Recruiting Nurses Via Social Media for Survey Studies

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Background: Nurses are a difficult population to recruit for research. Barriers to recruitment of nurses include survey fatigue, hospital structures and institutional review boards as gatekeepers to accessing participants, and limited generalizability of findings. Social media present innovative opportunities to recruit participants for survey research. However, there is limited information about best practices for recruiting nurses through social media.

Objectives: The aim of this report was to examine the advantages and disadvantages of and determine the best practices for recruiting nurses for survey studies via social media.

Methods: We examined recruitment strategies of three survey studies involving nurse participants. Each study used social exchange theory and leverage-saliency theory to guide recruitment. The studies included were (a) the Travel Nurse Onboarding Study, which recruited participants from a single closed group on Facebook; (b) the Presenteeism and Nursing Study where participants were recruited using association listservs, healthcare organizations, and paid ads and postings on social media; and (c) the Pain and Nursing Study in which participants were recruited through social media, association listservs, and in person at conferences.

Results: Social media offer accessible, low-cost, high-yield approaches to recruitment of nurses for survey studies.

Discussion: Useful strategies for crafting effective recruitment via social media are presented, including how, where, when, and how often to post. The generalizability of social media research is also discussed. Suggestions are provided for researchers using social media as well as guidelines for institutional review boards to address gray areas of social media research. Data integrity protection techniques are proposed to ensure social media survey data are not corrupted by malicious bots. This report outlines best practices for the recruitment of nurses for survey studies using social media.

Key Words: method ● nurses ● nursing ● recruitment ● social media ● survey

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Despite being the single largest group of healthcare providers, nurses have been identified as a difficult population to recruit for research (Samia & Ellenbeker, 2011). Some of the barriers to recruiting nurses include survey fatigue, hospitals serving as gatekeepers to accessing nurse participants, and limited generalizability when participants are recruited through a single hospital or healthcare organization (Broyles et al., 2011; Weierbach et al., 2010). Nurses are asked to complete multiple surveys in their work settings (Montalvo, 2007). White (2012) found that prospective nurse study participants had become "tired and disinterested" in participating in research as they had been frequently invited to participate in studies in the past two decades. Consequently, researchers run the risk of low participation and incomplete survey responses when recruiting nurses in the

hospital setting (Raymond et al., 2018). Mulhall (1997) identified that researchers and leaders in the practice environment operate under different imperatives and foci, which remains true today (Huston et al., 2018). Hospitals want to control their images and might not wish to have research conducted that may reveal their intellectual property or unsavory details. Academic–practice partnerships can prove difficult when hospital administrators preclude research, which does not align with their organizational agenda. Recruiting nurses from a single hospital, hospital system, or even several hospitals throughout a metro area can result in limited generalizability of the findings.

Traditional recruitment methods, including in-person, advertisements, mailing letters, and telephone, are time-consuming, are expensive, and can be difficult to achieve adequate power when large sample sizes are needed to adequately represent the population of interest (Surdam et al., 2020; Weierbach et al., 2010). Researchers have turned to professional organizations to recruit nurses for survey studies; however, bias can occur in recruiting nurses from professional organizations, as these groups often have attributes that differ from nonmembers, such as higher levels of education, which limits generalizability (Samia & Ellenbecker, 2011).

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Social media have been identified as promising recruitment approaches for healthcare research (Reagan et al., 2019). Leveraging social media to recruit nurses for research bypasses many of the barriers associated with recruiting them through hospitals and nursing organizations. Surveys posted on social media to recruit nurses for research allows them to opt-in to research they view as salient to them. As opposed to completing the survey while at work, participants can complete the survey at a time convenient to them and on their device of choice. Research conducted outside the constraints of the hospital setting enables researchers to ask questions that are not restricted by what hospital leadership might view as potentially unfavorable and gives them the ability to recruit nurse participants regardless of organization or geographic area. Social media have the potential to reach a diverse cadre of nurses, including groups typically underrepresented in convenience samples. However, the best practices for recruiting nurses for research via social media remain unknown. The objectives of this report are to describe and examine strategies most successful for recruitment of nurses to participate in survey studies using social media based on the experiences of researchers across three studies.

THEORIES FOR RECRUITMENT

Social exchange theory and leverage-saliency theory can be used to increase participation in survey research (Fan & Yan, 2010). Social exchange theory proposes that participants are more likely to participate when they perceive that the expected rewards of responding will outweigh anticipated costs (Dillman et al., 2014). Rewards can be material, such as a monetary incentive, or nonmaterial, such as the desire to contribute to nursing science. Leverage-saliency theory helps prevent survey nonresponse by explaining why an individual chooses to participate, or not, in the survey. The theory posits that individuals are more likely to participate in surveys they view as salient to them (Groves et al., 2000). Researchers can use these two theories to tailor their survey participation requests to make them more salient to the sample and leverage a greater number of participants (Lavrakas, 2008).

