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Characteristics of Nurses Who Use Social Media

YING MAI KUNG, DNP, MN, MPH, FNP-BC
SANGHEE OH, PhD

Social media are changing the ways people communicate and influencing their approaches to meeting their healthcare needs. The Institute of Medicine recommends utilization of information technologies to improve the delivery of patient-centered care. Little is known about how nurses have adopted the use of social media, however. The researchers conducted an online survey to provide a preliminary review of the characteristics of nurses who do and do not use social media. Also, nurses' preferences for using six different types of social media were analyzed and reported. Nurses from 43 states participated in this study, and the sample represented mostly advanced practice nurses who utilized the Internet regularly and confidently. About 94% of the participants indicated that they use social media, whereas fewer than 1% of the participants reported that they do not know how to use social media. Among those who use social media, social networking sites (90.33%) and podcasts (76.24%) were the most popular, followed by social question and asking sites (37.86%), blogs (31.85%), Twitter (19.06%), and SlideShare (9.92%). Social media can be a powerful tool to reach an intended audience quickly and globally. More research is needed to understand how nurses utilize social media to improve the delivery of patient-centered care.

KEY WORDS

Advanced practice nurses • Blogs • Communication • Health informatics • Nurses • Patient-centered care • Podcasts • SlideShare • Social media • Social networking sites • Twitter

Social media are a form of communication that allows people to create a variety of content and share it with one another. As a result, the Web 2.0 environment is characterized by user participation, openness, social networking, and online community.[1] Social media consist of a number of different kinds of online tools/platforms, such as social networking sites (eg, Facebook, LinkedIn, Google+), social question and answer sites (social Q&A) (eg, Yahoo! Answers, WikiAnswers), blogs, microblogs (eg, Twitter), SlideShare, podcasts, and YouTube. The use of social media has exploded in popularity in the last decade. More than 65% of online adults used social networking sites in 2011, an increase from 29% in 2008 and 5% in 2005.[2] Fifteen percent of online adults used Twitter in 2012 compared with 8% in 2010.[3] The most noteworthy statistic is the increase in Facebook users, which jumped from 1 million in 2004 to 1 billion in September 2012.[4]

The impact of social media in the domain of health has been substantial. First, social media are changing the way people communicate and interact with one another and their approaches to achieving and maintaining health. People communicate with medical experts or those who have similar health concerns by asking and answering questions in social networking sites or social Q&A sites. They can easily access educational health videos or presentations via podcast, YouTube, and SlideShare. According to a 2012 Pew Internet and American Life study,[5] 59% of US adults searched for health information, and 35% tried to identify a medical condition of their own or of someone close to them. Among those who used the Internet, 26% obtained someone else's experience about health issues, and 16% looked for others with the same health concerns to share information with them. Second, social media are influencing the way people manage their health conditions. A report from PricewaterhouseCoopers Health Research Institute[6] indicated that more than one-third of the health information gathered through social media would affect people's decisions to seek a second opinion (45%), to

Author Affiliations: College of Nursing (Dr Kung), College of Communication and Information (Dr Oh), Florida State University, Tallahassee.

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Corresponding author: Ying Mai Kung, DNP, MN, MPH, FNP-BC, College of Nursing, Florida State University, 443 Vivian M Duxbury Hall, 98 Varsity Way, PO Box 3064310, Tallahassee, FL 32306 (mkung@fsu.edu or mkungdnp@gmail.com).

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cope with chronic conditions (42%), to diet and exercise (42%), to choose a hospital/medical facility (41%), to take certain medications (34%), or to undergo specific medical procedures or tests (33%). Furthermore, this report indicated that healthcare consumers would likely trust information posted through social media by doctors or hospitals and would be more willing to share information via social media with these healthcare providers.

