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Educating Advanced Practice Nurses in Using Social Media in Rural Health Care*

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Abstract

Health care in the United States is facing a crisis in providing access to quality care for those in underserved and rural regions. Advanced practice nurses are at the forefront of addressing such issues, through modalities such as health care technology. Many nursing education programs are seeking strategies for better educating students on technology utilization. Health care technology includes electronic health records, telemedicine, and clinical decision support systems. However, little focus has been placed on the role of social media in health care. This paper describes an educational workshop using standardized patients and hands-on experiences to introduce advanced practice nurses in a Doctor of Nursing Practice program to the role of social media in addressing issues inherent in the delivery of rural health care. The students explore innovative approaches for utilizing social media for patient and caregiver support as well as identify online resources that assist providers in a rural setting.

KEYWORDS: health care technology, social media, rural health, Doctor of Nursing Practice education

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The Affordable Care Act, signed into law in March of 2010, stressed the importance of providing access to healthcare for all Americans. A major concern is the ability of our healthcare system to accommodate and provide timely and affordable access for the 40 million uninsured Americans that may enter the healthcare system. For people living in rural areas, these issues of access will be even greater (Bailey, 2010). Technology is an important channel for providing care to many of these individuals (Agency for Healthcare Research and Quality, 2003).   Most specifically, technology can provide access to healthcare information, expertise, and support groups, as well as individual care. Nursing education programs are seeking strategies that will provide students with the knowledge and skills needed to utilize healthcare technology and thus enhance the health in rural regions (Nairn, Hardy, Parumal, & Williams, 2004; Paterson, Osborne, & Gregory, 2004; Rutledge, Garzon, Scott, & Karlowicz, 2004). Pertinent healthcare technology includes Electronic Health Records (EHR), telemedicine, and clinical decision support systems. However, little focus has been placed on the role of social media in health care much less methods of educating providers in its use.   The purpose of this paper is to present an educational program used to introduce Advanced Practice Nurses in the Doctor of Nursing Practice (DNP) program to the role of social media as a modality for addressing many issues inherent in rural health care.

BACKGROUND

Rural patients and caregivers, that live in remote areas, are more likely to face limitations in access to and quality of health care than their urban counterparts, leaving them isolated from social support systems, specialty care, and educational programs (Kaiser Family Foundation, 2007). Rural individuals also contend with transportation issues limiting their access to healthcare providers and social support systems (Horton, 2008). To compound the problem, rural communities experience severe healthcare provider shortages (Horton, 2008; MacDowell, Glasser, Fitts, Nielsen & Hunsaker, 2010; Bailey, 2010). This is often the result of aging and retiring providers, the aging of the patient population, and the complexity of care in those living in rural communities (Bailey, 2010; Bolch, Rosengart, & Piette, 2009; Agency for Healthcare Research and Quality, 2003).

In an effort to take more responsibility for their care, patients and their caregivers are beginning to rely more on consumer-focused, online health resources, now being termed Consumer Informatics Tools (CHI), often developed outside of the healthcare arena. CHI (including social media, networking and mobile tools) provides the opportunity and mechanism to improve disparities in

healthcare through greater access to information as well as improved and timelier on-line interaction with providers and sources of social support (Gibbons, 2011). The proper use of health technology has been shown to provide better access, reduce disparity and improve outcomes (Nairns et al., 2004). Technology, and in particular social media, can provide an easy and viable way to make health related connections (Dentzer, 2009; Gibbons, 2011).

With the proposed implementation of healthcare reform in 2014, advanced practice nurses will play a major role as providers of primary care (Bolch, Rosengart, & Piette, 2009). Their insights and unique abilities will make them key contributors and partners with other health care providers as they work to implement the vision of care enacted by the Affordable Care Act (Tracy, Rheuban, Waters, DeVany, & Whitten, 2008). These advanced practice nurses will benefit from the knowledge and skills provided through Doctor of Nursing Practice (DNP) education in order to address the issues of providing better access by reducing barriers to care. Congruent with the DNP "Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care," DNP providers should be prepared to utilize web-based tools to support and improve patient care (AACN, 2006; Lopez, Avery, Krupinski, Lazarus, & Weinstein, 2005).

