2014

Social Media Use in Health Professions: An Educational Intervention to Prevent the Misuse of Social Media in the Clinical Setting

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SOCIAL MEDIA USE IN HEALTH PROFESSIONS: AN EDUCATIONAL

INTERVENTION TO PREVENT THE MISUSE OF SOCIAL MEDIA IN THE

CLINICAL SETTING

BY

Dorothy Bouldrick

A doctoral project proposal submitted to the faculty of the Medical University of South

Carolina in partial fulfillment of the requirements for the degree Doctor of Health

Administration in the College of Health Professions
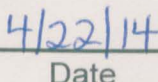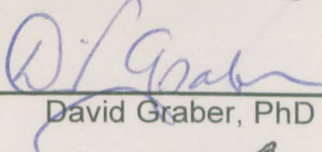
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Abstract of Doctoral Project Report Presented to the
Doctoral Program in Health Administration & Leadership
Medical University of South Carolina
in Partial Fulfillment of the Requirements for the
Degree of Doctor of Health Administration
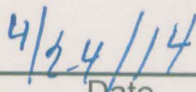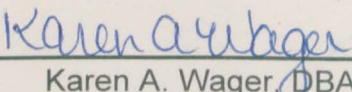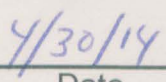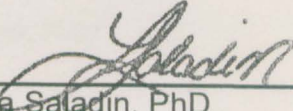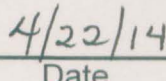
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Abstract

Social media technologies have enormous benefits that facilitate communication, information sharing, and collaboration. The ease with which users can share information instantly has created challenges for the health professions in the form of HIPAA violations via social media. Furthermore, there are few published reports on educational programs aimed at teaching responsible use of social media for students pursuing careers in health professions. This study uses scholarly studies, reports of educational approaches to social media training for health professionals, and legal cases of HIPAA violations via social media to examine social media use in health professions to develop and pilot test a social media educational intervention to be used for training students in health profession appropriate use of social media. An online survey was administered using SurveyMonkey to health profession students (n=25) pursuing careers in nursing, radiology, sonography, medical administration, and medical assisting to examine the extent of social media use by health profession students. Results revealed 23 of 25 (92%) students were actively engaged in social media for communication and consumption of information with Facebook being the preference for students. Participants (n=25) averaged 300 friends with the highest number of 1000 friends reported. In addition, an educational intervention in the form of an eCourse with embedded assessments was developed and deployed to participants using a t test Paired Two Sample Means with statistical significance of $P < .05$ for analysis. Results revealed a significant difference between pretest (M=12.1) and posttest (M=21.5) assessments. These findings suggest educational intervention as a tool for increasing students' knowledge of appropriate social media use in the clinical setting.

Keywords: Digital professionalism; social media; educational intervention; Web 2.0

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CHAPTER 1 INTRODUCTION

Social media and other Web 2.0 application tools such as Facebook, Twitter, YouTube, LinkedIn, blogs and wikis have become a part of people's daily lives, enabling users to stay connected with friends, family, and business associates all over the world. Joosten (2012) reported that by 2011, it was clear that social media was permanently changing the way individuals communicate, in both their private and professional lives.

Social media enable users to build camaraderie between colleagues, obtain knowledge of different subjects, build personal networks of friends and family, stay abreast of current events, and conduct employment searches. Kwoh (2012) noted that employers increasingly use social media to recruit and investigate potential applicants for employment; 44% of recruiters said that condemning an employer on social media is enough to land an applicant in the reject pile.

Social media is indeed a powerful tool with many benefits for its users, but it has also presented challenges for health professions. The discovery of unprofessional content (e.g. patient privacy violations) posted by medical students and health professionals on Facebook, Twitter and other social media sites have been highlighted by news outlets and scholarly articles (Chretien, Goldman, Beckman, & Kind, 2010). Ressler & Glazer (2010, p. 2) noted "issues of privacy, inappropriate sharing of information and professional-personal boundary issues must be addressed. They suggest this rule of thumb when evaluating an item to post: would I be comfortable using this item in a public forum when my employer, patients, and/or colleagues are present?" Thompson & Bell (2007, p. 145)) stated "in the next 5 years, the use of technology and associated privacy concerns will

continue to be a pressing legal issue for higher education…the clinical setting rather than the classroom, poses the highest risk for faculty and institutions."

There is no doubt that the culture of information sharing in an instant and the blending of personal and professional lives via social networking and media sharing sites have changed boundaries between personal and professional lives. For young people, especially students entering the working world, this lack of a clear sense of boundaries between personal and work-related information has raised the need for inclusion of social media training pertaining to striking the balance between personal and professional social media use among students. Chretien et al (2010) stated "finding balance in expression of free speech and medicine's social contract with society may require consensus gathering among all stakeholders: the public, practicing physicians, medical educators, and students" (p. 568).

Protecting patient privacy in the era of social media phenomenon presents continuous challenges for faculty and administrators in health professions programs because there are strict patient privacy laws that govern how protected health information (PHI) is shared among patients and health professionals. The development of professional standards of behavior for health professionals has in the past been based on faculty teaching by example, and on students performing clinical rotations under the supervision of experienced practicing health professionals. However, this approach may not be adequate for teaching issues related to the use of social media, for two reasons. (a) Faculty and professional mentors may be older and have a very different level of use and/or familiarity with social media (b) Health Insurance Portability and Accountability Act (HIPAA) violations via social media involving students may not be well publicized

because of efforts to minimize damage to patients, healthcare providers, students, and the

academic programs. There are relatively few published studies reporting on social media

issues and much of the work is done by a few leaders in the field. Several studies by

Chretien and colleagues (2010) highlight some issues of concern. These authors conducted

a qualitative study on *Medical Students Perspectives on Online Professionalism* and found

that "beyond privacy violations, students had differing views on what they considered

inappropriate to post online (p. 569)." Many students considered posting pictures

depicting intoxication and sexually suggestive material inappropriate while others felt

speaking poorly about physicians, classmates or their medical school was inappropriate.

Other students felt nothing was inappropriate (Chretien et al, 2010). Another study

conducted by Chretien et al (2012) to analyze online posting of unprofessional content

revealed that "82% of deans of student affairs reported that their professionalism policies

do not explicitly mention Internet use. Of the 46 students who reported that their schools

do not have policies to cover student-posted online content, 5 (11%) were developing or

revising existing policy to address this issue at survey time, 23 (50%) were planning to

make changes, 9 (20%) did not feel changes were necessary, and 9 (20%) were not sure"

(p. 1312).

Faculty and students are often reluctant to report negative behaviors, either

because they did not directly observe the behavior or feel uncomfortable with the

confrontation that may arise from reporting an incident (Ainsworth & Szauter, 2006).

Thus, the problems associated with the use of social media by health profession students

are likely understudied, and the formal responses by educational institutions may be

lacking.

Background

Social media and Web 2.0 applications have the potential to connect people, expedite collaboration efforts, and enhance educational experiences through creating and sharing information (Joosten, 2012). Many higher-education professionals are using social media for marketing and communication, but faculty are also adopting it in the teaching and learning process. This is particularly true in online and blended instruction programs, as more educators see value in leveraging Web 2.0 technologies with their students (Tinti-Kane, 2013). There are multiple benefits to social media and Web 2.0 technologies, but the ease with which users share information has created challenges for the health profession. The goal of social media is sharing, but when does sharing become a breach of patient confidentiality? The key point for healthcare professionals and students to remember when using social media is that once patient information is posted or tweeted via social media (intentional or unintentional), there is no way of knowing what happens to the information posted. Simply deleting a post or tweet does not remove the content from cyberspace, nor does it eliminate the breach of patient confidentiality. Deleting a post will remove it from the user's "Page" permanently, but it may still be visible to others if it was shared by someone in the user's online community before it was deleted (Facebook Help Center, 2013). Privacy breaches via social media can be malicious or inadvertent, but in most cases healthcare professionals do not disclose protected health information intentionally (Dimick, 2010). For example, nurses at a healthcare facility used Facebook to provide unauthorized shift change updates to their co-workers. Although they did not use patients' names, enough information was posted so that incoming nurses could prepare for their shift. Other staff of the facility not involved with the shift changes

had friended the Facebook page and could read the information as well (Dimick, 2010).

In this example, the author also mentioned that (HIPAA) patient privacy training was

reinforced by the provider, yet the breach still occurred (p. 1). "The biggest risk with

social media is that many healthcare employees do not realize that posting stories about

nameless patients is still a HIPAA violation (Dimick, 2010, p. 3)." As social media

continues to shape medical education and the public's view of the medical profession,

students need to know how to engage responsibly in social media both personally and

professionally. Future research should examine laws related to patient privacy, instruction

on managing the digital footprint and the capabilities of Web 2.0 technologies (Chretien et

al, 2010). Thus, the purpose of this study is to explore the use of social media and Web 2.0

technologies, examine their use by health profession students and faculty and provide a

basis for social media curricula and policy development to help prevent the misuse of

social media in the clinical setting.

Problem Statement and Objective

Cases involving HIPAA violations via social media are on the rise, however there

are few published reports on educational programs aimed at teaching responsible use of

social media by health profession students. Dimick (2010) revealed that most HIPAA

violations via social media are unintentional. Therefore, a social networking curriculum is

needed to clearly outline appropriate and inappropriate uses of social media and to educate

future healthcare professionals about the ethical issues and personal accountability

required to protect patient privacy.

This study will develop and pilot test a social media eCourse to determine if

educational intervention can be used to increase students overall knowledge of social

media use in the clinical setting. If effective, the course will be used for training health students who are entering clinical rotations.