The Institute of Medicine recommends that "all health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics."[7(p3)] This report identified utilization of informatics as one of the five core competencies that all clinicians should possess to meet the needs of the 21st-century health system. Therefore, information technologies should be efficiently and effectively used for communication, management of knowledge, prevention of error, and decision making. In this respect, social media can play an important role in accomplishing these purposes and improving the provision of patient-centered care by incorporating patients' viewpoints and their personal experiences and/or by distributing timely health messages to a wide range of populations quickly.[8,9] In order to utilize social media effectively in the delivery of healthcare, it is important to understand how healthcare providers have used social media and their perceptions of adoption of social media.

While there have been many studies about the trends in and status of use of social media by the general public, little is known about healthcare providers' perspectives and rates of adoption of social media. This is true especially for nurses. Recently, AMN Healthcare[10] surveyed the use of social media by healthcare professionals including RNs, nurse practitioners (NPs), and allied professionals, physicians, dentists, and pharmacists, and they found nurses (83%) used Facebook the most compared with all the respondents (74%). Nevertheless, nurses have not been targeted as a major subject of the previous studies. von Muhlen and Ohno-Machado[11] systematically reviewed articles published between 2007 and 2011 on clinicians' adoption of social media and found these articles studied medical students, pharmacy students, junior physicians, residents, pharmacists, plastic surgeons, psychiatrists, and pediatricians. None of them studied nurses.

The purpose of this study was to provide a preliminary review of the characteristics of nurses involved in social media use based on those who participated in this study. First, the demographic and background characteristics of nurses who use social media were compared with those nurses who do not use social media. Second, nurses' preferences for using six different types of social media (social networking sites, social Q&A, Twitter, blogs, podcasts, and SlideShare) were analyzed and reported. These were selected not only because they are commonly used social media, but also because appropriate utilization of these social media in nursing can dramatically improve the delivery of patient-centered care. Findings from this study contribute to the body of knowledge on understanding nurse's use of social media. This information is useful in reaching and educating nurses to better utilize social media to meet the healthcare needs of the 21st century.

METHODS

Researchers collaborated with about 160 professional advanced practice nursing organizations and colleges of nursing throughout the US in the recruitment process. The directors, heads, or contact persons of these organizations distributed an invitation letter with a URL of an online survey to their members or displayed the invitation letter on their Web sites. Participant recruitment was conducted over a 3-month period in 2012, and all nurses were invited to participate by completing an anonymous online survey. As for compensation, participants who provided their e-mail addresses at the end of the survey were eligible for a random drawing for $100 Amazon.com gift cards. Three participants were selected and received the gift cards.

The survey questionnaire included five sections: (1) a welcome page with an introduction to the study, (2) informed consent for the survey, (3) questions about the use of social media, (4) demographic and background information, and (5) a closing page with instructions for participants to opt in for the random drawing by providing an e-mail address. In the third section, participants who used social media were directed to a series of questions associated with the six types of social media. Nonusers were asked to choose the reasons for not using social media, and only demographic, background, and Internet usage information was collected. Prior to data collection, the survey questionnaire was pretested by seven nurses for clarity in wording and flow. The survey was administered through Qualtrics, an online survey tool (Qualtrics, Provo, UT). The Florida State University institutional review board approved this study.

RESULTS

Demographic and Background Information of Participants

A total of 410 nurses in the US completed the online survey, including 151 RNs (36.83%), 225 NPs (54.88%), 14 Certified Registered Nurse Anesthetists (CRNAs) (3.38%), 12 clinical nurse specialists (CNSs) (2.90%), and eight certified nurse midwives (CNMs) (1.93%). Most of the participants were from the Eastern US with the highest

participation from Florida (n = 86), Pennsylvania (n = 27), and Tennessee (n = 25) (see Figure 1 for geographic distribution of participants).