Among such web-based tools are social media. Social media, now being recognized as a valuable healthcare support resource, comprise a variety of online tools that enable people to communicate, interact, and share information and resources. Some of the better-known tools are social networking sites such as Facebook, LinkedIn, Twitter and blogs; social sharing sites such as YouTube, ICYou and, Flickr; real-time communication media such as texting, online chatting, instant messaging, and discussion boards.   In a 2009 survey conducted with 250 healthcare organizations, 160 were actively using Twitter, 131 were posting videos on YouTube, 94 had a presence on Facebook and 24 were actively blogging (Bennett, 2009).   Researchers have shown that technology such as social media can provide better access and social support for all people, particularly those in rural areas (Bennett, 2009; Dentzer, 2009; Gibbons, 2011; Lorel Marketing, 2010; National Rural Health Association, 2007).

In order to prepare Advanced Practice DNP students (nurse practitioners, nurse midwives and clinical nurse specialists) for their role with healthcare technology, a workshop, approved by the university institutional review board, was developed. The students rotated through four technology modalities (social media, electronic health records (HER), telemedicine and clinical decision support).   The purpose of this paper is to: (1) provide information on the

workshop with specific emphasis on the role of social media in addressing the delivery of rural health care, (2) present the students' evaluation of the program, (3) describe three projects developed as a result of the workshop, (4) emphasize methods to overcome barriers to the use of social media, and (5) discuss the future implications of social media in healthcare.

OBJECTIVES, STRUCTURE AND COMPONENTS OF THE SOCIAL MEDIA WORKSHOP

Objectives

The social media workshop was designed to achieve the following objectives: a) develop an understanding of the role of technology in healthcare, in particular rural healthcare, b) examine and explore innovative processes to utilize social media for patient and caregiver support, and c) identify online resources that will assist providers in a rural setting. Students learned by applying this information to a standardized patient case. The students then rotated through the technology modalities (EHR, telemedicine, social media, and clinical decision support). The modules were established based on a review of the literature as well as the expertise of consultants who were expert in the use of each modality.

Social Learning Theory by Bandura (1977) was used as the theoretical framework for the educational program. According to Bandura, learning occurs through observation, imitation, and modeling. There is a relationship between behavioral, cognitive, and environmental factors. The learning in this program was based on patient simulation and student's interaction during the technology modules. This gave the learners an opportunity to observe how each student assessed the patient. Appropriate techniques for assessing the technology needs of the patient and caregiver as well as the use of social media were modeled and then imitated by the students.

Structure

Standardized patient scenario. A standardized patient (patient actor) scenario was used to set the framework for the workshop. Due to the time constraints of a one day workshops, only one scenario was chosen. The emphasis was on learning how to use various social media tools as opposed to learning what tools are available for a specific health condition. A stroke scenario was used since it provided opportunities for the use of a number of social media tools.

The standardized rural patient was recently discharged from the hospital following a stroke that left her with right-sided weakness and slurred speech. She was being seen for a follow-up ambulatory care visit. Her primary goal was to regain her pre-stroke independent lifestyle. The caregiver, the patient's adult child, was feeling overwhelmed with the responsibility of caring for the patient.

The students interviewed the patient and caregiver focusing on the impact of the stroke; healthcare resources available to them; and their ability to utilize technology. Specific emphasis was placed on available technology and the patient/caregiver's knowledge in utilizing online resources. The students used the data obtained during the scenario to develop a plan, "social media careplan," for utilizing healthcare technology to improve healthcare outcomes. The patient and caregiver were trained to give the students feedback on information they failed to gather during the scenario that would be helpful in developing the careplan.

Social Media Model. The students were introduced to social media as a healthcare tool using the Social Media Model developed for the workshop by the authors (Figure 1).