CHAPTER 2 REVIEW OF LITERATURE

Social media technologies often referred to as Web 2.0, a term coined by Tim O'Reilly (2005) at a conference where he noted that the crash of the dot-com bubble in 2001 marked a turning point for the web, a call to action for the creation of a new web with exciting new applications and websites called Web 2.0. Today, Web 2.0 (blogs, video chats, podcasts, YouTube, wikis, etc.,) allow users to collaborate, interact, and form communities of similar interests "utilizing a platform that consists of various new technologies (mashups, AJAX, user comments) where anyone can create content" (Cormode & Krishnamurthy, 2008. p. 2). In contrast, the traditional Web technologies (Web 1.0 model) such as Encyclopedia Britannica Online is static and users are merely viewers of information with little to no interactivity or ability to create content (Strickland, 2008). Boulas & Wheeler (2007) however, argued that the original intent of the World Wide Web was to share ideas and foster discussions among the scientific community and that Web 2.0 signifies a return to that intention in the ways the web is being used in healthcare and education today.

Research has shown that the healthcare industry and academia, specifically health professions are indeed utilizing social media and Web 2.0 technologies and all of its benefits (Boulas & Wheeler, 2007; Ebner et al., 2010; Junco, et al., 2010). These benefits include increased access to public health information, YouTube's Anatomy & Physiology channels to aid studying, collaborative study groups, patient social and emotional support blogs, and the potential to influence health policy (Chu et al., 2012; Heidelberger, 2011;

Moorehead et al., 2013). However, this connectivity between social media sites and their

audiences has presented challenges for the healthcare industry and academia. Additional

studies by (Bosslet, et al., 2011; Chretien et al.,2011; Moorehead et al., 2013) revealed the

following: (a) cases involving breach of patient confidentiality in the health profession via

social media are on the rise; (b) these challenges have presented a need for social media

curricula and policies in higher education to provide a roadmap for best practices, policies,

and procedures to help prevent social media misuse among health profession students; (c)

the popularity of social media has many advantages for healthcare; (d) limited research on

the impact of social media on HIPAA violations has been conducted.

This literature review is divided into four sections beginning with the definition of

key terms used in social media, the history of social media, types of social media and

social networking sites. The second section provides an overview of the advantages and

disadvantages of social media, along with an examination of social media use in

healthcare and academia. The third section reviewed regulations relevant to social media

use in healthcare and legal cases that involved HIPAA violations via social media. The

fourth section examines how health profession programs approach handling social media

misuse involving students, components needed to develop social media curricula,

guidelines and best practices to prevent inappropriate use of social media in and out of the

clinical setting.

Key Terms and Definitions

Web 2.0. Sharoff (2011) defined Web 2.0 as web applications that facilitate

interactive information sharing such as social networking sites (Facebook) and video-

sharing sites (YouTube) wikis (Wikipedia) and blogs (PatientsLikeMe.com). Personal web

pages, online encyclopedias such as Encyclopedia Britannica and Netscape are examples

of Web 1.0 (O'Reilly, 2005). Those applications have been replaced by wikis, blogs,

Google, and other collaborative sites (e.g. Facebook) referenced today as Web 2.0 (Kaplan

& Haenlein, 2009).

Social Media. Social media is Internet-based applications that build on the ideas

and technological foundations of Web 2.0 that allow users to create and exchange user

generated content (Kaplan & Andreas, 2009). Social media also referred to as social

networking is an online platform or site that focuses on facilitating the building of social

networks or social relations among people who, for example, share interests, or activities.

Mashup. Mashup is linking of records or databases across websites to capture

content. Example: If a user clicks on his or her college's street address and is taken to

Google Maps for driving directions with links to Google Earth to visualize the location

(Cormode & Krishnamurthy, 2008).

Asynchronous JavaScript and XML. AJAX a technique to retrieve data from web

servers asynchronously (occurring at different times), allowing the update of web content

without interfering with the display and behavior of the whole page (Kaplan & Haenlein,

2009).

Protected Health Information. The Health Insurance Portability and

Accountability Act Privacy Rule defines protected health information (PHI) as

individually identifiable health information, held or maintained by a covered entity or its

business associates acting for the covered entity, that is transmitted or maintained in any

form or medium. This health information can relate to:

- the individual's past, present, or future physical or mental health or condition;

- the provision of health care to the individual; or,

- the past, present, or future payment for the provision of health care to the
  individual.

Common identifiers of health information include names, social security numbers, addresses, and birth dates.

Health Insurance Portability and Accountability Act (HIPAA). HIPAA was passed by Congress in 1996. Its privacy regulations require health care providers and organizations to follow the procedures outlined to ensure the security and confidentiality of protected health information (HHS, 2012).

History of Social Media

Social media and its premise of connectivity and information sharing is not a new concept. According to Vallor (2012), before the emergence of Web 2.0 standards, computers were used for decades for forms of social networking. Furthermore, (Barnes, 2001; Turkle, 1995) stated that the U.S. military's Advanced Research Projects Agency Network (ARPANET) in the 1970s had social uses and later it was used for thousands of Internet newsgroups and electronic mailing lists, BBS (bulletin board systems), MUDs (multi-user dungeons), and chat rooms dedicated to an eclectic range of topics and social identities (p. 2). Others credited for the emergence of social media include Tom Truscott and Jim Ellis from Duke University, creators of Usenet in 1979, a worldwide discussion system that allowed users to post public messages via the Internet. Bruce and Susan Abelson founded Open Diary, an early social networking site that brought together online diary writers into one community (Kaplan & Haenlein, 2010, p. 60). Recent trends in

online social networking include the emergence of websites for media sharing (YouTube, Flickr, Hulu), microblogging (Tumblr, Twitter), location-based networking (Foursquare, Loopt, Yelp, Google Latitude), and interest-sharing (Pinterest and Instagram). Web 2.0 technologies evolved specifically to facilitate user-generated, collaborative, and shared Internet content (Vallor, 2012). Correlating evidence supports Vallor's analysis; in fact, a social media study conducted by Pew Research Center (2010) concluded that the emergence of social media is Internet driven. Actually, the rise in the use of social networking sites (SNS) among Internet users has been dramatic. "Seventy-three percent of American teens and 47% of online adults reported using social networking sites in 2010. This is an increase of 37% from 2008" (p. 1). This increase is due largely to new Internet technologies such as digital subscriber lines (DSL) and broadband Internet along with advances in peer-to-peer (P2P) networking (p. 2). Boulos & Wheeler (2007) suggested that these advances in Internet options made it possible for users to communicate, collaborate, and share information with others which is needed for social networking. This growing availability of high speed internet led to the creation of MySpace (2003) and Facebook (2004) and in turn, coined the phrase "social media" as we know it today (Kaplan & Haenlein, 2010).

Types of Social Media

Social media and media-sharing tools such as Twitter, Facebook, Pinterest, LinkedIn, blogs, and wikis have become common means of staying engaged and communicating with friends, family, colleagues, governments, organizations, and businesses around the world. Today, there are many social networking and media-sharing

platforms; however, all forms of social media generally belong to five or six categories

(Kaplan & Haenlein, 2009) listed in Table 1.

Table 2.1. Categories of Social Media

Bookmarking Sites (often categorized with social news)	**Allow uses to save, organize and manage links to various websites and other resources. Users can "tag" links to make content searchable and for sharing with others. Ex. Delicious**
Blog Forums	A (WeBLOG) is a Web site that functions as an online journal that contains dated entries in reverse chronological order (most recent first) about a particular topic. Ex. Medscape Blog
Media Sharing	Users upload and share photos and videos for users to view. Users may also create media sharing profiles and enable followers to comment. Ex. YouTube, Flickr, Instagram
Microblogging	Users communicate by posting short messages and "push" the messages out to their followers. Ex. Twitter
Wikis	a collaborative website whose content can be edited by anyone who has access to it. Ex: Wikipedia
Social Networks	Users connect with others by creating profiles and accepting requests from others to join their network. This is referred to as "friending". These networks are used for both professional and personal sharing and collaboration. Ex. Facebook, LinkedIn
Social News	Users post news articles and links to articles and allow users to vote on the item(s). Voting is the core aspect as the articles with the most votes are displayed most prominently. Ex: Digg, Reddit

Although social media can be categorized into five or six categories, Kaplan &

Haenlein (2010) stated that there is "some confusion among managers and academic

researchers as to what actually should be included under the term social media" (p. 60).

This is evident with texting and email. Kim (2011) stated that "email is not social and that

it is a communication tool that users should not employ for media consumption" (p. 1).

However, Thurlow & Poff (2011) argued that the use of email and text messaging in

"building and maintaining relationships confirms the social function of the technology" (p.

4). It appears that the debate on whether email and texting are categorized as social

media depends largely on one's definition of social media. For example, Davis et al.

(2010) defines social media technology as a vast landscape of software with various uses

which are not specifically limited to social networking (p. 3). For the purpose of this

study, texting and email are included as social media technologies in addition to the more

popular social media technologies listed in Table 2.

Texting. Texting has become a prominent form of communication in today's

society. According to Greene (2012), "it may be the fastest and most efficient means of

sending information in a given situation, especially with factors such as background noise,

spotty wireless network coverage, lack of access to a desktop or laptop, and a flood of e-

mails clogging inboxes" (p. 34).

Email. An electronic mail delivery system that enables users to send, receive, and

store messages sent electronically. Email messages can include more than just text. They

often include photos and confidential documents that can reach the recipient in a matter of

seconds (Yale University, 2012). Therefore, texting and email can easily become a

security issue if they are opened by someone other than the intended recipient.

