

Social Networks and Their Role in Current Medicine: An Indispensable Tool for Doctors

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Abstract

Social networks have had a substantial impact on the current methods of professional development and practice within the health services industry. They have proven to have a wide range of suitable applications that facilitate communication, training, and medical practice. Currently, there are many web systems that allow people to have a public or semi-public profile, allowing the creation of shared connections with a list of users within the same system, which may vary in nature and terminology depending on the site in which it is used, shaping the concept of the social network. The purpose of this review is to highlight the usefulness of social media networks in academic medicine and its impact on health services.

Keywords

Social Networks, Academic Medicine, Health Services

1. Introduction

Social networks are web-based services that allow people to build a public or semi-public profile within a computer system, form connections within a system, and articulate a list of users with whom a personal and impersonal relationship is shared [1]. The nature and catalog of these connections may vary from site to site [2]. Social networks can be websites or electronic applications, which allow users to use and distribute information created and shared by other users [3]. Unlike traditional websites, they are not entirely limited by copyright; a reason why this facilitates a real-time exchange of information simplifying the

interactive participation and discussion on the part of the users [4].

Today social networks are part of the daily life of its users; Facebook has 2234 million monthly active users in the world, 1500 million on YouTube and WhatsApp, 813 million on Instagram, 794 million on Tumblr, 330 million on Twitter, and 260 million on LinkedIn (**Table 1**) [5]. Its main objective is the connection, rendering to interests, activities, identities, or professions, becoming a useful tool for all kinds of scientific information [6]. On the basis thereof, it facilitates the instantaneous exchange of information, which allows users to interact and discuss, unlike traditional websites [7].

Due to the change in current forms of communication and the acceptance of social networks by the general public and health service providers, the door is opened to a new dimension in medical care [8]. For these reasons, it is necessary to review the advantages and limitations of social networks, as well as the impact of their improper use.

2. Aims and Uses of Social Networks in the Health Field

The aims of health professionals when using social networks are:

- 1) Learning through digital information.
- 2) Sharing medical concepts to the general public.
- 3) Awareness of health education.
- 4) Creation and highlighting of research studies.
- 5) Know the epidemiological and demographic characteristics of a population, as well as their diseases.
- 6) Generate evidence-based medicine.
- 7) Marketing [9] [10].

On the other hand, according to a systematic review carried out in 2013, there are seven key uses of social media for health communication, which are: 1) supply health information in a variety of conditions, 2) provide answers to medical questions, 3) facilitating patient-patient and patient-health professional dialogue, 4) data collection on patient experiences and opinions, 5) health intervention, health promotion and health education 6) reduce the stigma of the disease,

Table 1. Statistics of active users in social networks.

Social Networks	Active Users
Facebook	2234 million
YouTube	1500 million
Whatsapp	1500 million
Instagram	813 million
Tumblr	794 million
Twitter	260 million
LinkedIn	260 million

a. Differences of active users in social networks in the world. The academic uses of these social networks have changed the way in which human beings obtain knowledge.

and 7) provide online consultations [8] [11]. Silas *et al.*, through the implementation of 257 surveys, reported that 54% of doctors use social networks for work purposes, specifically referring to medical care updating, communication with other doctors, service offerings, and leadership with patients [12].

Alsobayel *et al.*, reported on professional development through social networks in health specialists, in which among specialists between 20 and 30 years old, 70.6% of doctors use social networks for professional development purposes, knowledge domain, and resolution of problems. The social networks most used by these professionals were Twitter, YouTube, Instagram, Facebook, Snapchat, and LinkedIn; Twitter being the one perceived as the most useful social network by academic professionals [13].

3. The Impact of Social Networks on the Health Field

In the health field, the real impact of social networks is beyond what is written in the current literature. The use of these virtual platforms allows sharing procedures in real-time, scientific dissemination, and virtual communication of a scientific nature, in which experiences are shared that may have an impact on a population that is sometimes heterogeneous [14] [15] [16]. Studies have been documented, such as the one carried out by Dean Mattingley in 2017, which shows results, where the impact of networks has have changed the time, used to obtain academic information. According to Mattingley, 11 to 13 hours can be used in searches related to health. The most common social networks for this purpose are: Facebook (86%), Medscape Physician Connect (52%), LinkedIn (42%), YouTube (40%), Blogging (25%) and Twitter (20%) [10] [11] [12] [Table 1].