Figure 1.
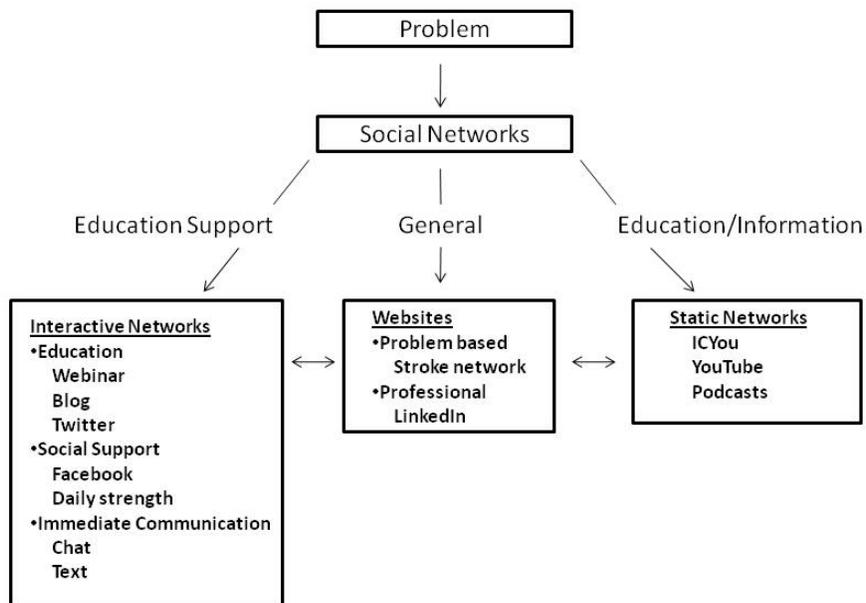
The model separates social media resources into Interactive Networks, Websites, and Static Networks. Interactive Networks allow the patient, caregiver,

or provider to interact with each other. These networks can be used to provide education (e.g., webinars, blogs and Twitter), social support (e.g., Facebook, Daily Strength), and/or immediate communication (Chats and Texting). Websites are online sites such as "The Stroke Network" (www.strokenetwork.org) that house information about a topic. The sites can also provide links to both interactive and static sites related to the topic. Static Networks are sites where patients, caregivers and providers can get information but do not interact. These include ICYou, YouTube, and Podcasts.

Components

      Student activity. The DNP students were assigned to groups of six to seven students in order to conduct a tag team interview with the standardized patient and caregiver. In the workshop, each group of students had access to computers. Breakout groups of two to three students were assigned to locate social media resources that could address: (1) patient/caregiver stroke education, (2) patient/caregiver social support, or (3) provider networking/support. The groups were given 20 minutes to complete the assignment. At the end of the assignment, each group gave a tour of the selected site, discussed how the site could be applied to the patient/caregiver scenario, and presented their overall experience with the site. In conclusion of the session, the entire class focused on future application, pros and cons, problem solving, practical integration, and suggestions for other uses or venues.

      Social media as a patient education tool. Some students focused on using social media as an educational venue. These consisted of sites such as YouTube at www.youtube.com or ICYou at www.icyou.com. YouTube and ICYou are *static* social sharing sites where many hospitals, providers, and healthcare organizations post educational and informational videos for free, public access. Students tended to select educational videos with an underlying theme of successful rehabilitation and recovery through patient stories and testimonials. The students discovered that YouTube videos could not be downloaded to a computer but the link to the video could be e-mailed to the patient/caregiver for direct access. They also found that ICYou videos could be directly downloaded to a computer; however, there were fewer choices of videos specifically related to stroke education.

      Social media for patient/caregiver social support. Some students sought *websites* that housed information related to a particular topic as well as links to *static* and *interactive* resources (Figure 1). They often utilized "The Stroke Network" website, www.strokenetwork.org, to find online social support venues

for stroke patients and caregivers. Such websites provide a wide array of educational, support, and informational resources for patients, caregivers and providers. For example, "The Stroke Network" maintains an active Facebook, Twitter, and YouTube presence. It also provides for online chats, patient/caregiver blogs, and discussion boards.