METHODS

This report describes recruitment strategies used for three cross-sectional survey studies that utilized convenience and snowball sampling methods to recruit nurse participants using social media, in addition to other approaches. The three institutional review board (IRB)-approved studies included in this analysis were the Travel Nurse Onboarding Study, the Presenteeism and Nursing Study, and the Pain and Nursing Study. The purpose of the Travel Nurse Onboarding Study was to understand travel nurse onboarding practices of hospitals throughout the United States and obtain perceptions of travel nurses' onboarding needs. The purpose of the Presenteeism and Nursing Study was to measure presenteeism among nurses across five measures

and evaluate the psychometric fit and utility of the measures for use in nursing (Rainbow et al., 2019). The purpose of the Pain and Nursing Study was to explore the phenomenon of nurses in pain at work. Brief descriptions of the studies are included in Table 1; study outcomes are published elsewhere (Bethel et al., 2019) or not yet in publication (Pain and Nursing Study).

Efficiency of the recruitment approaches were tracked in each study. The Presenteeism and Nursing study used different links across postings, which allowed researchers to analyze data related to the efficiency of different recruitment strategies. The Travel Nurse Onboarding and Pain and Nursing studies tracked the timeline of participation in relation to social media posts to explore timing of posts. Demographics of each sample were calculated and compared to the general nursing population.

RESULTS

Throughout the three studies, the most successful recruitment method was posting (nonpaid) in closed groups on Facebook for nursing and healthcare providers. In the Travel Nurse Onboarding Study, a single post resulted in 32% (n = 98) of the study sample size within a 24-hour period. A total of 590 individuals consented to participate in the Presenteeism and Nursing Survey. These participants came from social media (n = 359), hospital organizations listservs (n = 190), and nursing organization listservs (n = 41). The Pain and Nursing Study received 350 (~10%) of study participants (n = 3,452) within a few hours of posting on a very large closed Facebook group with significant national nurse membership. Across all studies, the participants were mostly women, and the mean ages of the participants in the studies ranged from 37.7 to 41 years old (Table 1).

DISCUSSION

How and Where to Craft Effective Social Media Recruitment Posts

Researchers should screen closed groups on Facebook for match with study inclusion criteria as well as for the style of posts with the highest levels of engagement. Closed Facebook groups may have a process for vetting research by moderators who oversee that enforcement of group rules prior to posting. After receiving approval to post, tagging the moderators can add legitimacy of the post and reduce the chances of the post being removed by another moderator. In alignment with leverage-saliency theory (Groves et al., 2000), the recruitment posts of our studies used pictures or videos of the principal investigator with an explanation about why the survey was salient to the potential participants. In addition, the post served to inform viewers about the potential rewards of participation, including helping the nursing profession and incentives such as e-gift card raffles, in an effort to outweigh the costs of the 20-minute participation in a survey, as supported by social exchange theory (Dillman et al., 2014). The researcher can

TABLE 1. Brief Study Descriptions

	Study name		
	Travel Nurse Onboarding	**Presenteeism and Nursing**	**Pain and Nursing**
Purpose	To understand current travel nurse onboarding practices of hospitals throughout the United States and to obtain the perceptions of travel nurses regarding their onboarding needs	To measure presenteeism across five measures and to evaluate the psychometric fit and utility of those five measures of presenteeism for use in nursing	To explore the prevalence, severity, and performance consequences of nurse pain
Inclusion criteria	Direct-care travel nurses who completed at least one 13-week travel contract within the United States	RNs providing direct patient care in an inpatient setting	RNs providing direct patient care and living in the United States
Platform	Facebook	Facebook, Twitter, conferences, social media ads, nursing association/healthcare organization listservs	Facebook, Twitter, nursing association listservs, conferences
Incentives	None	Gift card raffle	Gift card raffle
Clicked	402	829	4,119
Qualified (%)	382 (95%)	590 (71%)	3,940 (96%)
Study sample size	306 (76%)	447 (76%)	3,452 (88%)
Recruitment time frame	22 days	6 months	4 months
Gender	Female 94% Male 5%	Female 92% Male 8%	Female 96.3% Male 3.7%
Average age in years	39.7	37.7	41

encourage participants to share, "like," or comment on the study advertisement, which keeps the post higher in the feed for longer. This is especially important in large groups where posts are frequently made, which pushes older posts further down in the feed. Disabling the comments and ability to like a post will result in the post being seen by very few potential research participants. Although not recommended, researchers can opt to pay for advertisements on Facebook targeted to selected populations that can be run for as little as $1 per day. However, because the paid advertisement algorithm is such that the payment determines how many potential people the post will be exposed to, this can become quite expensive.

As opposed to groups, Twitter uses hashtags as key words or phrases to categorize the post, called a tweet, and enables a search (Twitter, n.d.). Hashtags are helpful in recruiting participants for survey studies. Several hashtags may be appropriate and can be used to advertise the tweet. The only limitation is that a single tweet can contain only 280 characters. Researchers could conduct a search to determine what hashtags are trending among the population of interest. Many conferences generate hashtags for conference attendees to follow. Determining which conference will occur during survey recruitment and using the conference hashtag to garner interest in the survey can be helpful to recruitment. Tagging individuals or organizations with influence on Twitter among the targeted population is another approach researchers can use to boost the visibility of their post through a retweet, which is a publicly shared post to an individual's followers (Twitter, n.d.).