In the educational field, the impact on health professionals is undeniable. Formerly, medical education was limited by the need for a physical presence in the classrooms where the lecture was taught. Currently, training can be long-distance and without face-to-face interaction tutoring [17] [18]. Twitter is the most used network in this kind of training. By using messages of up to 280 characters called tweets, it allows for the interaction of ideas from around the world about common or related lines of research. Tweets can be of a personal, scientific, social, or promotional nature. Twitter is already a space for academic discussion outside the classroom and towards the public. As shown in **Figure 1** where the promotion and discussion of the use of loupes versus scope in lower extremity trauma that is promoted through a tweet (**Figure 1**) [19]. When analyzing medical tweets on the network, the behavior of publications and medical groups on certain topics has been identified, finding professional messages where they can expose and develop health issues, in general, as better than in an academic classroom. A clear example today is the American College of Surgeons, which created a platform for real-time connection which provides an opportunity for these specialists to promote teaching, facilitate learning to in distant places, and problem-solving, becoming a virtual community of a medical association [20] [21].



Figure 1. Typical example of twitter used as a webspace to share personal ideas and promote academic discussion outside the classroom.

On the other hand, it is important to mention the negative impact of social networks where the most common errors are the disclosure of information, photographs, and personal data of patients, without the relevant informed consent. In 2016, Garg *et al.* encountered several professional high-risk events by informing residents that their medical colleagues exposed identifiable patient's information and clinical images of patients without their informed consent, as well as inappropriate activities at medical institutions [22]. Within this framework and through analyzing 5156 tweets, 260 users were found, showing that in 3% of the tweets they were categorized as non-professionals, 0.7% contained possible violations of patient privacy, 0.6% contained profanity, 0.3% sexually implicit material and 0.1% contained discriminatory statements [23].

In addition, non-professional behaviors have been documented in social networks, showing illicit drugs and racist or sexist content-related material. Hence, it is important to mention it must be done responsibly, inside and outside academic or hospital institutions where employed [24] [25].

4. Social Networks and Medical Education

Previously, the learning of health personnel was limited by the necessity to only obtain physical information, since there were no other means of communication. Aforementioned, using social media you can virtually bring health professionals together and interact with doctors from around the world, that share professional interests or conduct similar research. These enhanced connections permit health professionals to learn new ideas and allows opportunities for real-time or in the same virtual space intellectual collaboration [26] [27]. For example, the American College of Surgeons allows associate surgeons to connect in real-time with affiliated surgeons from other parts of the world, where questions are answered or information on relevant topics is obtained [28].

All this health education through social networks can be addressed to a group of patients, wherewith this information acquired through these discussion forums allows a better understanding of their pathology and improvements in treatment [29]. Traditionally, physicians focused on classroom learning and on-site attendance at national and international conferences to obtain new

knowledge. Social networks have modified this behavior allowing them to obtain the same information through electronic devices. Twitter, Facebook, and YouTube have positioned themselves as the most important networks to when interacting in discussion groups with doctors and patients with common lines of interest from all over the world, with common lines of research. This creates an opportunity to share and collaborate socially and academically among them [30].

5. Social Networks and the Doctor-Patient Relationship

Social networks and the doctor-patient relationship have created a never-before-seen link for medical care, created by the constant flow of communication that exists today between these two [31]. It is undeniable that the patient has a greater active role in their health, so today we have groups of patients who are more informed or with an erroneous interpretation of the information. Also, they present greater participation in their diagnosis, evolution, and treatment [32]. This happens, since not all the information that patients obtain is from a reliable source, and, in case of obtaining health information and not being properly guided by a professional, it can lead to the patient's loss of confidence in the health system or misinterpretation [33].

To obtain the greatest benefits from social networks in the doctor-patient relationship, it is essential to have a mutual commitment, as well as their active participation, which modifies their behavior and understanding. Physicians should advise patients to focus on conducting quality searches on verified social networks that are academically supported. This will lead us to satisfy their knowledge needs and ensure that they can obtain reliable information, which in the long run will be reflected in better prognoses for patients [34].

One of the clearest examples is with chronic diseases, in which professional social networks have shown usefulness and positive impact in patients who need reinforcement for medical advice and better adherence to therapy [35]. This will be achieved through a continuous or real-time connection with the health professional, which perceives more time of personalized, quality medical care and allows the doctor to monitor the changes that exist [36] [37] [38].

