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Social media and health: Current and future healthcare provider perspectives

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ABSTRACT

Objective: As over 80% of active United States internet users are using social media (SM) sites, it is important for healthcare students (HCS) and healthcare professionals (HCP) to become educated on proper SM usage behaviors to effectively understand and apply SM policies. This research was designed to examine HCS and HCP motivations for utilizing SM sites, to determine the concerns HCS and HCP have with SM usage, and if these concerns are being addressed through SM policies and education. **Methods:** In 2012, 4370 HCS and 4269 HCP from the Texas Tech University Health Sciences Center participated in the Institutional Review Board approved online survey. Of those contacted, 187 HCS and 180 HCP completed the survey. Applying uses and gratifications theory, the authors conducted a mixed method survey and analyzed HCS and HCP motivations for utilizing SM sites and the concerns associated with SM usage, while simultaneously analyzing whether concerns are being addressed through SM policies and education. **Results:** Analysis reveals HCS and HCP were motivated by social entertainment, convenience of information, and professional self-expression. In addition, HCS and HCP top concerns associated with SM use in a professional and academic setting are patient privacy. This study also indicates HCP was more aware of their institutional SM policies. Yet, both view SM policies necessary to help educate them on effective SM use. Analysis of the qualitative responses reveals HCS and HCP's top concerns with SM usage are Health Insurance Portability and Accountability Act violations and patient privacy. **Conclusion:** This study offers insight into HCS' and HCP' SM motivations and behaviors. It also expands on issues HCS and HCP have with SM usage and if SM policies effectively address these concerns. Future research should examine if and how patients use SM when seeking health information and analyze patient's opinion of HCS' and HCP' usage of SM sites.

KEY WORDS: Healthcare, healthcare professionals, healthcare students, social media education, social media policy, uses and gratifications

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INTRODUCTION

Communication has evolved as technology, specifically internet platforms, has improved. Due to these technological advances, a two-way communication model has emerged between users and websites [1]. In 2011, nearly four in five active US internet users were accessing social media (SM) sites and spending nearly a quarter of their total time on the internet [2]. As such, SM platforms are becoming ever popular and important communication avenue to evaluate.

SM sites have been in existence for over 10 years and are now being utilized globally. It is estimated that SM users will increase 18% from 1.47 to 1.73 billion in just 1 year and continue to rise dramatically [3]. With the number of SM users increasing, interest in using the internet to seek health information continues to grow as well. The increased use of SM sites for online interactions has become more popular, directly impacting the healthcare industry. Over 80% of Americans use the internet to search for health information [4]. As SM usage continues to grow in popularity, healthcare providers and healthcare students

(HCS) are given opportunities go online to connect and network with others within the healthcare industry.

The first goal of this study is to examine HCS' and healthcare professionals (HCP) motivations for utilizing SM sites. The second goal of this study is to determine the concerns HCS and HCP have with SM usage and if these concerns are being addressed through SM policies and education. In order to achieve these goals, the uses and gratifications (U and G) theory was utilized to assess HCS' and HCP' motivations for SM use, while examining current perceptions of institutional SM policies and practices.

THE ROLE OF SM IN HEALTH

Types of SM

There are several SM networks, but for the present study only highly utilized SM were considered. Facebook, founded in 2004, is a free SM site designed to provide users opportunities to connect with others and share content with the world [5].

Twitter, created in 2006, is a SM site that offers real-time information and networking while allowing users to share stories, ideas and opinions [6]. LinkedIn, established in 2003, is the world's largest professional SM site designed to connect professionals and provide user's access to people, jobs, news, and insights [7]. Google+, launched in 2011, is a SM site that connects users through unique features (status updates, networking circles, hangouts on air, and video chat) and lets users control how they appear not only within this site but across Google platforms as well [8]. Finally, YouTube, created in 2005, is a SM site designed to offer users a forum to connect, inform, and inspire others while also allowing people to discover, watch and share originally-created video content [9].