Table 2.2. Popular Social Networking Technologies

Facebook	Social networking communication tool based on creating relationships between users called "friends". Users are content creators capable of editing and disseminating information to others.
LinkedIn	The world's largest professional network. Users can connect with colleagues and potential employers
Google+	Users share information with others using features like GoogleTalk to send instant messages and a "hangout" which is a video chat session
Foursquare	An app for mobile devices that helps users locate places to visit such as restaurants, movie theatres, hotels, etc.
MySpace	Strong emphasis on music provides members with tools to stay connected by sending mail messages, chatting via instant messaging (IM), sharing photos, and commenting to each other posts.
Ning	Ning is an online service provider that provides a set of services and technology applications that enable users to create their own networks
Twitter	Users communicate with typed messages maximum of 140 characters posted to Twitter profiles which is than fed into a newsfeed where others who follow the user can read the messages known as tweets.
Tumblr	A mircoblogging and social networking platform that allows users to effortlessly share anything.
YouTube	A web-based, audio/video file-sharing service that allows individuals to (a) construct a public or semi-public profile share video content and allow viewers who subscriber to their site to post comments.
Flickr	An online photo sharing application with two main goals (1) provide users with tools to share photos with people in the network or community (2) enable new ways of organizing mass numbers of photos and video. Users may "tag", which is a keyword or category label to help identify photos and

	videos
Pinterest	A content sharing service that allows members to "pin" images, videos and other objects to their pinboard. A "pin" begins with an image or video the user adds to the site.
Real Simple Syndication (RSS) Feeds	Web feed formats used by news sites and blogs to announce recent content updates for journals, newspaper articles, and press releases.
Instagram	An online photo and video sharing social networking site

Note: This table is not inclusive of all social media, but it is a review of social media technologies discussed in this study.

Advantages of Social Media

Research has revealed that social media such as wikis, blogs, podcasts, vodcast (videos) offer many advantages. These advantages include unique and powerful information sharing, and collaborative features capable of enhancing Web-based medical/health education, CPD (Continuing Professional Development), and student engagement (Boulos et al, 2006; Endacott, 2006; Evan, 2007; Ellison et al, 2007; Ebner, 2010; Green & Maxwell, 2010; Chu et al, 2012). In addition to its educational advantages, a report by *The National Research Council* found social media to be beneficial in emergency management services to locate accidents, disperse information, and observe public response to emergency events. Blogs posts are utilized to increase public awareness as severe weather approaches, while alerts or warnings are issued to the public via Twitter and Facebook (National Research Council, 2013). Similarly, the Los Angeles Fire Department (LAFD) uses social media to disseminate and monitor information before, during, and after fire emergencies. In fact, the LAFD engagement of the public through social media was highlighted during an incident in which an explosion was reported at the Los Angeles International Airport. The LAFD found witnesses who

indicated via Foursquare (mobile app for locations) that they were at the terminal where the explosion was reported. Twitter was used to contact the individuals and ask for their assistance. This social communication enabled the public affairs office to provide first responders with information about the event even before they were on the scene (National Research Council, 2013).

The advantages of social media can also be seen in public health such as The Centers for Disease Control (CDC). The CDC (2012) uses social media both to help detect emerging threats and to disseminate information to the public about how to respond. Social media such as Facebook and Twitter posts can provide clues not only about emerging events, but how people, as well as the CDC, are responding to those events and providing information to the public.

Perhaps one of the greatest advantages of social media is its ability to mobilize and increase interest and awareness to social and personal causes. "In the 2008 presidential campaign, the group Doctors for Obama used Facebook to rapidly mobilize thousands of doctors to communicate their views on health policy to the Obama headquarters" (Jain, 2009, p. 2). On the strength of its Facebook presence this group continues to champion its cause today.

Although there are numerous benefits to social media use in academia and healthcare, the misuse of social media by students and healthcare professionals has led to serious HIPAA violations with patients protected health information being tweeted and posted on social networking sites by healthcare professionals and students performing clinical rotations (Chretien et al, 2010; Thompson & Bell, 2007; Lie et al, 2013; Herrin & Ingram, 2012).

Disadvantages of Social Media

There are many advantages to social media use, but researchers have also identified several disadvantages. According to Sorrell (2010), social networking sites provide massive amounts of information that is enticing to those seeking to breach an organization's security, thus causing breaches in intellectual property, inside secrets, and company procedures , which could be leaked to the public. Viruses and malware due to downloading of pictures and videos while using company or academic institutions' network servers can also pose a serious security threat as a result of social media use (Safran, 2010). Other issues of concern cited by Safran (2010) and Sorrell (2010) include inappropriate photo links, rumors posted on sites, or unauthorized business strategy updates that may be leaked online by current or former employees or students. This leaking of information could damage the reputation of a business or academic institution. From a technical aspect, social networks use a huge amount of bandwidth, which is a major concern for business and academia due to cost and access to servers (p. 19). While the literature revealed common disadvantages such as lack of faculty training, student distraction, restrictive organizational policies, privacy challenges, and lack of pedagogy, others discovered social and psychological disadvantages to social media use. Connelly (2011) correlated heavy Internet use with greater impulsivity, less patience, less tenacity and weaker critical thinking skills among users. In her article, "Pros and Cons of Social Media in the Classroom," Lederer (2012) states that social media diverts students' attention, which ultimately disrupts the learning process. The author also lists cyberbullying and discouraging face-to-face communication as cons to social media use. Safran (2012) supports this argument by stating "excessive time spent on social networks

may cause individuals to retreat from actual interaction with others" (p. 19). Although

disadvantages to social media varied, privacy issues were cited as the major disadvantage

to social media use (Chretien et al. 2011; Kung et al.; Safran 2010). Privacy breaches via

social media can lead to huge fines, loss of employment, and loss of business and personal

relationships. In the healthcare industry, it can also lead to loss of trust between patients

and caregivers.

Social Media Use in Healthcare

Social Media use in healthcare is on the rise. Lefebvre & Bornkessel (2013) stated

that there are hundreds of social networking sites created using wikis, blogs, Facebook,

Twitter, and other social media platforms with a focus on health and medical issues. The

most popular health websites reported by eBizMBA (2013) as having millions of users are

Yahoo! Health (21.5 million), National Institutes of Health (20 million), WebMD (19.5

million), MedicineNet (10.5 million), MayoClinic (7 million), and Drugs.com (6 million).

Furthermore, there are apps to track physical activity, blood pressure (BP), follow a diet,

manage stress, etc. Research conducted by Tu (2011) on the impact of information seeking

health information using the Internet revealed that 56% of those surveyed stated that the"

information affected their overall approach to maintaining their health" (p. 2). Torgan &

Cousineau (2012) alluded to such technologies being used as "nudges" or electronic calls

to action, to help patients achieve better outcomes. Further evidence of social media's rise

in healthcare is The Mayo Clinic Center for Social Media. It is a network of healthcare

organizations, hospitals and medical professionals committed to broader and deeper

engagement in social media by hospitals, medical professionals, and patients (MayoClinic,

2010). This commitment to engagement and connectivity between health professionals

and patients has led to The Mayo Clinic having the most popular medical provider channel

on YouTube and more than 450,000 followers on Twitter, as well as an active Facebook

page with over 300,000 connections (MayoClinic.org, 2012). Erik Qualman (2011)

explains "this connectivity extends to positive and negative messages relating to products

and services...and since opinions are in digital format, it is less likely to be misunderstood

or diluted over time" (p. 2).

There is no denying the positive impact social media has in healthcare from wikis,

blogs, Facebook patient support groups such as "Diabetes Daily" and "Trauma Survivors"

each of which boasts thousands of members (Jain, 2009). However, widespread use of

social media has presented challenges and raised privacy concerns among healthcare

professionals, researchers and educators charged with preparing future clinicians for a

more social healthcare system. Perhaps George (2011) explained it best when he stated the

following:

> The culture of medicine (which tends to value privacy, confidentiality, one-on-one
>
> interactions, and professional conduct) and that of social media (which tends to
>
> value sharing and openness, connection, transparency, and informality) make
>
> integration of the two fields a distinct challenge. (p. 215)

These challenges are emerging in the health professions. For example, Gutheil (2005)

argues that social networking can create difficulties in maintaining a proper balance that

may lead to boundary issues in the doctor-patient relationship. He defined "boundary

crossing as a transient, nonexploitative deviation from the standard of care, which is minor

and at times beneficial in the treatment" (p. 41). Meanwhile, Endacott et al. (2006)

expressed concern for another aspect of boundary crossing referred to as dual

relationships, which involves several separate relationships with the same individual. A

dual relationship occurs when a physician has an established online professional

relationship with a patient and that relationship evolves into another relationship unrelated

to patient care (Moubarek et al., 2011; Gabbard &Nadelson, 1995). Concerns of the

impact social media have on the doctor-patient relationship were further supported by

Moubarak et al (2011). Their study of 405 residents and fellows at the Rouen University

Hospital revealed 88 students (48%) believed that the doctor-patient relationship would be

altered if patients discovered that their doctor had a Facebook account, but 139 (76%)

considered that it would change only if the patient had open access to their doctor's

profile, independent of its content. In conclusion, Moubarak et al (2011) speculated that

the "insufficient privacy protection via social media may have an impact on the doctor-

patient relationship" (p.102). Additional privacy challenges were expressed by Herrin &

Ingram (2012) regarding the user's ability to post photographs and tag or identify people

appearing in the photos. "Healthcare providers must guard against online posting of

photos of patients, particularly where those photos depict patients inside a healthcare

facility (e.g., hospital room) or receiving treatment" (p. 276).

Social Media Use in Health Professional Education

Social media technology such as Facebook and Twitter is widely used by students

entering institutions of higher learning today. In fact, "The Higher Education Research

Institute (HERI 2007) reported that 94% of first year college students use social

networking websites" (p. 2). This is evident in medical and health professional education.

A cross sectional analysis conducted by Thompson et al., (2011) of medical students'

social media use revealed that "almost half (49.8% or n=1023 of 2053) had Facebook

profiles" (p. 1). Health profession students are using social media in record numbers as

well, with 80% of first year students having reported using Facebook in a study conducted by Giordano & Giordano (2011).

As health professional education transition to a more collaborative, team-based approach, so do pedagogy and the use of social media to actively engage students. Studies conducted by Heiberger & Harper (2008); Junco, Heiberger & Loken, (2010) revealed that social media such as Twitter, blogs, and wikis impacted student engagement. In fact, Heiberger & Harper (2008) claimed frequent users of social networking websites participated more often and spent more time in campus organizations than less frequent users (p. 2). While Junco et al (2010) found that using Twitter in educationally relevant ways increased student engagement and improved grades (p. 1).