It is important to emphasize that this communication provided by the social networks between the doctor and the patient must be carried out in a professional, systematic and thoughtful manner, without invading privacy and respecting the doctor-patient relationship at all times. It is essential to monitor the quality and reliability of the information acquired and published [39]. The privacy of users should not be invaded since although there are still no regulations on the subject, the doctor must base their relationship on ethical, dignified treatment and must have verbal approval and informed consent to avoid subsequent conflicts in your health care [40].

On the other hand, the doctor and the patient can continuously interact in treatments in acute and chronic diseases, constituting themselves as an adequate

means to obtain clinical information and satisfy the needs of the patient that in face-to-face settings would not be met [41]. The approach offered by social networks today, not only allows us to know the needs of patients in a more professional, direct and quick way, but also allows the doctor in question to analyze the underlying factors that support the environment and health from the patients [42]. This, in turn, improves patient commitment, positively impacting clinical evolution, positioning itself as a tool in offering medical treatments and health services, with clear benefits for patient health [43].

Two important networks in this area are Twitter and Instagram, in which, if the information is obtained from accounts from verified health organizations, images, and information based on relevant clinical and methodological evidence can be obtained. This allows for free, reliable, and efficient dissemination, in real-time, which facilitates the understanding of information between patients and health professionals [44] [45] [46].

6. The Inappropriate Use of Social Networks in the Health Area

Social networks are not always beneficial for health professionals and patients, since, although they represent an effective and indispensable tool, they can be full of misleading information and be used by “charlatans” or health usurpers, who seek to obtain economic benefits without professional support. For example, miracle or medical products that perform aesthetic procedures without having formal training in the subject [47] [48].

The confidentiality and privacy of users are of the utmost importance when exchanging information between the doctor and the patient, or between health personnel. The information obtained from physical, electronic, and photographic files by treating doctors can be used inappropriately, putting at risk the patient, the professional prestige, and the health institution where he is treated [49] [50]. It is a situation in which treating physicians or other health personnel related to patient care can participate; therefore, this is an issue that should not be taken lightly. This issue should be prevented by always having informed consent, keeping the confidentiality of each case, and avoiding the use of electronic devices and personal social networks to store personal information of a patient [51] [52].

Health professionals must be very careful regarding interaction on social networks such as Twitter, Instagram, Facebook, or WhatsApp, where the mere sending of a request for interaction between doctor and patient can be misinterpreted and put the relationship at risk [53]. It is recommended that the information shared is always from a professional-type account, never from a personal one. Furthermore, health professionals should make and post only professional-type messages, never overlooking the personal evaluation and interaction of medical consultation [54].

For this reason, to avoid the inappropriate use of social media in medicine, the

Table 2. Recommendations of the American college of physicians.

Reserve the use of digital communication for face to face follow up patients.
Review the information to ensure the accuracy of the content.
Refer patients only to trusted sites and sources.
Before posting any information, consider the message and content.
Differentiate individual publications from professional ones
Keep personal and professional contacts separate.
Constantly examine the available material that is shared on the social network.
Implement IT's for secure messaging and exchange of information.
Follow institutional practices and policies for remote and mobile access.

American College of Physicians published some recommendations that are of importance to health personnel (**Table 2**) [55].

Finally, every day there is more information where the use of social networks during the working hours of health professionals is not recommended, since they decrease productivity by 1.5%, and can distract the user when doing their work. For this reason, it is necessary to use social networks during working hours with prudence and always focused on the benefit of patients and health institutions where they work [56].

7. Conclusions

The achievements that have been made in medical practice with social networks are evident. They permit having interactive and real-time communication with patients, as well as helping to set goals, improve patient care, and create bonds of trust that allow a strengthening of the doctor-patient relationship.

If social networks are used correctly, the doctor obtains benefits for his training, patient interaction, and in his medical practice. There are also benefits for the patient since they have more active and informed participation in their health care, which eliminates paternalistic medical care that was formerly the only way to practice medicine.

The interaction of the doctor with the patient on social networks must be considered at all times, always protecting the patient's information. It is recommended to obtain a consent release form for professional use (research, conferences, etc.) for data, such as patient images. In addition, it is necessary to implement strict and objective regulations in each health institution on the use of social networks, to avoid the disclosure of false or personal information of patients. The use by health personnel must be responsible and it is up to the user to maintain control of the information that is shared.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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