SM among HCS

While the majority of current HCS are active and experienced users of SM, most are without proper education on how to use SM sites in both a professional and personal manner. These students also demonstrate a lack of knowledge of organizational SM policies and how these policies are applied for proper usage [10]. As such, there is confusion regarding appropriate behavior both for personal brand development of the student, as well as maintaining the institution's professional reputation. Little research has examined reasons HCS would choose not to use SM; however, a study of HCP revealed fear pertaining to patient privacy and confidentiality violations as the top reasons for abstaining from SM use [11]. As these HCS are future professionals of the healthcare industry, similar barriers for SM usage may exist among this group. HCS are beginning to express the importance of understanding how to use SM whether it is professionally, personally or a combination [12]. HCS have reported editing their SM profiles when applying for jobs or to represent themselves as more professional. Yet, an examination of pharmacy student's SM activity revealed high usage, but a continued lack of understanding on how to best represent themselves as health professionals online [13,14]. Without proper understanding and application of SM policies, these students are not fully aware of how SM usage can negatively impact their healthcare careers. Knowing a healthcare organization's SM policies and applying these guidelines will allow HCS to remain active on SM sites without damaging their future.

SM among HCP

In contrast to students, HCP is typically not as active and experienced with SM. Applying techniques to properly use SM can positively contribute to an HCP personal and professional development. Some HCP is active users of SM, especially through blogs and physician networking sites [15]. This activity shows that HCP can be users of SM sites when appropriate online behaviors are being practiced.

Research examining why physicians do not use SM revealed fears are pertaining to the population's attitudes about the physician's online professionalism, the physician's healthcare organization, and the medical profession as a whole [14]. SM

policies provide guidelines to the HCP, which can alleviate these barriers; however, similar to students, HCP demonstrate a lack of knowledge and understanding of these policies. Understanding a healthcare organization's SM policies and applying these guidelines will allow HCP to connect with others (colleagues, students, patients, community leaders, etc.) without damaging both their personal and professional reputations.

SM Usage in Health Education

SM has only recently been incorporated into education for HCS. It is suggested that SM sites should be incorporated into medical education to provide useful interfaces for HCS to collaborate and communicate with others within the health care industry [16]. HCP has fewer opportunities for SM education. A majority of SM education available for HCP is either through their current healthcare organization or from online tutorials. Of these, SM education opportunities, most were informative and based on institutional and national guidelines [17].

Additional education for HCP and HCS is essential as SM usage continues to increase. In fact, an analysis of medical students Facebook pages from 2007 to 2009 revealed that although education about patient privacy had increased, there was no education that addressed protecting patient privacy online [18]. Patient privacy is just one of many possible violations which are why further education for HCP and HCS is necessary. Education is also needed for both providers and students on SM policies so that the implications of SM are clear and understood.

SM Policies among Healthcare Organizations

To provide further guidance for medical professionals, several national SM policies have been implemented. In 2010, the American Medical Association executed a SM policy to help physicians maintain a positive online presence, while allowing the patient-physician relationship to remain intact [19]. In 2012, the American Nursing Association also implemented a SM policy designed to provide guidance to nurses on professionalism online and how to properly use these sites without causing harm to patients [20]. However, these policies are still new, and additional education is needed to ensure that both HCP and HCS are actively practicing these guidelines.

Even with the implementation of these national policies within the healthcare industry, healthcare organizations have lagged behind in executing similar guidelines. For example, an examination of US medical schools revealed that while nearly all schools have a SM presence, specifically Facebook, the majority did not have a SM policy in place to address online behaviors [21]. Of the SM policies in place by healthcare organizations, most are neutral in tone and discuss respecting people, copyrights, and being proactive [22]. Though there are national SM policies, healthcare organizations should have their own guidelines for both HCS and HCP to follow.

THE PROBLEM

The use of SM among both HCS and HCP is increasing. However, little research compares the motivations for SM usage among these two groups, while also analyzing concerns for using SM sites. Therefore, this study examined and assessed HCS and HCP motivations and concerns for using SM. Furthermore, this study evaluated if these concerns were addressed through SM policies and education. The analysis was framed around the following research questions (RQ):

- RQ1: Are there differences in the motivations of HCP and HCS in their use of SM?
- RQ2: What are the biggest concerns regarding SM in a professional capacity?
- RQ3: Are HCS and HCP aware of their institution's SM policies? If so, what are their views on it?
- RQ4: How can these views/concerns be addressed through education?

