	4.15	.818
8	There is absolute confidence in the healthcare information provided by social media networks.	3.53	1.04
As a whole		3.95	High

Table 2 indicates that the arithmetic averages of the role of social networks in supporting health care came at a high level. The paragraph stating, "social networks provide information and knowledge related to various forms of health care." Comes in first place with an arithmetic average of (4.21), while the paragraph stating, "There is absolute confidence in the health care information provided by social networks." comes last with an arithmetic average of (3.53).

The general result indicates the existence of a medium level of the role of social networks in supporting health care from the point of view of the study sample, where the arithmetic average of the general total was (3.95). This indicates that the responses of the study sample were positive and with high and medium degrees distributed over the paragraphs of this field. As for the values of the standard deviation, they are high and low, and this indicates that the answers of the study sample vary and diverge in this area to some extent.

4.2 Second Axis: Health Satisfaction Achieved by Social Networks in Health Care

Answering the first question, the arithmetic averages of the answers of the study sample members were extracted about the paragraphs of the axis "health satisfaction achieved by social networks in health care". Table 3 illustrates this:

Table 3: The arithmetic averages and standard deviations of health satisfaction achieved by social media networks in health care.

No	Paragraph	Arithmetic average	SD
1	Provide useful information in the field of health care and first aid.	4.12	.724
2	Increase health care and personal hygiene.	4.20	.749
3	Limiting harmful health habits such as smoking.	3.95	.924
4	Establish good and organized health habits.	4.09	.816
5	Reducing bad health habits.	3.96	.826
6	Early periodic examination to discover diseases in their early stages.	3.82	.969
7	Gain fitness.	3.77	.955
8	Increase health education and awareness.	4.21	.787
As a whole		4.02	High

Table 3 indicates that the arithmetic averages of health satisfaction achieved by social media networks in health care have reached a high level. The paragraph that states "increasing health education and awareness." comes in the first place with an arithmetic average of (4.21), while the paragraph that states "Gain physical fitness." comes last with an arithmetic average of (3.77).

The general result indicates the presence of a medium level of health satisfaction achieved by social media networks in health care from the point of view of the study sample, where the arithmetic average of the general total was (4.02). This indicates that the responses of the study sample were positive and with high and medium degrees distributed among the paragraphs of this axis. The values of the standard deviation range between high and low, which indicates that the answers of the study sample vary and diverge in this area to some extent.

4.3 Third Axis: The Most Frequently Discussed Health Issues on Social Networks

In order to answer the first question, the arithmetic averages of the answers of the study sample members were extracted about the paragraphs of the axis "Health topics most discussed on social networks ." The tables below illustrate this:

Table 4: The arithmetic averages and standard deviations of the most frequently discussed health topics on social networks.

No	Paragraph	Arithmetic average	SD
1	Weight loss methods and diets.	4.12	.850
2	Herbal and alternative medicine.	3.79	.911
3	Cosmetic and medical products for skin and hair care.	4.14	.947
4	Virus prevention and methods of transmission.	4.09	.782
5	Modern medical discoveries.	3.83	.954
6	General health care.	3.96	.837
7	Aesthetic medicine and plastic surgery.	4.05	.898
8	Sport and fitness.	4.16	.789
As a whole		4.02	High

Table 4 indicates that the arithmetic averages of the health topics most discussed on social networks came with a high level. The "sport and fitness" item comes in the first place, with an arithmetic average of (4.16), while "Herbs and alternative medicine." comes last with an arithmetic average of 3.79.

The general result indicates the presence of a medium level of the health topics most discussed on social networks from the point of view of the study sample, where the arithmetic average of the general total was (4.02). This indicates that the responses of the study sample were positive and with high and medium degrees distributed among the paragraphs of this axis. The values of the standard deviation range from high to low which implies that the answers of the study sample vary and diverge in this area to some extent.

4.4 Results of One-Sample t-Test

The study variables related to the role of social networks in supporting health care were tested using the one-sample test, and the results were given in Table 5.

Table 5: Results of the one-sample test.

The study axis	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
First Axis	84.68	112	<.001	3.96	3.87	4.05
Second Axis	61.91	112	<.001	4.02	3.89	4.15
Third Axis	77.73	112	<.001	4.02	3.92	4.12

The data of Table 5 refer to the t-test used in testing the hypothesis of the regression line intersection (fixed limit), which indicates that the regression line passes through the origin point as it intersects the y axis at a certain point (the fixed limit).

For the first axis, Table 5 shows that the calculated t-value reached (84.68). The sig-value of the associated significance level is less than 0.05, which means the research hypothesis H#1 is accepted. "There is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) among the averages of the research sample estimates of the role of social networks in supporting health care from the viewpoint of the study sample."

Table 5 shows that the second-axis t-value reached (61.91), and the sig-value is less than (0.05), which means H#2 is accepted indicating that "there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) among the averages of the research sample estimates of health satisfaction achieved by social media networks in health care from the viewpoint of the study sample."

For the third axis, Table 5 shows the calculated t-value (77.73), the sig-value is less than (0.05). Thus, H#3 is accepted that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) among the averages of the research sample estimates of the health topics most discussed on social media networks from the viewpoint of the study sample.

4.5 Discussion

Based on the obtained results emphasizing the importance of the roles that social networks play in supporting health care in Saudi hospitals, from the point of view of doctors and nurses, it is found necessary to ensure the accuracy and reliability of health information published on social networks. The spreading the culture of relying on social networks to obtain health information aims of increasing health awareness and communicating with medical authorities to provide health care support. It should give more efforts to provide the requirements to apply the foundations and applications of social networks, which also requires the development of social networks for the research sample hospitals, and linking them to the various internal hospital departments to facilitate the provision of necessary medical care. It should conduct in-depth research and studies on various aspects of the subject of study and trying to study each aspect separately and in more detail.

5 Conclusion

The results of this research showed a statistically significant effect of the role of social networks in supporting health care. The study showed that the use of social media networks and means in spreading campaigns and presenting initiatives that are concerned with supporting health care was high. This study attributed this to the fact that social networks facilitate the transfer of data and information via e-mail, and enhance the level of cooperation and knowledge sharing. In addition, the study showed that social networks provide information and knowledge related to various forms of health care. They also allow the possibility of communicating with a health care professional at any time and place.

The results of this research showed the existence of a statistically acceptable level of health satisfaction achieved by social networks in health care. The study revealed that providing useful

information in the field of health care and first aid contributes to increasing awareness and enhancing the cultural level of individuals. Social media has also allowed individuals to express themselves on the one hand, and to increase health care and personal hygiene care on the other hand, in addition to establishing good and organized healthy habits.

The study also indicated that the health topics most discussed on social media networks were weight loss methods and diets, herbs and alternative medicine, in addition to cosmetic and medical products for skin and hair care, and general health care. The researcher attributes this to the fact that social media networks have become an educational tool that enhances the level of awareness of its users, educates them, and improves their level of experience in various fields.

6 Availability of Data and Material

Data can be made available by contacting the corresponding author.

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