Table 1 displays demographic and background characteristics of the 410 survey participants. Participants' ages ranged from 20 to 73 years. Approximately two-thirds (65.94%) were between the ages of 40 and 59 years, and the average age was 48.87 (SD, 10.88) years. The majority of the respondents were female (92.93 %), white (81.71%), and non-Hispanic (96.59%). Approximately 80% of the participants held a master's degree or higher in nursing. In terms of length of experience in nursing, 56.59% of the participants held worked in nursing between 20 and 39 years with an average of 23.56 (SD, 11.67) years, ranging from <1 to 55 years. Most of the nurses (82.89%) worked full time, and a small percentage of participants reported working part-time (12.96%) or retired/not working (4.16%). The number of participants was almost evenly distributed in work settings of inpatient facilities/hospitals (35.43%), outpatient/clinics (35.96%), and academic settings (24.93%). Only 6.59% of the participants were self-employed.

Participants were surveyed on the amount of time they spent on the Internet and their confidence level searching for health information. Half of the participants reported spending 1 to 4 hours per day on the Internet with an average of 5.27 (SD, 3.00) hours. About 80% of participants used the Internet for health information at least weekly, and almost 90% felt either confident or somewhat confident searching for health information on the Internet.

Comparison Between Nurses Who Used Social Media and Those Who Did Not

Of the 410 total participants, 383 (93.41%) indicated that they used social media. Twenty-seven nurses (6.59%) indicated that they did not use social media at all; 16 of them (6.58%) were advanced practice nurses (APNs) (NPs, CRNAs, CNMs, and CNSs), and 11 of them (7.86%) were RNs. A follow-up multiple-choice question regarding reasons for not using social media was concern for privacy issues (n = 19, 70.7%) or no interest in using social media (n = 17, 63.0%). About half of the subjects indicated that they did not trust social media (n = 13, 48.1%) or thought it was a waste of time (n = 13, 48.1%). About one in four or five nonusers believed social media provided unreliable resources (n = 7, 25.9%) or were not useful (n = 5, 18.5%). Four people (14.8%) indicated they did not know how to use social media, which amounted to less than 1% of the study population.

Overall, demographics and backgrounds among nurses who used and did not use social media were similar (Table 1). The average age for social media users was 48.69 (SD, 10.89) years with an average of 23.45 (SD, 11.65) years of nursing experience. This finding is compared with 51.37 (SD, 10.66) years and 25.15 (SD, 12.34) years of nursing experience for nonusers. On average, those who use social media spent 5.33 (SD, 3.03) hours per day using the Internet, whereas those who did not use social media spent 4.48 (SD, 2.56) hours per day. Participants rated their confidence level searching for health information on the Internet using a five-point Likert scale (1 = not confident at all, 5 = confident). Both groups were