Advantages of blogs in health professional education include: (a) the ability of audience members to share comments and engage in active feedback of material, and (b) the ease of placing shared learning objectives such as videos, lecture captures (LC), and quizzes onto a single easy-to-reference site (Chu et al., 2012). Other advantages to social media technologies are that students come to college with "existing familiarity to social media, most tools are free, simple to use and encourage collaboration" (George, et al, 2013, p. 2).

Faculty Use. A survey of social media use conducted by Pearson (2012) revealed that younger faculty members are more likely to embrace social media in their instruction than older faculty. "Forty-one percent of faculty under the age of 35 reported use of social media in instruction compared to 30 percent for those over the age of 55" (p. 15). Furthermore, the survey revealed that "faculty in the humanities and arts professions, applied sciences, and social sciences use social media at higher rates that those in natural

sciences or mathematics and computer science" (p. 15). However, Pearson's "2013 Social Media Use in Higher Education" revealed a different pattern emergence with faculty in the age group (35 to 44 and 45 to 54) having higher rates of social media use for teaching (p. 12).

There are few studies that examine the use of social media by health profession faculty; however, there is evidence of its use. For example, Southern Baptist University in Missouri offers a nursing informatics course for which they include social media education. The students are required to do all work online, attend at least one live chat, and create their own Twitter accounts and blogs. The instructor for the course believed that "it is essential for nurses to understand and be familiar with social media," (Nurse Educators and Social Media, 2010, p. 5). Another example is in an online Woman's Health course, the instructor provides students with descriptive words (tags) to search for YouTube videos pertaining to women's health issues (Sharoff, 2011). Once students have located links to relevant videos, students collaborate, discuss the specific video chosen and post a summary of the group's comments to the discussion board, along with a link to the video. George & Delasega (2011) found that some health profession faculty members have utilized blogs in their courses to document student clinical experiences. Instead of a traditional journal, students post their clinical experiences on a course blog to share and collaborate with other students performing clinical rotations. Faculty should set clear guidelines and monitor posts for possible HIPAA Patient Privacy violations to enrich the students' learning experience.

Faculty who are using social media for instruction are equipped with new resources for engaging students, especially those pursuing careers in allied health and other health professions which fosters a culture of collaboration (Chu et al., 2012).

Student Use. Social media use by students has presented the need for health profession programs to respond to the realities brought by a new generation of learners. The "box" of the classroom will not contain or meet the needs of the new global culture that the Internet has spawned (Gonick, 2006, p.68). A study conducted by Chu et al. (2012) refers to this new generation of learners as Millennials. Millennials, also referred to as Generation Y, the Net Generation, and Digital Natives, are those individuals born between 1982 and the early 2000s. These learners are highly digital, constantly connected to others and immediate in nature. They have shorter attention spans; crave interactivity, and struggle with reflective endeavors. Activities which involve first-person learning in social networks and communities and the use of multiple media will have a higher probability of engaging these learners (p. 2).

According to the Pew study (2010), 90 percent of adult Millennials use the Internet. Three-quarters of them have created a social networking profile. Fifty-five percent of adult Millennials who have their own social networking profile visit a social networking site at least once a day.

Challenges. Research has revealed that social media technologies have enormous benefits for facilitating the learning process (George et al., 2013; Lefebvre et al., 2013; Chu et al., 2009); however, it has not evolved without its challenges. Thompson & Bell (2007) argued that the potential abuse of social media by students in the clinical setting could become legal issues for higher education. Additional concerns among faculty and

administrators include the following (a) time needed to learn appropriate uses and

pedagogy to properly integrate social media into the curriculum (b) integrity of student

submissions (c) effectiveness of social media technology, "some believe it serves only as a

distraction that will impede academic achievement" (Davis et al., 2010) (d) issues of

privacy, phishing, and identify theft (Tinti-Kane, 2013; Safran, 2010; Staddon, 2009).

Safran (2010) reiterates frequent privacy breaches present major challenges largely due to

social media's community building features which suggest new contacts or ways of

"friending" for the user. "These can easily turn into privacy traps" (p. 116). Proposals to

address these privacy concerns include online confidentiality agreements between users

and an SNS; call for state-of-the-art privacy protection technology safeguards to protect

user information from unwarranted uses; de-identifying information so that sensitive data

cannot be detected (Lefebvre et al., 2013).

To harness the advantages social media provide for enhancing students' learning

experiences, users must be knowledgeable of both its benefits and challenges. Proponents

of social media use in academia boast its enhancement of student engagement and

collaboration, while critics argue issues such as student distraction, cyber bullying,

infrastructure, lack of pedagogy, privacy issues, and breakdown in communication skills

as reasons for minimizing social media use (Burgoon & Walter, 1996; Staddon, 2009;

Turkle, 2010). In fact, Turtle (2010) concludes that in corporations, among friends, and

within academic departments, people readily admit to the preference of leaving a

voicemail or sending an e-mail rather than a face-to-face conversation (p. 14).

Regardless of which side of the debate educators may find themselves, it is

essential to choose wisely. According to Selwyn (2008) "Despite the immediate appeal of

applications, it is necessary to take time to reflect carefully upon the nature of these applications as online learning environments and question the learning affordances they offer in practice" (p. 93).

Regulations of Relevance to Social Media Use

The widespread use of social media with its emphasis on collecting and dissemination has presented growing frequency of criminal trials and judicial ethics scandals (Herrin & Ingram, 2012). In healthcare, providers are challenged with how to prevent the unauthorized disclosure of protected health information (Herrin & Ingram, 2012). Protected health information is defined by the Department of Health and Human Services (HHS) as identifiable health information, held or maintained by a covered entity or its business associates acting for the covered entity that is transmitted or maintained in any form or medium. In layman's terms, it is individually identifiable health information that can be linked to a particular person, backgrounds, or real-life connections (Mashable, 2013).This identifiable information can relate to:

- the individual's past, present or future physical or mental health or condition;
- the provision of health care to the individual, or, the past, present, or future payment for the provision of health care to the individual.

Common identifiers of health information include names, social security numbers, addresses, and birth dates. Unauthorized disclosure of this information containing identifiers can lead to a breach of HIPAA's Patient Privacy Rule (HHS, 2012). A breach is impermissible use or disclosure under the Privacy Rule that compromises the security of privacy of the protected health information such that the use of disclosure poses a

significant risk of financial, reputational, or other harm to the affected individual. There are three exceptions to this definition:

1. Unintentional acquisition, access, or use of protected health information (PHI) by a workforce member acting under the authority of a covered entity or business associate;

2. Inadvertent disclosure of protected health information from a person authorized to access the PHI at a covered entity or business associate to another person authorized to access PHI at the covered entity or business associate;

3. The covered entity or business associate has a good faith belief that the unauthorized individual, to whom the impermissible disclosure was made, would not have been able to retain the information (HHS, 2012).

The rule further states that covered entities and business associates must only provide the required notification if the breach involved *unsecured protected health information* (HHS, 2009). Unsecured protected health information is information that has not been encrypted, or made unreadable by a party who should not have access to the information. Most Security Rule violations on Social Media sites involve *secured protected health information* by healthcare workers who have authorized and some with non-authorized access to protected health information. Users of social media should be aware of HIPAA's Privacy Rule de-identification methods for protecting patient information. The Privacy Rule provides two de-identification methods: (a) a formal determination by a qualified expert; or (b) the removal of specified individual identifiers as well as absence of actual knowledge by the covered entity that the remaining information could be used alone or in combination with other information to identify the individual (HHS, 2012).

"Although the risk is small, it is not zero, and there is a possibility that de-identified data could be linked back to the identity of the patient to which it corresponds" (HHS, 2012, p. 1.3). Consequently, it is imperative that healthcare providers ensure that text messaging is in compliance with HIPAA's Security Rule because "many social media users access their accounts using mobile phones and other mobile devices" (Dimick, 2010). The Guidance on Risk Analysis Requirements under the HIPAA Security Rule (2010) states that "all e-PHI created, received, maintained or transmitted by an organization is subject to the Security Rule...and requires entities to evaluate risks and vulnerabilities in their environment and implement reasonable and appropriate security measures to protect against reasonably anticipated threats or hazards to the security or integrity of ePHI" (p. 1).

The Joint Commission (2012) in response to a frequently asked question regarding whether it is acceptable for physicians and licensed independent practitioners and other practitioners to text orders for patients to the hospital or other healthcare setting responded by stating, "It is not acceptable for physicians or licensed independent practitioners to text orders for patients to the hospital or other healthcare setting. This method provides no ability to verify the identity of the person sending the text and there is no way to keep the original message as validation of what is entered into the medical record. "Studies must be conducted to determine devices used to create the electronic protected health information (ePHI), the type of information being communicated, and security levels of devices" (p. 1). Where and how is the information being stored? For example, what happens to the text messages once they are sent? Where is this information stored? Is it encrypted? Most text messages are stored on user's cell phones where no password is required to view the

messages, so anyone who has access to the user's phone will also have access to the text messages if not deleted by the user.