The students found that the online chat function of the website allows the patient and caregiver to ask questions and seek information in "real-time." For example, a patient or caregiver may post a question about a new medication to treat stroke symptoms and get a reply from either a patient or provider that is familiar with the medication. The personal blog forum and discussion board are provided for patients and caregivers to share their experience through written commentary similar to an online, public diary. Other patients and caregivers can then respond, share their experience, and provide support in a community-like atmosphere. Website users can access Twitter and follow the "mini-blog" postings of the network. Twitter, an interactive "micro-blog", gives users the ability to view short posts, mini commentaries, or links related to the latest on stroke. Users can also access the Network's Facebook Page, a free, public social networking group where patients and caregivers can connect and interact with others. The conversations are monitored and facilitated by Stroke Network professionals who post articles and links to resources.

The students learned that the websites were a dynamic education and support resource for patients, caregivers, and providers alike. The fact that many of the sites were password-protected, providing privacy and the ability to individualize the use to the needs of the patient and caregiver was valued by the students.

Social media in providing support for healthcare providers. Another group of students focused on the identification of online resources that assist healthcare providers. Just as with patients and caregivers living in rural areas, healthcare providers can find themselves isolated from professional networking and support resources. All too often, rural providers find that they are frustrated by the lack of specialists available for consultation as well as the lack of interactions with colleagues who are having similar experiences. These factors could have a huge impact on the lack of healthcare providers willing to practice in remote rural areas.

In order to address provider needs, the students in the workshop identified professional provider-networking groups through either Facebook www.facebook.com or LinkedIn www.linkedin.com. These are social networking

sites that are free to join and provide individuals with the ability to interact with friends, colleagues, and organizations. The students also identified discussion boards and groups specific for nurse practitioners and stroke providers on both sites. LinkedIn groups are professionally oriented and private, requiring providers to "apply" for membership in order to participate in discussions and activities. Facebook, on the other hand, is easier to access and has both public and private group capabilities.

Once providers have an account with either site, they are able to develop or join public or private discussion groups and professional networking groups. These sites provide a virtual means for networking with other providers specific to one's practice, interest, or role. Students find that social networks such as LinkedIn and Facebook provide a way for providers to stay connected with other professionals, access current information, and locate tools to help them expand their ability to treat their patients efficiently and effectively. Both networking sites are quickly becoming popular resources for healthcare professionals primarily for education and professional development. In a study of healthcare practitioners, many of the nurse practitioners surveyed planned to continue expanding their use of social media for these purposes (Keckley & Hoffman, 2010).

STUDENT EVALUATION OF SOCIAL MEDIA WORKSHOP

Survey

The DNP students evaluated the workshop using a survey instrument consisting of items measured on a 5-point Likert scale (Strongly disagree=1 to strongly agree=5) and open-ended questions. The instrument assessed the impact of each technology modality on the students. These modalities included telehealth, clinical decision support, EHR, and social media. Ninety-six percent of the students agreed or strongly agreed that the technology program was very helpful. Interestingly, of the four modules presented, the social media module was rated as the session that had the greatest impact on the students. The open-ended questions revealed that many of the students were looking at how to incorporate social media into their practices. It was shared that the session provoked creative thinking about how to be more efficient and expansive in delivering patient care especially in rural areas. The students found the social media to be "Internet user-friendly" and looked forward to introducing healthcare consumers with Internet access to social networking. Many students documented that they felt that they had multiple, new options for improving how they practice.

Student Projects

At the end of the "technology workshop", students were given an assignment in which they selected one of the technology modalities to incorporate into their practice. This written assignment entailed describing the need for the technology modality in their practice, the potential benefits of integrating the modality, barriers to overcome, and their step-by-step plan for implementation. Twenty-five percent of the students chose to integrate social media into their practice. Examples of three of the social media projects are described below.