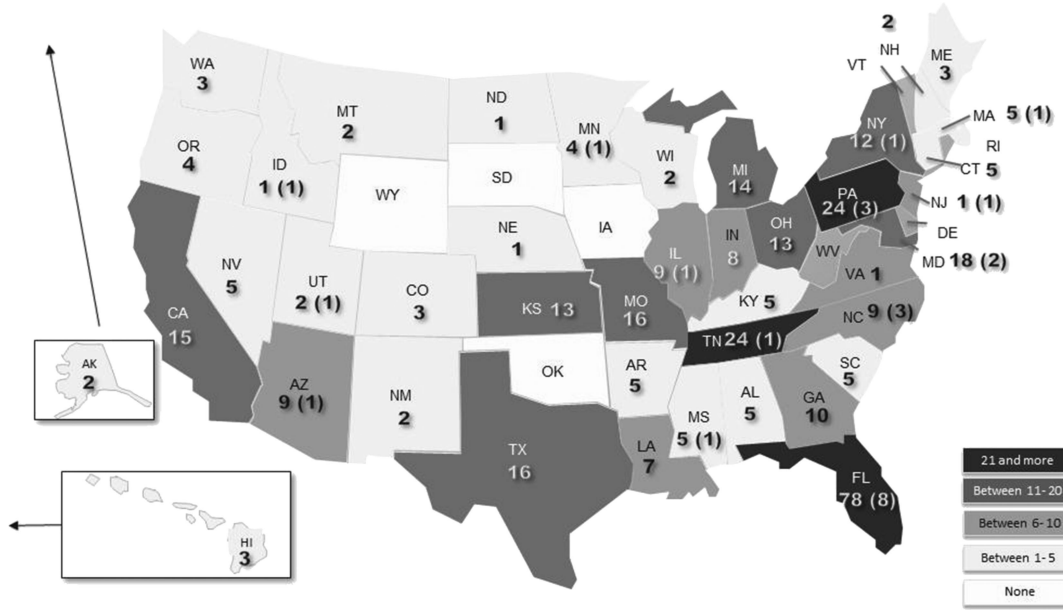

FIGURE 1. The distribution of nurse participants in the US. The numbers without the parenthesis indicate the number of nurses who use social media per state. The numbers within the parentheses indicate the number of nurses who do not use social media per state.

Table 1

Demographics and Background Information of Study Participants

		Those Who Used Social Media		Those Who Did Not Use Social Media		Total	
		n	%	n	%	n	%
Sex	Female	353	92.17	24	88.89	381	92.93
	Male	30	7.83	3	11.11	35	8.54
	Total	383	100.00	27	100.00	410	100.00
Age, y	20–29	23	6.04	1	3.70	24	5.88
	30–39	57	14.96	3	11.11	60	14.71
	40–49	100	26.25	3	11.11	103	25.25
	50–59	150	39.37	16	59.26	166	40.69
	≥60	51	13.39	4	14.81	55	13.48
	Total	381	100.00	27	100.00	408	100.00
Ethnicity	Hispanic	14	3.66	0	0.00	14	3.41
	Non-Hispanic	369	96.34	27	100.00	396	96.59
	Total	383	100.00	27	100.00	410	100.00
Race	White	335	87.47	27	100.00	335	81.71
	Black	19	4.96	0	0.00	19	4.63
	All others	29	7.57	0	0.00	29	7.07
	Total	383	100.00	27	100.00	410	100.00
Nursing degree	BSN or less	58	16.16	5	18.52	76	18.54
	Master's degree	166	46.24	9	33.33	192	46.83
	Doctoral degree	135	37.60	13	48.15	142	34.63
	Total	359	100.00	27	100.00	410	100.00
Nursing license	RN	140	36.55	11	40.74	151	36.83
	APN: NP, CNM, CRNA, CNS	243	63.45	16	59.26	259	63.17
	Total	383	100.00	27	100.00	410	100.00
Working years	<1–9	61	15.93	4	14.81	65	15.85
	10–19	78	20.37	6	22.22	84	20.49
	20–29	101	26.37	3	11.11	104	25.37
	30–39	116	30.29	12	44.44	128	31.22
	≥40	27	7.05	2	7.41	29	7.07
	Total	383	100.00	27	100.00	410	100.00
Employment status	Full-time	318	83.25	21	77.78	339	82.89
	Part-time	47	12.30	6	22.22	53	12.96
	Retired/not working	17	4.45	0	0.00	17	4.16
	Total	382	100.00	27	100.00	409	100.00
Primary employment settings	Inpatient/hospital care	127	35.88	8	29.63	135	35.43
	Outpatient/clinic	124	35.03	13	48.15	137	35.96
	Academic	89	25.14	6	22.22	95	24.93
	Sales/retail/consultant/others	14	3.95	0	0.00	14	3.67
	Total	354	100.00	27	100.00	381	100.00
Self-employed	Yes	25	6.53	2	7.41	27	6.59
	No	358	93.47	25	92.59	383	93.41
	Total	383	100.00	27	100.00	410	100.00
Hours of using the Internet per day	1–4	189	49.61	16	59.26	205	50.25
	5–8	131	34.38	9	33.33	140	34.31
	9–19	61	16.01	2	7.41	63	15.44
	Total	381	100.00	27	100.00	408	100.00
Frequency of using the Internet for health information	Hourly	20	5.24	0	0.00	20	4.90
	Daily	191	50.00	13	50.00	204	50.00
	Weekly	118	30.89	8	30.77	126	30.88
	Monthly	31	8.12	5	19.23	36	8.82
	Less often	22	5.76	0	0.00	22	5.39
	Total	382	100.00	26	100.00	408	100.00