The National Labor Review Board (NLRB, 2012) in its review of several firings regarding social media found some provisions of employers' social media policies to be unlawful. "Provisions are found to be unlawful when they interfere with the rights of employees under the *National Labor Relations Act*, such as the right to discuss wages and working conditions with co-workers" (p. 2). Broad restrictions that employers normally include in social media policies such as forbidding employees to post any comments that may provide a negative image of the company, or posting negative comments regarding management or coworkers that will result in firing has been deemed as illegal by the National Labor Review Board (NLRB). However, it is permissible for employers to issue disciplinary actions or firing a single employee for posting negative comments about the employer or work conditions on the Internet. In a report of the Acting General Counsel, a case regarding an employer's social media policy stated the following:

> The Employer, a hospital, issues a social media, blogging, and social networking policy which was later incorporated into the employer's handbook. Rule 4 of the policy prohibited employees from using any social media that may violate, compromise, or disregard the rights and reasonable expectations as to privacy or confidentiality of any person or entity. Rule 5 prohibited any communication or post that constitutes embarrassment, harassment or defamation of the hospital or of any hospital employee, officer, and board member representative or staff member. Rule 6 contained a similar prohibition against statements that lack truthfulness or

that might damage the reputation of goodwill of the hospital, its staff, or

employees. (National Labor Relations Board, 2011. p. 1)

In this case, an employee of a hospital posted a comment on her Facebook wall

complaining about a nurse with a pattern of frequent absences who had called in sick that

weekend. The post referred to the disruptive nature the frequent absences had on the

workload that weekend. The employee ended the post asking anyone with details to

contact her. One of her Facebook friends gave a copy of the posting to their employer.

The employee was terminated because she spoke negatively about the hospital in violation

of the employer's social media policy. NLRB concluded that "the social media policy was

overly broad as employees could reasonably construe them to prohibit protected conduct"

(p. 3). NLRB further concluded the social media policy "provided no definition or

guidance as to what the Employer considered to be private or confidential" ,therefore it

could reasonably be "interpreted as prohibiting protected employee discussion of wages

and other terms and conditions of employment and was therefore overbroad" (NLRB, p.

2). An email inquiry to NLRB regarding student liability for social media activity while

performing clinical rotations prompted the following response from Nancy Cleeland,

NLRB Director of Public Affairs, "the NLRB's rules on social media policies would not

apply to issues involving students. Our agency protects the rights of workers in the private

sector to engage in union or group activity, and that is the limit of our involvement in this

realm."

HIPAA Violations via Social Media

There have been several well-publicized cases of HIPAA violations regarding

comments made on social media sites such as Facebook and Twitter. According to

Cromwell Communications (2011), "these comments did not include patient or resident names, but rather snippets of information regarding clinical details, window of time, city, or such enough information for some people to identify the unnamed; that can be enough to violate HIPAA" (p. 1).

The following cases were selected based on violations of HIPAA's Patient Privacy Rule that occurred via social media that led to costly fines for the healthcare providers, disciplinary actions and even termination of employment for some healthcare professionals.

Case 1. A 60-year-old man arrived at St. Mary Medical Centers in Long Beach, California with multiple stab wounds. His throat was slashed severely to the point of near decapitation. Instead of focusing on the patient's treatment, two nurses and other hospital staff snapped photos of the dying man and posted them on Facebook. This resulted in termination of four staff members and three were disciplined for breach of patient information via social media (American Society of Registered Nurses, 2010).

Case 2. Allina Hospitals terminated 32 employees, 15 of whom were nurses for unauthorized access to patient information. A patient overdosed and died after taking a drug called 2C-E that can be purchased on the Internet. Apparently the drug had been distributed at a spring break party in the area (healthleaders media, 2011).

Case 3. In 2010, Tri-City Hospital discovered that some of their employees used social media to post personal discussions concerning hospital patients. The California Department of Public Health launched an investigation to determine if there were HIPAA violations (Stickney, 2010).

Case 4. One of four nursing students was dismissed from Johnson County Community College in Kansas for posting photos of themselves in a lab with a human placenta on Facebook. The student sued the institution and several faculty and staff members in federal court and argued that her instructor had given her implicit permission to post the photos and that the college had violated her due-process rights in dismissing her. College officials stated that the instructor had not known the photos would be posted and that the students' actions showed not only poor judgment, but lack of respect and a complete disregard for the ethical standards of the nursing profession. The judge ruled that the college had not established that the students' action was a clear violation of professional conduct. The students involved were reinstated to the nursing program (Chronicle of Higher Education, 2011).

Case 5. Conaboy (Boston Globe, 2011) reported that an emergency room doctor was "fired from a hospital in Boston, Massachusetts and reprimanded by the state medical board for posting information online about a trauma patient" (p. 1). The doctor's posting did not include the patient's name, but she wrote enough that others in the community could identify the patient.

Case 6. A Twitter case involving a tweet in Jackson, Mississippi resulted in an administrative assistant for the University Medical Center Nursing School losing her job. The administrative assistant tweeted her dislike for the Governor's failure to schedule appointments like all other patients. In her tweet she claimed the Governor had the facility staffed with 15-20 people on a Saturday when it is usually closed to perform his checkup. She was terminated for HIPAA violations (Straw, 2009).

Social Media Policies

Incidences of unprofessional conduct via social media by students and health professionals that resulted in breaches in patient confidentiality laws has prompted a clarion call for social media policies to be implemented by institutions of higher learning (Chretien et al., 2012; Joosten, 2012; Junco, 2011;Thompson & Bell, 2007) . The need is expressed greatest among medical and health professions faculty. Thompson & Bell (2007) argues that policies need to be developed to address privacy issues associated with technology use in the clinical setting. If not, "the potential for inappropriate use by students in the clinical setting will pose the highest risk for faculty and academic institutions because students are not always aware of the legal constraints associated with the misuse of technology" (p. 146). On the other hand, Herrin & Ingram (2012) emphasized that HIPAA violations are inevitable unless healthcare providers implement and enforce detailed social networking policies. Subsequently, *The National Council of State Boards of Nursing* (2011) raised concerns that health care organizations social media policies govern workplace use of social media but are void of guidelines for social media use outside of the workplace. Dimick (2010) suggested "employees can just as easily post confidential information about patients from their home computer or personal mobile devices" (p. 2). This may led to continuous increases of HIPAA violations via social media and cause healthcare professionals and students to face serious consequences for inappropriate use of social media. Therefore, social media policies should include guidelines pertaining appropriate use both in and outside of the clinical setting. According to Petroff (2010), the policies must have provisions that clearly define rules for protecting

patient confidentiality without infringing upon the First Amendments rights to free speech for the user that include the following components:

- authenticity and transparency,

- protecting confidential information,

- respecting copyrights,

- developing a social media strategy,

- respecting your audience, and

- obeying terms of service on specific platforms. (p. 2)

In developing social media policies for higher education, there is no need to start from scratch. In fact, *The National Council of State Boards of Nursing* (NCSBN) has collaborated with the *American Nurses Association* (ANA) to create social media guidelines to foster professional responsibility. The guidelines include all of the key components needed to properly educate students and health professionals on social media use in and out of the clinical setting. Similarly, the *American Medical Association* (2010) has adopted a new policy aimed at helping physicians to maintain a positive online presence and preserve the integrity of the patient-physician relationship (p. 1). The new policy (which incorporates many of the same components as the NCSBN and ANA) encourages physicians to:

Table 2.3. American Medical Association Social Media Policy

Use privacy settings to safeguard personal information and content to the fullest extent possible on social networking sites.
Routinely monitor their own Internet presence to ensure that the personal and professional information on their own sites and content posted about them by others is

accurate and appropriate.
Maintain appropriate boundaries when interacting with patients online and ensure patient privacy and confidentiality are maintained.
Consider separating personal and professional content online.
Recognize that actions online and content posted can negatively affect their reputations among patients and colleagues, and may even have consequences for their medical careers
Note. Adopted from the "American Medical Association Social Media Policy", 2010, http://www.ama-assn.org/ama/pub/news/news/social-media-policy.page

These policies can be used in allied health and other health profession programs as professional development resources to help prevent the misuse of social media personally and professionally.

Curriculum Development for Social Media Training

As social media becomes more prevalent, educators recognize the need for a curriculum but struggle with the content that should be included in a social media curriculum to prevent HIPAA violations. Kern & Thomas (2009) suggests that since social media phenomena are tied to human behavior, it is necessary to know not only how social media is used by students, academic institutions, healthcare facilities, and healthcare professionals, but it's important to know what they think about social media use overall (p. 405). They also stated that curriculum developers need to consider the following factors:

1. *Predisposing factors*: students' attitudes about privacy, knowledge of HIPAA, and personal social media experience.

2. *Enabling factors:* peer-to-peer interaction, lack of clear and concise social media policies that includes disciplinary actions for offenders in academic health profession programs, lack of education in how to use social media in health profession preparatory programs, lack of knowledge among administrators and faculty about social media use by students.

3. *Reinforcing factors:* clear disciplinary actions for offenders that include educational intervention to correct the behavior for first time violators and possible program dismissal for repeat violators (p. 405).

Therefore, educational intervention is more likely to be successful if social media use and behavior patterns associated with inappropriate use are examined before creating or integrating it into curricula. Lie et al (2013) conducted research to examine medical students' attitudes and behaviors related to online social media professionalism after educational intervention. They concluded that educational intervention led to thoughtful reflection, increased awareness and intention to edit and monitor future online presence (p. 242). "Forty percent of students (46/115) responded that they made a significant change in their online presence after the session" (p. 244). While the results were promising, scarcity of literature on educational intervention leaves room for further research to evaluate the significance of its impact. Moving forward, all of these factors will need to be considered to develop curricula that will raise awareness and deter undesired behavior associated with the increase of patient privacy breaches via social media. However, Kern & Thomas also warns that "educational intervention by itself usually cannot solve all aspects of a complex healthcare problem" (p. 498). Therefore, disciplinary actions must be enforced by faculty and administrators to address unprofessional conduct via social media.

Furthermore, Thompson, Black, Duff, Saliba, and Dawson (2011) stated suggested that a formal social media curriculum along with adequate social media policies needs to be top priority for academic institutions (p. 2). In support of that sentiment, Chretien et al. (2010) have identified key components needed in a social media curriculum outlined in Table 2.4.