METHODS

Sample and Procedure

In order to address the above-specified RQs, a survey was conducted across two samples. The first sample consisted of 4370 HCS from the Texas Tech University Health Sciences Center (TTUHSC), while the second sample was comprised of 4269 alumni from the TTUHSC. Both samples were contacted through an email list asking for their participation in an *institutional review board* approved survey addressing their SM use. Of those contacted $N = 188$ HCS and $N = 180$ HCP responded, resulting in a 4% response rate for each group. Previous research notes that fear of spam and concerns of confidentiality typically cause lower response rates for internet surveys [23].

The HCS whom responded to the survey had a mean age of 27.78 (7.34) with 27.5% (47) male and 72.5% (124) female. The sample consisted of 31.9% (55) medical, 23.8% (41) allied health, 22.1% (38) nursing, 20.3% (35) pharmacy, and 1.7% (3) graduate school of biomedical sciences students. The HCP was comprised of 31.1% males, 47.2% females and 21.7% choosing not to respond, with a mean age of 42.19. Of those whom responded 40.7% were doctors, 24.3% were nurses, and 35% selected "other" as their occupation.

MEASURES

SM Usage

Respondents were asked which of the following online SM outlets they used both personally and/or professionally (academically for HCS): Facebook, YouTube, LinkedIn, Google+, Twitter, patient communities, and physician communities. Frequency of posts was assessed using a 5-point scale ranging from never to 1-2 times a day.

Motivations for SM Usage

Motivations for SM use were assessed using a 22-item index derived from previous U and G research associated with various SM. The motives were assessed using a 5-point Likert-scale ranging from strongly disagree to strongly agree. As this is one of the first explorations each of the motivation variables were subjected to a principle components analysis using varimax rotation.

Online Interaction Perceptions

Participants were asked to indicate their level of interest (on a 5-point scale ranging from not interested to I already do) in interacting with the people they serve online on the following items: Prescribe patient education resources, monitor patient health and/or behavior, monitor patient drug adherence remotely, give care advice to many patients simultaneously, grow and/or maintain your practice, give patients discount vouchers and diagnose and/or treat patients. In addition, respondents were asked to select all responses (concerns about liability, concerns about patient privacy, no way to get paid for these activities, lack of time, feel such interaction is inappropriate, just not that interested, the technology is new to me) that applied to the question, "what are your top concerns that may hold you back from interacting with the people you serve online?"

Current SM Policies

To address this variable, respondents were asked if they were aware if their institution currently has a SM policy and if so, was it enforced. Additionally, participants were asked an open-ended question regarding their thoughts about their institution having a SM policy.

RESULTS

RQ1 examined the differences in motivations between HCP and HCS in their use of SM. The 22 items measuring motivational variables were subjected to principal components analysis with varimax rotation to extract motivational factors for both HCP and HCS. Eigenvalues of 1.0 or higher were required to retain factors, and items were only assigned to factors if loadings were $> .50$. Three factors emerged for both HCP and HCS, with variation in two factors [Table 1]. Social entertainment contained the same items in both groups and accounted for 12.4% of the variance for HCS and 16.27% of the variance for HCP. An index of the five items resulted in a Cronbach's alpha of 0.94. All items of this factor loaded strongly including "because it is fun" and "to communicate support for others." This factor combines a desire for leisurely interaction that is both enjoyable and inclusive.