(continues)

Table 1

Demographics and Background Information of Study Participants, Continued

		Those Who Used Social Media		Those Who Did Not Use Social Media		Total	
		n	%	n	%	n	%
Degree of confidence for searching health information online	Confident	190	49.61	20	74.07	210	51.22
	Somewhat confident	146	38.12	7	25.93	153	37.32
	Neutral	32	8.36	0	0.00	32	7.80
	Less confident	13	3.39	0	0.00	13	3.17
	Not confident at all	2	0.52	0	0.00	2	0.49
	Total	383	100.00	27	100.00	410	100.00

confident with an average rating of 4.33 (SD, 0.81) for those who used social media and 4.74 (SD, 0.45) for those who did not use social media. About 12% of the social media user group felt neutral, less confident, or not confident at all in searching for health information online compared with none of the social media nonuser group. A statistical analysis testing for significant differences between the two groups was not provided because the number of those who did not use social media was too small (n = 27).

Users of Social Media

Participants who used social media were given six social media choices and were asked to select all types of social media they used (social networking sites, social Q&A, Twitter, blogs, SlideShare, and podcasts). Because multiple choices were allowed, the percentages for each type of social media use were calculated by dividing the frequency of each chosen option by the total number of participants who used social media (n = 383). Social networking sites (n = 346, 90.33%) and podcasts (n = 292, 76.24%) were the two most frequently used social media and were followed by social Q&A (n = 145, 37.86%), blogs (n = 122, 31.85%), and Twitter (n = 73, 19.06%). SlideShare (n = 38, 9.92%) was the least frequently used social media platform.

Figures 2A to K illustrate the use of each social media type by percentages according to nurses' background information. The descriptive analyses of ethnicity and race were excluded for this analysis because the majority of the participants were non-Hispanic or white.

As illustrated in Figure 2, social networking sites and podcasts were more frequently used than social Q&A, Twitter, blogs, and SlideShare across all of the demographic and background factors. Female and male nurses showed a similar pattern of using social media except for Twitter; more male nurses used Twitter (36.67%) than female (17.56 %). Younger nurses tended to use social media more than did older nurses, especially when it came to blogs. About two of three of nurses aged 20 to 29 years (60.87%) used blogs, compared with about one of three aged 30 to 39 years (38.60%), 40 to 49 years (31.00%), and 50 to 59 years (30.00%). Only about one of five 60 years or older (19.61%) used blogs.

Similarly, those with less nursing experience were more likely to use blogs, Twitter, and SlideShare. Those who were more educated were more likely to utilize Twitter and blogs. RNs and APNs in this study had similar patterns of utilization. Employment settings did not seem to affect social media use, but nurses who were retired or not working seemed to use social Q&A, blogs, and podcasts more than those who worked full-time or part-time. Nurses who worked at inpatient/hospital settings used social Q&A sites more compared with nurses who worked in other settings. Nurses who were self-employed used Twitter, blogs, and SlideShare more than those who were not self-employed.

Internet use seemed to be a factor associated with Twitter, blog, and SlideShare use. The more time nurses spent on the Internet and the more frequently they looked for health information on the Internet, the more likely they were to used Twitter, blogs, and SlideShare. Only two participants who used social media felt "not confident at all" searching for health information online. Confidence levels did not seem to affect the use of social networking sites and podcasts; however, the more confident nurses felt searching for health information online, the more likely they were to use social Q&A sites and SlideShare.