Table 2.4. Key Components Needed for Social Media Curriculum

Overview of social media and Web 2.0 technologies
Professionalism in the era of social media
Guidelines for social media use in and out of the professional setting
Inclusion of do's and don'ts of social media use combined with HIPAA training
How to manage privacy settings for social media platforms such as Facebook, LinkedIn
Overview and assessment of a user's digital footprint
Review of the college/university social media use policy (if any)
Clear policies and procedures to give students
Examples of best practices for social media use

CHAPTER 3 METHODOLOGY

Study Design

In this study a two-stage approach was used that involved the following:

1) Extraction of evidence from the literature on legal cases involving HIPAA violations via social media

2) A review of scholarly studies and reports of educational approaches to social media training for health professionals.

This data was used to develop and pilot an eCourse utilizing course slides that includes course learning objectives and pretest-posttest assessments for social media training of 25 health profession students preparing for clinical rotations.

In the development and pilot test of the course the following methodology was used:

- **Step 1a:** Examined the literature to identify and analyze key components and problems that have been linked to social media use in health professions

- **Step 1b:** Developed an evidence table of key issues identified in the scientific literature to identify key points to be included in the course content.

- **Step 1c:** The researcher surveyed a convenience sample of 25 health profession students on their social media use. The survey was deployed electronically using SurveyMonkey

- **Step 2**: A review of social media training curricula published in the scientific literature was reviewed and content currently available was summarized in a table similar to the approach used for the review of literature.

- **Step 3a**: Measurable course objectives were developed for a social media training course.

- **Step 3b**: Course content and assessment questions were distributed to nursing instructors for input and feedback and refined for validity and reliability before deployment to students.

- **Step 3c**: Course content and assessments were distributed to nursing faculty for input, feedback, and refined for validity and reliability before deployment to students.

- **Step 4**: The information gathered was used to develop and pilot test an eCourse integrated into an online teaching platform and administered to the convenience sample of 25 health profession students

- **Step 5:** Pretest-Posttest data of student learning were collected for further course modification and refinement. Two test dates were schedule within a two month time frame to allow time for students to complete the course and its assessments.

The test was deployed online using a LMS. The students were given two hours to complete the course to allow time to visit web links to additional content embedded within the course. The pretest and posttest consisted of 12 multiple-choice questions scored at two points each for a total of 24 points. The questions were created based on past student disciplinary actions for social media infractions while in the clinical setting and scenarios based on legal cases from the literature to assess students' knowledge of HIPAA's Patient Privacy Rule, the digital footprint, the impact of social media in the clinical setting, and students' role in protecting patient privacy via social media. The pretest-posttest questions were identical and a t-test Paired Two Sample for Means was used to compare students' performance before and after completing the course to assess the impact of students' knowledge of social media.

Instrument

- **Survey**: Current use of social media was measured using an existing published survey (Kung et al., 2012; Chretien et al., 2010) (Appendix A).

- **eCourse Pretest-Posttest Assessment**: The study population was tested twice using the same questions for the pretest and posttest assessments.

eCourse Content

The eCourse consisted of the following components:

- Review of HIPAA regulations relevant to social media

- An examination of ethical issues resulting from social media use

- Review legal cases of HIPAA violations to develop a clear understanding of HIPAA breaches via social media

- Measured students understanding using assessments such as multiple choice questions based on examples, scenarios, different types of social media

- A pretest-posttest design was used to assess effectiveness of course content.

Study Population

The researcher pilot tested the course using 25 volunteer health profession students. Study students included current first and second year health profession students enrolled in medical assisting, diagnostic sonography, licensed practical nursing (LPN), associate degree nursing (ADN) nursing programs, and administrative professionals. The study's setting was a college located in South Carolina.

Pre-Post Test Approach

Learning objective driven test questions were administered to measure knowledge improvement based on pretest-posttest results. Additional data was collected from students on ease of program navigation, clarity of questions, and length of time required to complete the educational session.

Data Collection and Analysis

Data collection and analysis for the survey was compiled using *Survey Monkey Summary Data Analysis* tools to calculate and analyze response percentages, response counts, and open-ended and closed-ended responses.

A *Two-tailed Paired t-test* was used to compare students' pretest and posttest performance to determine improvement of student learning outcomes. Microsoft Excel 2010 software was used to analyze the data.

CHAPTER 4 RESULTS

Introduction

As stated in Chapter 1, this study examined social media use in health professions to determine if an educational intervention would be effective in increasing students' knowledge of appropriate use of social media in the clinical setting. This chapter outlines the results of the survey deployed to students pursuing careers in health profession to establish basic characteristics such as types of social media technology used, frequency, content posted and viewed on social media sites) of health profession students' use of social media. This will be followed by a statistical analysis of survey responses and the pretest-posttest findings from a measurable outcomes based social media eCourse developed and pilot tested for this study.

Descriptive Statistics

The research population was comprised of 25 volunteer health profession students

enrolled in medical assisting, diagnostic sonography, licensed practical nursing (LPN),

associate degree nursing (ADN) nursing programs, and administrative professionals as

mentioned in the methodology chapter. This study did not have a target age group,

however the age distribution of the research population would suggest that social media

technologies appeals greatly to the younger generation of health professions students

(Figure 4.1).. The health profession distribution can be seen in Figure 4.2. Gender

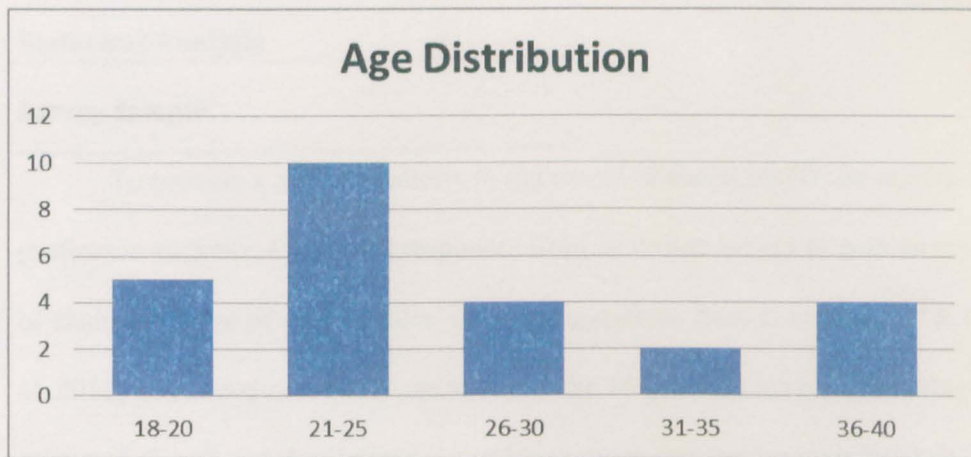distribution was not included in this research.

Figure 4.1. Age Distribution

Health Profession Distribution
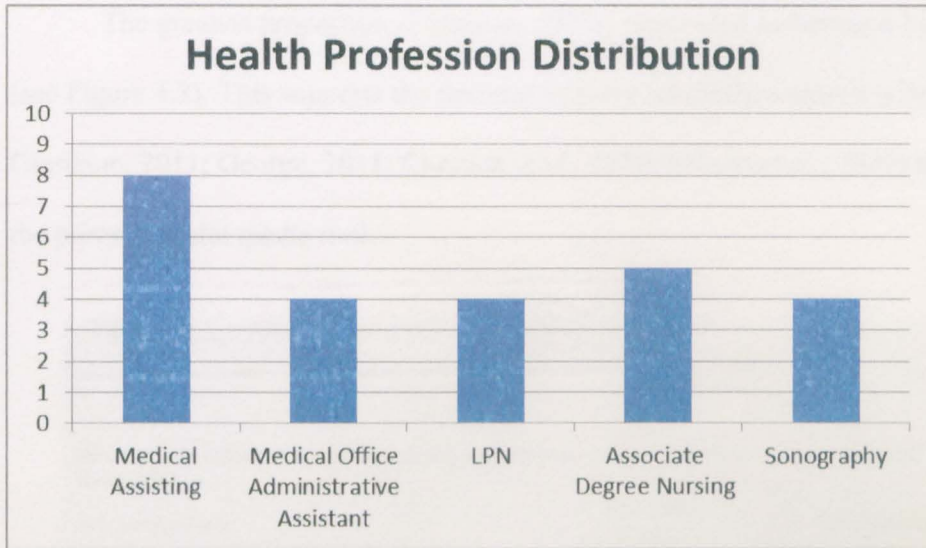
Figure 4.2. Health Profession Distribution

Statistical Analysis

Survey Sample

To provide a level of validity to the extent of social media use among health profession students, I analyzed responses from an online survey to gain an understanding of students' usage of social media. I adapted questions from (Lie et al, 2013, Chretien et al, 2010) and added new questions to create the 10 question survey consisting of both open and closed ended questions. I combined responses for "extremely likely" and "very likely" and "extremely often" and "very often". A total of 25 surveys were completed and returned by students (100% response rate). The responses were analyzed using a combination of Survey Monkey's statistical analysis tools to calculate and analyze response percentages, response counts for the survey. Microsoft Excel was used to provide descriptive statistics to create graphical displays to help explain the relationship between the variables examined in this study.

The greatest proportion of students (92%) responded as having a Facebook account

(see Figure 4.3). This supports the findings of prior scholarly research (Giordano &

Giordano, 2011; George, 2011; Chretien et al., 2010; Ellison et al., 2007) that Facebook is

the primary social media tool.