The second factor, convenience of information, explained 7.19% of the variance with four items for HCP. The items were combined to form an index with a Cronbach's alpha

Table 1: Factor loadings of motivations for HCP and HCS

Factors	HCP	HCS
Factor 1: Social entertainment		
To pass time when I am bored	0.845	0.862
Because it is entertaining	0.892	0.914
Because it is fun	0.900	0.897
To engage in discussion with others	0.783	0.772
To communicate support for others	0.838	0.747
Factor 2: Convenience of information		
To provide information quickly	0.791	0.883
To provide information at any time	0.835	0.890
Because it is easy to provide information	0.830	0.874
For the wide variety of information I can give	0.803	0.836
To allow clients to keep up with current events	-	0.650
For providing specific information of interest	-	0.847
To provide links to other information sources	-	0.684
Because information is cheap to obtain	-	0.596
Factor 3: Professional self-expression		
To allow clients to keep up with current events	0.767	-
For conveying expert knowledge	0.804	-
It is helpful for my professional future	0.867	-
To post my resume and/or other work online	0.806	0.765
To help me network with professional contacts	0.840	0.709
To convey who I am to my colleagues and clients	0.810	0.691
To criticize inaccurate information	-	0.686

HCP: Healthcare professionals, HCS: Healthcare students

of 0.98. Items in the index include “to provide information quickly,” “to provide information at any time,” “for the wide variety of information I can give,” and “because it is easy to provide information.” In contrast HCS place more importance in convenience of information, accounting for 52.1% of the variance. Eight items created this factor (including the four items mentioned previously), with a Cronbach’s alpha of 0.94. These items indicate that the ease to which students can obtain and share information is the primary reason for using SM.

The third factor, professional self-expression, accounted for 59.67% of the variance in HCP. Six items loaded under this factor, with a Cronbach’s alpha of 0.93. These values indicate professional motivations are the primary reason for using SM. For HCS, this factor accounted for 8.8% of the variance. Four items loaded under this factor, with a Cronbach’s alpha of 0.75. Items “to post my resume and/or other work online,” “to help me network with professional contacts,” and “to convey who I am to my colleagues and clients” loaded in both groups.

RQ2 examined the top concerns associated with SM use in a professional setting. Analysis revealed there was no significant difference between HCP and HCS in their top concerns. In fact, the ranking of top concerns for both groups was identical. The top concern for HCP and HCS was patient privacy (68.3% and 70.7%), followed by liability (62.7% and 67.6%), feeling that such interaction is inappropriate (46.5% and 50.5%), just not interested (40.8% and 32.4%), lack of time (38.7% and 29.8%), no way to get paid for these activities (17.6% and 17.0%), and finally the technology is new to me (7.7% and 4.8%).

RQ3 examines the level of awareness HCS and HCP have regarding SM policies at their institutions. A cross tabs analysis suggests that knowledge of SM policies differ between HCS and

HCP ($\chi^2 [2, N = 296] = 23.98, P < 0.001$). In fact the majority of HCS don’t know if their institution has a SM policy (50.9%) while a majority of HCP (52.6%) knows their institution has a policy. Both groups were asked their thoughts regarding their organization having or potentially having SM guidelines.

HCS viewed guidelines positively 68.2% of the time, with statements such as “I agree with having guidelines to make sure to protect yourself and patients” and, “I think it is necessary to ensure patient privacy and accuracy of the information.” While 11.4% viewed guidelines as harmful, including statements such as “I don’t care if there are SM guidelines. What I say on my personal Facebook account is my opinion and not the schools and unfair.” “Who we are outside of school isn’t their concern.”

HCP followed a similar pattern, with 64.6% of comments in favor of SM guidelines. Including “I think it is important to set guidelines so that all staff is on board and knows the boundaries of SM” and “helpful to minimize unintentional violation of patient privacy.” Those against SM policy (12.5%) stated “I hate it. It would limit my first amendment rights” and “another attempt to legislate common sense, another infringement on one’s personal rights.”

RQ4 addresses the necessary steps needed to help minimize the concerns and hesitation associated with utilizing SM in a professional and academic context through trainings and educational materials. Through further analysis of the qualitative responses from each sample, commonalities emerged between the two groups in their concern regarding SM. The first of which was health insurance portability and accountability act (HIPAA) violations and patient privacy. The second is closely associated with the first, in that both parties believe policies are necessary to help educate and guide them in how to effectively use SM.