DISCUSSION

This study explored how extensively nurses have adopted social media in order to identify the characteristics of nurses associated with use of social media. Nurses from 43 states participated in this online survey. The demographics of the survey participants were similar to those of national statistics of nurses from the Health Resources and Services Administration[12] in that most were female (93.4%), white race (83.2% white, 5.4% black, and 3.6% Hispanic), and were average age of 46 years. However, this sample differs significantly from the national data with respect to

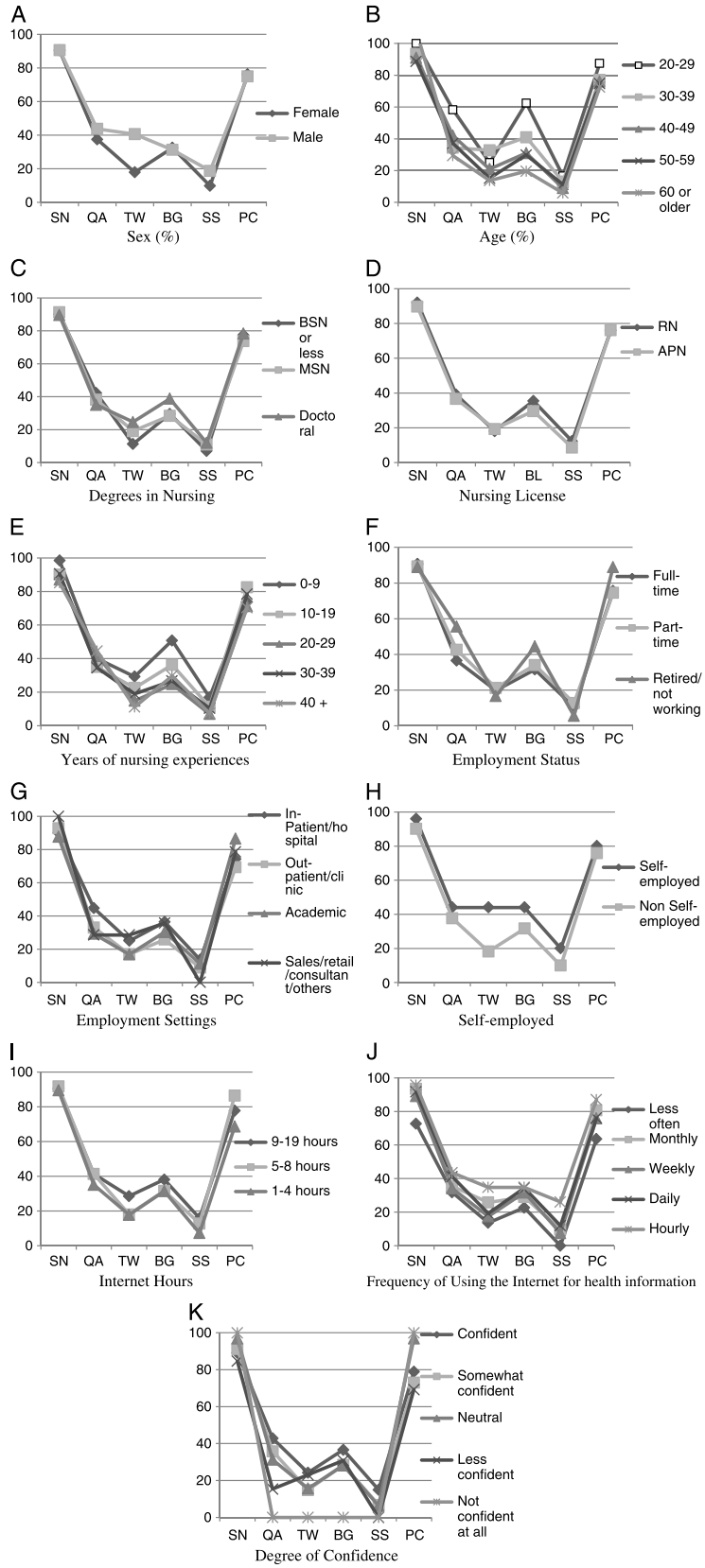

FIGURE 2. Percentages of social media users per social media platform presented by demographic, background, and Internet utilization variables. Abbreviations: SN, social networking sites; QA, social Q&A; TW, Twitter; BG, blogs; SS, SlideShare; PC, podcasts. The percentages were calculated by dividing the frequency of each chosen option with the total number of participants who used social media (n = 389).