Which of the following social networking websites do you currently have an account with? (Check all that apply)		
Answer Options	Response Percent	Response Count
Bebo	0.0%	0
Facebook	92.0%	23
Google+	8.0%	2
Myspace	16.0%	4
Tagged	4.0%	1
Twitter	36.0%	9
Other (please specify)	24.0%	6
	answered question	25
	skipped question	0

Figure 4.3. Social Networking Websites used by Study Population

The next two questions (Figure 4.4) sought to establish the frequency of Facebook usage

to determine risk factors in the form of the potential number of unauthorized individuals

(friends) that could have access to patient's protected health information if posted by any

of the students (see Figure 4.5). The results displayed below revealed that 16 of 25

students (64%) use Facebook daily. The students' averaged over 300 Facebook friends

with the highest number of 1000 social media friends reported. Two students responded

that they do not use social media at all.
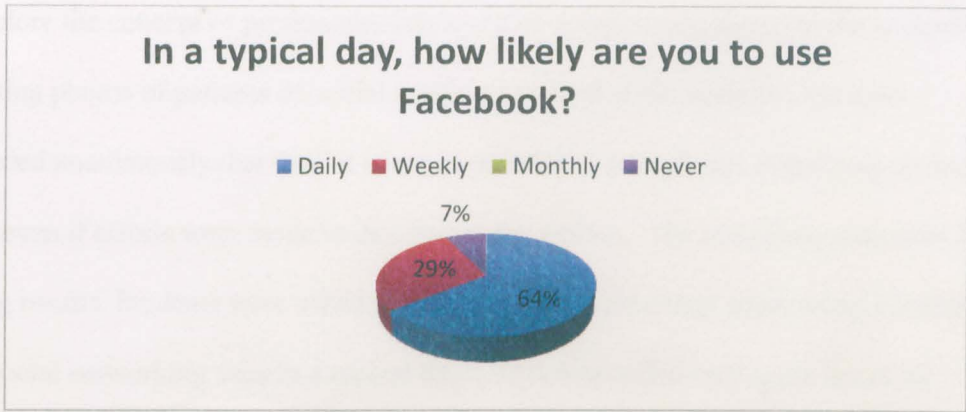
In a typical day, how likely are you to use Facebook?

Daily Weekly Monthly Never

7%

29%

64%

Figure 4.4. Frequency of Facebook Usage

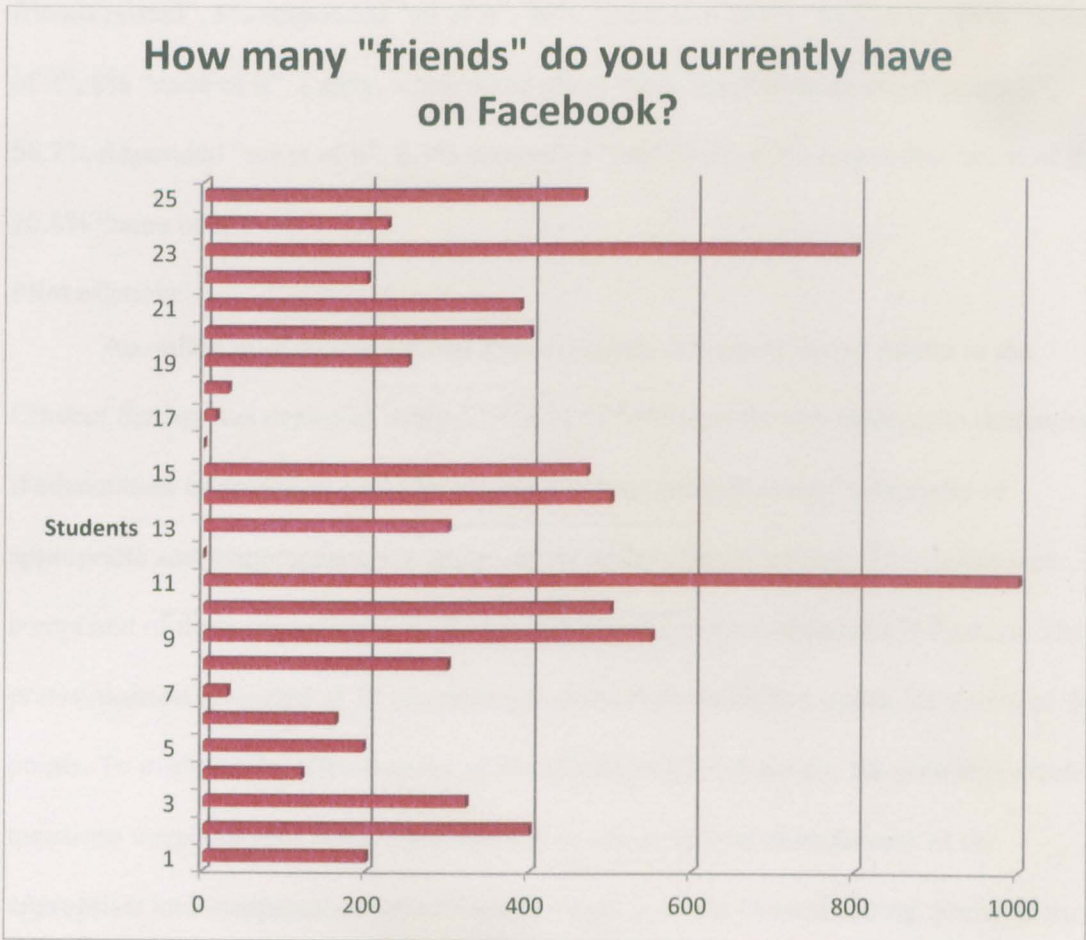## How many "friends" do you currently have on Facebook?

Figure 4.5. Facebook Friends per Student

To explore the concept of professionalism a yes/no question pertaining to the acceptability

of posting photos of patients on social media was asked of the students. Students

responded unanimously that "no" it is not acceptable to post photos of patients on social

media even if efforts were made to de-identify the patient. The remaining questions had

varying results. Students were asked about " how much time they spent using Facebook or

other social networking sites in a typical day", 52% responded they spent hours on

Facebook or other social networking sites, some students selected both answers of "hours"

and" minutes" (see Appendix B). For "how much time do you spend looking at what your

friends posted", 8% responded "all of it", 40% "most of it",64% "half of it", 24% "some

of it", 8% "none of it". Lastly, when asked about "time spent posting about yourself",

66.7% responded "some of it", 8.3% responded "half of it", 4.2% responded "most of it",

20.8% "none of it".

Pilot eCourse

An online pilot course entitled *Preventing the Misuse of Social Media in the*

Clinical Setting was deployed using a LMS to 25 health profession students to determine

if educational intervention could be effective in increasing students' awareness of

appropriate and inappropriate use social media in the clinical setting. The course was

comprised of three components (1) Pretest (2) PowerPoint presentation (3) Posttest. The

pretest/posttest consisted of 12 identical questions each worth two points for a total of 24

points. To evaluate the effectiveness of the educational intervention, the pretest/posttest

questions were analyzed using a paired t test to assess increased awareness of the

appropriate and inappropriate uses of social media in of the clinical setting. Some of the

legal cases included in this study revealed that privacy breaches occurred when students

and healthcare professionals were not on the job, best practices for social media use was

included in the course for in and out of the clinical setting.   The course was deployed

online using a LMS, 20 of 25 (80%) students completed the eCourse by the end of the

study.

eCourse Test Results

The pretest and posttest questions were identical to quantify increased awareness

of appropriate social media use in the clinical setting. The pretest results revealed that

students scored (M=12.1) on the assessment. However, posttest results were significantly

higher (M=21.5) Test results were analyzed using a two-tail t test Paired Two Sample for

Means at 0.05 significance level (see Figure 4.7). All participants completed clinical

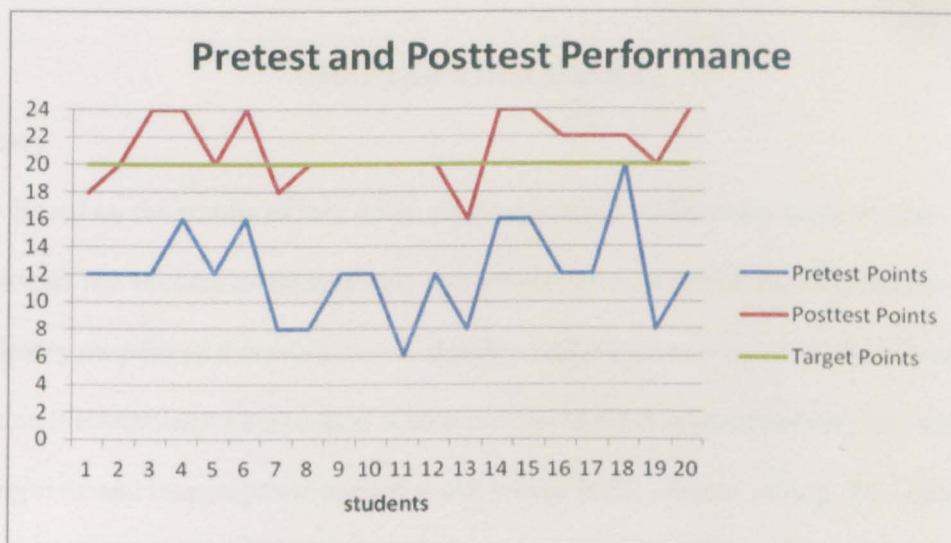rotations with no incidents of inappropriate conduct via social media.

Figure 4.6. eCourse Participant Scores

t-Test: Paired Two Sample for Means

	Pretest Points	Posttest Points
Mean	12.1	22.3
Variance	11.98947368	2.221052632
Observations	20	20
Pearson Correlation	0.401849226	
Hypothesized Mean Difference	0	
df	19	
t Stat	-14.37964042	
P(T<=t) one-tail	5.77144E-12	
t Critical one-tail	1.729132792	
P(T<=t) two-tail	1.15429E-11	
t Critical two-tail	2.09302405	

Figure 4.7. Educational Intervention t-test Analysis

CHAPTER 5 DISCUSSION

Summary

Based on the results of this study, professionalism while using social media

technologies has become an increasingly recognized need for health professions training.

The primary purpose of this study was to develop and pilot test a social media eCourse to

determine if educational intervention can be used to increase students overall knowledge

of appropriate and inappropriate uses of social media in the clinical setting. This chapter

summarizes the conclusions, recommendations, and areas for further study.