Hepatitis C therapy blog. One student chose to integrate the use of Blogs in her practice, specializing in liver and digestive diseases. Blogs are online sites where people can post their thoughts (similar to a personal journal) for others to see. Individuals may use the blog to keep a daily log of their disease state, progress, and setbacks (Johnmar, 2006). Families, friends, and providers can check the blog in order to find out how the individual is doing, enabling them to provide needed support.

This student decided to establish a blog on the practice's website where her patients with hepatitis C could post information about their health. The site would be password protected so that only the patient and provider would be able to access the information. This would allow the patient to receive assistance with their health concerns when they were not scheduled for an office visit. Many of these patients were being treated with Interferon which was associated with side effects that could easily be addressed in a timely manner through the blog.

Facebook Sibling Support Group. A second student chose to focus on using Facebook to provide a sibling support group for the well siblings in families with a medically fragile and technologically dependent child living at home. "Well" children may be isolated from normal childhood activities due to the emotional and financial family dynamics. The Facebook Sibling Support Group would be implemented to address the psychological and social needs of the well sibling that may be affected by the dynamics occurring in a home with a chronically ill sibling.

Facebook is a popular social networking site easily embraced by children and adolescents. The site offers a simple and inexpensive method of support and interaction with others on-line. It is set up so that you have to be invited to have access to the site, thus aiding in its privacy. The group itself would operate as a private, monitored community with agreed upon "rules of engagement" for all

participants. A provider, interjecting quality discussion and links to other useful sites, would moderate the group.

Twitter as a patient information source. In order to keep healthcare consumers informed regarding current trends, one student decided to focus on the implementation of Twitter within her healthcare site for women. Twitter is a form of microblogging where a message of 140 characters or less can be sent to a mass audience at one time (Baum & Dowling, 2010). In these messages, there is the/ ability to include links to websites and other media. Currently, 18 million adults in the United States access Twitter at least once a month (Lipscomb & Knight, 2010). This modality can help increase the efficiency of communication between providers and patients (Baum & Dowling, 2010). The student discovered that the office where she practiced would become bombarded with phone calls when information was released in the news. For instance, when recommendations were released related to moving the mammogram age to 50, many patients began calling the office with questions.

The third student theorized that Twitter would be an excellent mechanism for providing healthcare consumers with needed information. It would reduce the anxiety of many patients and reduce the number of phone calls if the practice sent out a Twitter announcement relating the practice's view on the mammogram protocol. She also realized that Twitter would be a great avenue for keeping healthcare consumers informed about practice updates such as flu shot availability, new services offered, and CenteringPregnancy Group start dates.

Overcoming Barriers to Social Media

Students were asked to identify potential barriers to using social media in rural areas and to discuss viable solutions. Barriers recognized included the availability of technology, the knowledge and skills needed to utilize the technology, the resources to initiate the use, gaining support, and maintaining confidentiality. They recognized the importance of helping healthcare consumers understand how to select reputable sites.

Availability of technology. Specific concerns related to the availability of technology included the patient and caregiver's access to needed equipment especially for those with physical limitations, lack of Broadband Internet connection, and equipment costs. The students identified several possible scenarios that would result in providing access to needed equipment for patients and caregivers. One solution that the students put forth was to develop collaborative sites such as local libraries, schools, community centers, and

churches. By using such sites, the concern with Broadband access became less of an issue. A second strategy was to seek donor programs where used computers, phones, or other technology could be donated to the patients. This could be done in collaboration with schools, churches, and community organizations.

Knowledge and skills of patient/caregiver. Fox (2010) and Gibbons (2011) have found people with chronic disease that have access to the Internet have a greater likelihood of utilizing social media for identifying health resources. (Blogs or online health discussion forums are used most frequently.) However, students felt that many patients and caregivers in rural areas had very little knowledge regarding the utilization of social media. They realized that there would be a need for patient/caregiver education. A number of strategies were discussed.