the number of APNs and their educational preparations. Approximately two-thirds (63.17%) of this study sample consisted of APNs compared with the national data of 8.2% of all RNs.[12] The study sample was also considerably more educated, with 81.46% of the study participants holding a master's degree or higher compared with the national average of 13.2%. Other characteristics of this group of nurses revealed most of them worked full time and in a variety of practice settings, and had an average of 23 years of nursing experience.

Internet utilization was investigated because social media are available through the Internet, which can be a confounding variable to the use of social media. This sample of nurses used the Internet heavily, spending about 5 hours per day online. Most of them searched for health information on the Internet on a daily or a weekly basis and felt confident doing so.

Findings from this sample of nurses indicate a majority of participants were using social media (93.41%). The RNs and APNs in this study exhibited similar social media adoption. When comparing other demographics and background information of those who did and did not use social media using descriptive statistics, they were not much different from one another. However, this should be interpreted with caution because the number of participants who did not use social media was small (n = 27, 6.5%).

Nurses in this study showed strong preferences for social networking sites (90.33%) and podcasts (76.24%), but SlideShare (9.92%) was the least utilized. No dominant demographic, background, or Internet use variables stood out with regard to utilization of these three different social media sites.

Social Q&A (37.86%) was the third most popular type of social media used and was followed by blogs (31.85%) and Twitter (19.06%). The characteristics of nurses who used social Q&A, blogs, and Twitter platforms differed slightly compared to the users for the other three sites mentioned earlier. Social Q&A sites users were more likely to be between 20 and 29 years old, retired/not working, or employed in an inpatient setting. Blog users were more likely to be 20 to 29 years old with less than 10 years of experience, retired/not working, or self-employed. Twitter users were more likely to be male, self-employed, and younger. The common thread among these three groups of social media users is younger age.

IMPLICATIONS

Findings from this study implicate a variety of potential uses of social media in nursing. Social media can be an effective tool to reach nurses globally, to disseminate information quickly, and to solicit feedback broadly regardless of geographic barriers. There are multiple uses for all types of social media in education, practice, and research to promote health. Social networking sites and podcasts could be effective tools to reach out to and educate a wide range of nurses regardless of their demographic or background characteristics, and could be used to promote culturally competent care. Social networking sites could be useful for nurses to create social networks of their own and to engage with other healthcare professionals or patients. Nurses can use social networking sites to identify clinical resources, search for job openings, and exchange ideas with others. Social media can also be used in research to recruit participants. Furthermore, content of these sites can be mined and analyzed for innovative care models such as to predict and to track infectious disease outbreaks.[13]

The popularity of podcasts can be used to facilitate continuous education in nursing, for virtual clinical practice collaboration, and for patient education.[14] The podcast offers a learning strategy for those who find reading challenging such as people with low literacy levels and learning disabilities. Podcasts can also encourage active learning and self-expression because learners can record and broadcast contents independently.

Social Q&A has been popular in the domain of health because people can learn about personal experiences or opinions from those who have similar concerns. Oh[15] found that nurses are active participants in social Q&A sites. They provide answers to health concerns along with laypeople and other healthcare providers. Social Q&A can be used as a venue for nurses to provide appropriate guidance and to dispel misinformation to improve access to healthcare.