DISCUSSION

The research examined HCS’ and HCP’ motivations for utilizing SM sites. The current study expands previous U and G research by analyzing not only HCS’ and HCP’ motivations for using SM, but also evaluated concerns associated with SM usage and if these concerns are being addressed through SM policies and education [11]. Results indicated HCS and HCP were using this resource for both social entertainment and a professional self-expression. Yet, the findings also indicated HCS placed more importance on using SM for convenience of information in comparison to HCP. These results support previous findings that HCS are active on SM but may not fully understand the professional self-expression on SM [13,14]. While there are similarities, it is clear that HCS and HCP are in different places in their careers, and it is reflected in their motivations for SM use.

Results indicated no significant difference in concerns for SM usage among HCS and HCP as both listed top concerns of HIPAA and patient privacy violations. However, HCS lacked

awareness of institutional SM policies in comparison to HCP who had higher levels of awareness. A majority of HCS and HCP viewed institutional SM policies as a positive resource. Similar to previous findings, these results suggest additional education and training are needed for both HCS and HCP on proper SM usage [18,24].

The results are important for healthcare institutions because they indicate a need to provide trainings (in person and online) and educational materials (slides, pamphlets, flyers, etc.) regarding the proper use of SM. Healthcare institutions need to encourage HCS and HCP to utilize SM appropriately in both the professional and academic context. As 80% of US internet users search for health information online, it is vital that HCS and HCP use SM in the professional and academic context [25]. Based on these findings, HCS and HCP should use SM to communicate with publics within the medical community such as patients, their current educational institutions, researchers, students, health professionals, and outside health organizations and schools. Sites such as Facebook, blogs, and Twitter could be utilized by both groups for professional and academic purposes such as offer support to those within the medical community, provide patient education, and publish health news [26]. Moreover, LinkedIn and Google+ could be used to build professional relationships, disseminate and acquire health information, and to connect professionally with others.

Results reveal HCS and HCP are most concerned with patient privacy, liability, and inappropriate interactions, which is why it is important for healthcare institutions to offer trainings and educational materials regarding the proper use of SM. Both HCS and HCP agree that SM policies are necessary. Through proper training and educational materials on how to utilize SM, healthcare institutions can help alleviate some of the concerns associated with using SM academically and professionally. In order to address these concerns at the student and professional level, trainings and educational materials explaining acceptable practices need to be offered.

The trainings and educational materials need to address basic SM use such as how to set up an account for personal, professional or academic purposes by the individual. Trainings and educational materials also need to include compliance experts to explain HIPAA requirements and feedback from legal teams to ensure all parties understand the importance of proper SM use. Additionally, an abundance of real-world cases is demonstrating the ramifications to the student, professional, and institution need to be discussed to help better convey what is meant by the topics covered in the training and educational materials. These trainings and educational materials should be offered to encourage SM use among HCS and HCP for professional and academic purposes while also providing education on how to protect themselves and the institution through proper online behaviors.

This research provided an analysis concerning, which SM sites are used by both HCP and HCS to communicate while also examining issues and concerns with SM usage. Though this is an important expansion on previous research, it was not without

its limitations. One limitation of this study was the restrictive sample, obtained from only one major healthcare education institution. This research should be replicated with a larger, more diverse sample across multiple healthcare education institutions and across varying regions to reach more HCP and HCS. While this study fulfills the call for a mixed-method approach to analyzing SM usage, additional in-depth qualitative analysis utilizing focus groups would provide a more exhaustive understanding of HCP and HCS motivations for SM use [11].

The current study provides valuable insight into HCP' and HCS' SM motivations and behaviors. It also expands on issues HCP and HCS have with SM usage and if SM policies effectively address these concerns. As SM is still considered a new internet tool within the health industry, it is essential that future research analyze how those within this industry use this tool and what concerns they may have in regards to SM usage. Additional research should be conducted to examine HCS' and HCP' use, frequency and motivation for utilizing SM sites to educate, communicate, and interact with patients and others in the medical community. Also, future research should be performed to determine if and how patients use SM when seeking health information or connections to health professionals. Further research should examine patient's opinion of HCP' and HCS' usage of SM sites. The current study supplies a needed step in understanding the nuances between HCP' and HCS' motivations and habits related to SM, yet further research is needed to provide a deeper understanding of how SM impacts the health industry.

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