First, the patient/caregiver's inexperience with equipment or the Internet could be handled by a brief in-service during an office visit. For the more complex social media tools or websites, it was recognized and recommended that providers would need to spend extra time "teaching" the patient/caregiver how to use them or collaborate with other social services to provide the education aspect. Another approach identified would be to identify family members that might be willing to help with social networking. Often teens in the family are quite skilled with social media and could be of great support in navigating relevant social media sites. To address issues of language or illiteracy, the students recommended a strategy utilizing handouts with pictures, sites that provide video and audio information, and providing aid with identifying people (family or friends) who could assist them.

Obtaining support. Many of the social media programs would be initiated through the practice, thus requiring support from the providers and staff. In order to achieve support for the social media program, several students suggested developing a modified business plan focusing on expenses such as the cost of technology, personnel to provide the education to the patient/caregiver, and maintenance of the social media sites.

Confidentiality. An important concern discussed by the students is the need to maintain confidentiality while using social media. The best solution identified was the use of closed, password-protected sites. The students realized that it was imperative to review the confidentiality of the sites prior to recommending them. It was important that the issue of privacy be addressed upfront with the patient/caregiver.

Selecting reputable sites. The students identified strategies for helping the patients to access reputable sites. This included strategies such as identifying whether, 1) those providing the site had a well known reputation in the field, 2) supporting information was documented, 3) the information was up-to-date, and 4) there were links to well known agencies.

CONCLUSION AND IMPLICATIONS

Social media have a vital role in improving the access and quality of care to rural and underserved individuals. It can provide patients, caregivers, and healthcare providers with opportunities for education, social support, and collaboration. In addition, it can aid practices in marketing endeavors. In order for the use of social media to be optimized, healthcare providers should be educated on its potential uses.

First, as educational tools, social media allow patients, caregivers and providers to access some of the most up-to-date materials related to healthcare issues. This information can come in the form of videos, blogs, tweets, websites, and Facebook pages. Media can either be interactive, where there is dialogue or static where information is provided in a one-way format. Regardless of the format, social media allow individuals to obtain information readily as questions arise.

Second, as a social support mechanism, social media enable patients, caregivers, and providers to connect with other individuals facing similar concerns. They can be powerful in helping individuals feel that they are not alone. Social support is best provided by interactive sites such as Facebook, Twitter, blogs, online chats, and texting.

Additionally, many providers find that social media allow them to connect with other providers in order to dialogue about healthcare concerns. They also allow providers to minimize the isolation they encounter in providing care in rural areas. There are sites such as Facebook and LinkedIn that provide venues for dialogue with similar professionals from all regions. Finally, as a marketing tool, social media enable providers to send information about programs they are offering out to the communities they serve, resulting in increased awareness of services available.

In general, use of social media may provide access to education and support tools that might not otherwise be available in rural communities. They have a great potential to aid in equalizing the healthcare provided to all. Since

family caregivers often facilitate the patient's navigation of such resources, social media make accessing healthcare support easy for the caregiver helping to assuage some of the overwhelming feelings associated with the role (Fox, 2010). The provider can create a "social media care plan" for the caregiver and patient to follow that will help facilitate the use of these typically free education and social support resources (Keckley & Hoffman, 2010).

Through modules based on Bandura's Social Learning Theory, such as the one discussed in this paper, students are able to develop knowledge and skills in the use of social media. They are able to participate in acquiring new skills through observation, role modeling, and imitation. They learn how such social media tools can deepen and enrich the care they are able to administer in rural areas. The modules give them a way to become acquainted with the technology, how to use it, and can help them identify strategies for implementing a "social media care" strategy in their practices.

Based on the success of this educational program, steps are now being taken to implement and evaluate the performance of students in using social media in their clinical settings. Many of the students are becoming actively involved in introducing and educating other providers in their practices on the use of social media. In order to aid overworked providers in incorporating social media into their practices, the authors are currently working on developing a "social media careplan" format that can be used to streamline the integration of social media.

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