Blogs and Twitter have been known as useful tools through which nurses interact with others, to share work experiences, and to distribute knowledge they gained from lessons in research, education, or service.[14,16,17] Blogs can be used as a diary, a newsletter, and a way to showcase your work and to build a community. Twitter allows users to send short messages (up to 140 characters) to their followers and allows users the ability to re-Tweet messages. The World Health Organization effectively used Twitter in the aftermath of the 2011 Japan earthquake to dispel erroneous health information to remedy radiation exposure.[18] Also, Twitter was used effectively during the 2009 pandemic flu to predict and track disease outbreaks by analyzing message contents.[19] Findings from this study indicate that blogs and Twitter messages can help nurses who are young and have less experience in nursing to facilitate discussions about issues and interests and build a community of their own. For those who are self-employed, blogs and Twitter can be used as tools for marketing, such as posting news or events to advertise their services.

Although SlideShare was the least popular social medium in this study, it is the world's largest presentation sharing site with 28 million unique users per month[20] and 130 million pages of views.[21] Also, SlideShare has been known as one of the top 100 tools for education and

e-learning.[22] It is ranked as the 13th among other types of social media, such as Twitter (first), YouTube (second), Facebook (ninth), Wikipedia (10th), and Blogger/Blogspot (15th).[22] On SlideShare, people can upload and download presentations on a variety of topics. They can also reuse, remix, or recreate these presentations to share their own ideas. It has great potential for distributing educational nursing materials and health information.

LIMITATIONS

There are limitations to this study. First, this study was made up of a convenience sample of nurses. Nurses who chose to participate might exhibit different characteristics compared with nurses who opted out of participation. Second, this was an online survey with the intent to explore the extent of nurses' utilization of social media. Given that the recruitment invitations were sent out through online channels, it was likely that the sample population would likely be a group of nurses who were already Internet users. This assumption was based on the idea that nurses who do not use the Internet would likely not use social media, and nurses who do not use the Internet would be unlikely to participate in this study. Given the study sample reflected a group of nurses who utilized the Internet regularly and confidently, it is reasonable to assume that the findings of this study would likely be skewed to reflect higher utilization of social media than the general nursing population. Third, although the demographics of the study participants were similar to those of national statistics of nurses in terms of gender, age, and race, the participants were considerably more educated and consisted mostly of APNs. Thus, these findings are probably more representative of APNs and cannot be generalized to the entire nursing population. Fourth, the number of social media nonusers was small, which limited the ability to test for statistical significance between those who used and those who did not use social media.

CONCLUSION/FUTURE STUDY

Social media have revolutionized how people communicate and share information. Various social media platforms can be utilized in combination and when utilized appropriately can be a powerful communication tool that can reach audiences across the globe rapidly. This study provided a preliminary review on how frequently nurses utilize social media and the characteristics of nurses who used social media based on an online survey. This sample population consisted of mostly APNs and nurses who used the Internet frequency and confidently. Social networking sites and podcasts appeared to be well accepted and utilized by nurses and thus can be good channels to reach nurses. Even though participants indicated a high utilization of podcasts in this study, it is unclear if users were passive participants of podcasts versus active creators of content. Social Q&A sites were utilized by less than half of the participants, and it was not clear what roles nurses play on these sites or in what capacity they were utilizing this platform. Blogs, Twitter, and SlideShare are very effective means for communication but were less utilized by participants in this study. Again, it is unclear as to why these platforms were less utilized.

Nurses may use social media differently depending on the purposes they have, such as for professional development, engagement with patients, marketing, or entertainment. Therefore, an immediate follow-up study will provide an in-depth analysis exploring the relationships between the purposes and the uses of various social media platforms by nurses. Understanding facilitators and barriers that influence nurses' perceptions, attitudes, and behaviors toward the use of social media and understanding reasons why nurses prefer certain sites to others may improve utilization of social media and in turn improve health service delivery. Future research in this area is needed to maximize the delivery of patient-centered care to promote better communication, management of knowledge, prevention of error, and for decision making.

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