A small group of health professions students preparing for clinical rotations were

issued a survey to assess their social media use before taking the eCourse. The online

survey painted a picture that health profession students are indeed active participants of

social media and that they were engaged on many social media sites. It also displayed that

the students had an average of over 300 social media friends with one student responded

to having a thousand social media friends. These findings were similar to other studies (Chretien et al, 2010, Jung et al, 2012). The number of social media connections represents the potential number of people who could have access to protected health information if a breach occurs on any of the participants' social media forums.

The eCourse data provided a snapshot into students' prior knowledge of social media and perceived professional behavior. A follow-up email to students requesting reflection comments revealed one of the main findings from this study was students were unaware that posting of information about patients in the absence of identifying the patient by name or the use of other identifiers (e.g. SSN, date of birth) could still be viewed as a privacy breach if enough information is revealed so that someone in their network could identify the patient. The fact is that an authorized party in the social media network could identify the patient because they work in the same healthcare environment but was not directly involved in the patient's care, which is a privacy breach. Many of the nursing students responded that they would be more cognizant of this when posting their practicum experiences to their class blogs. Another significant finding was the lack of awareness by students of legal ramifications and types of breaches regarding patient privacy on social media. Therefore, the integration of social media training into health profession programs would provide an added benefit to helping prevent the misuse of social media in the clinical setting.

Analysis comparing the students' pretest and posttest performance from the eCourse yielded promising findings. Overall, students' performance on the posttest increased significantly from their pretest performance. This provided tangible evidence that social media training can help students understand appropriate uses of social media

and avoid the pitfalls of inappropriate online professional conduct which can lead to

reprimands, and termination of employment.

This study demonstrated that the widespread phenomenon of social media use by

students will require administrators and educators to develop guidelines for use, levels of

violations and disciplinary actions for violators as we integrate into a more social

healthcare society. This can be accomplished with proper social media training and

policies.

Conclusions

The expectations of this study was that a social media educational intervention

would effectively increase students' knowledge and awareness of appropriate social media

use and the importance of protecting patient privacy while utilizing social media

technologies.

The comparison of the students' pretest and posttest responses created a richer

understanding of the need for social media training for students pursuing health profession

careers. The findings positively supported educational intervention with the increase in

student performance on the posttest compared to pretest. Since social media use is

indicative of human behavior; educational intervention alone may or may not produce a

significant decrease in patient confidentiality breaches via social media, therefore a formal

professional social media training curriculum and social media policies with clearly

defined consequences for violators is needed in health profession programs. . These

findings support previous scholarly literature (Chretien et al, 2010; Kung et al, 2012; Lie

et al, 2012) pertaining to social media training or digital professionalism training curricula

for students pursuing careers in health professions.

Limitations

The limitation of the study is the small sample size and the limited type of health

professionals exposed to the study. Due to legal constraints, testing was terminated earlier

than expected. The findings do not include all social media technologies used by

healthcare profession students. Despite these limitations, the findings still provide an

indication of needed priorities for designing educational interventions to increase students'

awareness of social media professionalism.

Recommendations

In light of these findings, I have four recommendations (a) leaders in higher

education (administrators, deans, chairs, program coordinators, faculty) must

acknowledge the social media phenomena and the need for social media policies that

clearly outlines the consequences for violators (b) examine privacy issues expressed by

faculty who are reluctant to integrate social media into the classroom and investigate

security measures and technologies that may address these issues (c) integrate formal

social media training with the existing HIPAA training in health profession programs to

teach students appropriate uses of social media and the importance of protecting patient

privacy while using social media platforms (d) expand instruction to include training of

social media technologies to faculty and staff with an emphasis on using social media to

engage students instead of just information dissemination. This formalized proactive

approach to social media training should be taught and assessed by qualified faculty or

staff with documentation of students' assessment and performance. Scoring criteria should

be determined by health profession administrators and faculty to determine satisfactory

content knowledge by the students. The training should be mandatory for all students

entering clinical rotations. In the event that a student violates patient privacy via social media, documentation of training, student performance, along with social media policies can be used to determine appropriate actions by administrators and faculty for violators.

Over time, if more health profession programs incorporate social media training into their programs, an assessment of the effectiveness of the interventions as a deterrent to HIPAA patient privacy breaches via social media maybe determined.

Areas for further study

Additional research should continue to (a) examine incidents of HIPAA violations via social media by students and healthcare professionals to determine patterns in types of violations (b) investigate social media use by health profession students and faculty to assess prevalence (c) examine existing social media polices to determine effectiveness in disciplinary actions for violators (d) examine best teaching practices for teaching appropriate uses of social media.

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APPENDIX A
Social Media Use Survey

1. In a typical day, how likely are you to use Facebook or other social networking sites?

○ Extremely likely

○ Very likely

○ Moderately likely

○ Slightly likely

○ Not at all likely

2. In a typical day, about how much time do you spend using Facebook or other social networking sites?

Hours

Minutes

3. About how many "friends" do you currently have on Facebook or other social networking sites?

4. When you're on Facebook or other social networking sites, about how much of your time do you spend looking at what your friends have posted?

○ All of it

○ Most of it

○ About half of it

○ Some of it

○ None of it

5. When you're on Facebook or other social networking sites, about how much of your time do you spend posting things about yourself?

○ All of it

○ Most of it

○ About half of it

○ Some of it

○ None of it

6. When using Social Media, how often do you post comments about your work day?

○ Daily

○ Weekly

○ Monthly

○ Never

7. In a typical day, about how often do you comment on other Social Media users' activities (photos, posts, etc.)?

○ Extremely often

○ Very often

○ Moderately often

○ Slightly often

○ Not at all often

8. How often do you use your Facebook account to log onto other websites?

○ Always

○ Most of the time

○ About half the time

○ Once in a while

○ Never

9. Do you feel it is acceptable to post a photo of a patient on Social Media if you disguise the patient's face?

○ Yes

○ No

10. Which of the following social networking websites do you currently have an account with? (Check all that apply)

☐ Facebook

☐ Bebo

☐ Tagged

☐ Google+

☐ MySpace

☐ Twitter

☐ Other (please specify)

_____

APPENDIX B
Survey Responses

In a typical day, how likely are you to use Facebook or other social networking sites?

Answer Options	Response Percent	Response Count
Extremely likely	36.0%	9
Very likely	16.0%	4
Moderately likely	4.0%	1
Slightly likely	28.0%	7
Not at all likely	16.0%	4
answered question		**25**
skipped question		**0**

In a typical day, about how much time do you spend using Facebook or other social networking sites?

Answer Options	Response Percent	Response Count
Hours	52.0%	13
Minutes	76.0%	19
answered question		25
skipped question		0

About how many "friends" do you currently have on Facebook or other social networking sites?

Answer Options	Response Count
Free form (see responses below)	25
answered question	25
skipped question	0

Facebook Usage:Healthcare Students

Q3 About how many "friends" do you currently have on Facebook?

Answered: 25   Skipped: 0

#	Responses	Date
1	200	4/9/2013 2:01 PM
2	400	3/25/2013 11:09 AM
3	322	2/26/2013 8:53 AM
4	121	2/24/2013 12:25 PM
5	196	2/21/2013 7:00 PM
6	163	2/21/2013 3:01 PM
7	30	2/21/2013 12:16 PM
8	300	2/21/2013 11:15 AM
9	550	2/20/2013 6:27 AM
10	500	2/19/2013 5:43 PM
11	1000	2/19/2013 3:08 PM
12	0	2/19/2013 1:42 PM
13	300	2/19/2013 1:29 PM
14	500	2/19/2013 8:12 AM
15	470	2/18/2013 6:40 PM
16	0	2/18/2013 5:11 PM
17	15	2/18/2013 1:23 PM
18	30	2/14/2013 10:08 AM
19	250	2/13/2013 4:39 PM
20	400	2/13/2013 10:53 AM
21	387	2/12/2013 6:19 PM
22	200	2/12/2013 1:28 PM
23	800	2/11/2013 8:51 PM
24	224	2/11/2013 7:24 PM
25	466	2/11/2013 6:50 PM

When you're on Facebook or other social networking sites, about how much of your time do you spend looking at what your friends have posted?

Answer Options	Response Percent	Response Count
All of it	8.0%	2
Most of it	40.0%	10
About half of it	20.0%	5
Some of it	24.0%	6
None of it	8.0%	2
answered question		25
skipped question		0

When you're on Facebook or other social networking sites, about how much of your time do you spend posting things about yourself?

Answer Options	Response Percent	Response Count
All of it	0.0%	0
Most of it	4.2%	1
About half of it	8.3%	2
Some of it	66.7%	16
None of it	20.8%	5
answered question		24
skipped question		1

When on Facebook or other social networking sites, how often do you post comments about your work day?

Answer Options	Response Percent	Response Count
Daily	0.0%	0
Weekly	12.0%	3
Monthly	12.0%	3
Never	76.0%	19
answered question		25
skipped question		0

In a typical day, about how often do you comment on other users' activities (photos, posts, etc.)?

Answer Options	Response Percent	Response Count
Extremely often	4.2%	1
Very often	12.5%	3
Moderately often	25.0%	6
Slightly often	50.0%	12
Not at all often	8.3%	2
answered question		24
skipped question		1

How often do you use your Facebook or other social networking account to log onto other websites?

Answer Options	Response Percent	Response Count
Always	0.0%	0
Most of the time	4.0%	1
About half the time	8.0%	2
Once in a while	32.0%	8
Never	56.0%	14
answered question		25
skipped question		0

Do you feel it is acceptable to post a photo of a patient on social media if you disguise the patient's face?

Answer Options	Response Percent	Response Count
Yes	0.0%	0
No	100.0%	25
answered question		25
skipped question		0

Which of the following social networking websites do you currently have an account with? (Check all that apply)

Answer Options	Response Percent	Response Count
Bebo	0.0%	0
Facebook	92.0%	23
Google+	8.0%	2
Myspace	16.0%	4
Tagged	4.0%	1
Twitter	36.0%	9
Other (please specify)	24.0%	6
answered question		25
skipped question		0