When and How Often to Post

To optimize the visibility of the post in a feed of a closed group on Facebook, researchers should pay attention to the best time to post. For nationwide audiences, posting in the late afternoon or early evening in central time has the potential to reach most participants prior to the end of their shifts or before evening routines begin. Unique survey links can be helpful in determining trends as to which posts have the biggest return on investment in terms of the study sample size; survey software can determine how many participants clicked versus completed the survey. Posting often and on weekdays tends to be more effective in terms of potential participants engaging with the posts, resulting in the post staying higher in the feed for longer and potentially attracting a greater number of participants.

Generalizability of Social Media Research

One of the concerns about using social media for survey research recruitment is the ability to obtain access in sufficient numbers to the targeted population. For example, seeking out hashtags or closed Facebook groups with a big following of nurses working in rural emergency departments can result in greater numbers of participants than recruiting through traditional methods. Because group membership criteria may not be strict, closed Facebook groups may contain not only nurses but also others, such as allied healthcare staff, students, and recruiters. Researchers should therefore adequately screen potential participants and incorporate inclusion criteria into the body of the post. Those who do not fit the inclusion criteria are kept from advancing to the survey and are thanked for their interest in the study.

Another concern about using social media for survey recruitment is that the findings will have a selection bias toward younger participants (Child et al., 2014). However, social media can be used to recruit participants from a diverse range of ages. The average age range of participants from the studies

included in this brief report was 37.7–41 years. The 2017 National Nursing Workforce Study by the National Council of State Boards of Nursing found that the average age of nurses was 51 years (Smiley et al., 2018). However, the accuracy of the average age for nurses working in a direct patient care role among the participants of the National Nursing Workforce Study was unknown as only 58% of participants worked in direct patient care roles (Smiley et al., 2018). Although we acknowledge selection bias may exist, bias can be mitigated by casting a wide net as opposed to just using a convenience sample. Researchers can gain access to a potentially much larger and more demographically diverse population using social media. For example, underrepresented groups, such as nurses from rural hospitals, can be accessed through social media, increasing the generalizability of the findings (Kazdin, 2016).

Institutional Review Board

Recruiting research participants on social media is relatively new and in need of further development of guidelines for IRBs. The Revised Common Rule contains no guidelines about recruiting research participants via social media (Office for Human Research Protections, 2017). Most IRBs require researchers to describe the types of social media that will be used to recruit participants, whether they need to seek administrator approval prior to posting, and drafts of the posts. The University of Pennsylvania IRB (n.d.) published a guide for research recruitment using social media including recommendations to register the social media account with the IRB, inclusion of the *actual* text used in the posts, designation of frequency of posts, designation of person in charge of posts, and use of a disclaimer that social media as a method of communication is not secure. The University of California Irvine IRB (University of California Irvine, Office of Research, n.d.) guidelines for online sources and mobile devices note that "blogs, Twitter feeds, public websites, chat rooms, and other comparable data sources are 'public' in the sense that they are available to all web users, and 'published' in the sense that the data is published on the web." However, IRB requirements will vary, and researchers need to consider their own IRB policies.

Although Twitter is part of the public sphere, the public nature of closed groups on Facebook is less clear. Research participants recruited from closed groups on Facebook who identify themselves as research participants by making comments such as "done!" or "survey completed!" in the recruitment post can compromise their privacy. Although closed Facebook groups are not publicly available to all Facebook users, it can be easy to gain access to these groups and the published content. Although some IRBs have published guidelines for recruitment and research using social media, there are still gray areas that require researcher consideration. These include how to handle the self-identification by the research participants in comments and messages posed to the researcher in response to the recruitment posts, privacy, and security settings of the social media profile for the research team member making posts and when social media posts are part of the public sphere.

Bots and Data Integrity

When conducting online survey research, there is always a potential that the study could be hacked or infiltrated by bots (Reagan et al., 2019; Simone, 2019). Researchers and IRBs must be aware of the risks of bots infiltrating survey research and take measures to counteract the risks. The use of open-ended questions and time and date stamps on informed consents are warranted in online surveys as bots will provide illogical answers (Simone, 2019). A CAPTCHA (Completely Automated Public Turing test to tell Computers and Humans Apart) is a program used within an online survey to distinguish a human from a machine and can be useful to prevent survey infiltration by bots (Ljung & Arnflo, 2016). In addition to use of CAPTCHAs, useful strategies to combat bots include using unique survey links, open-ended survey responses, asking similar questions at different points in the survey to detect inconsistencies, and frequent data checking.

Limitations

This report is limited to the experiences of the researchers involved in three studies. Furthermore, the aims of our studies were not to compare the effectiveness of social media recruitment to different recruitment approaches. Although many forms of social media exist, this brief report was limited to Twitter and Facebook. These platforms were selected for the studies, as these are two of the most widely used social media platforms (Pew Research Center, n.d.). None of the studies recorded the total time in minutes spent on recruitment, therefore limiting our ability to report time cost.

Conclusion

Across three survey studies, we found recruitment via social media—specifically closed groups on Facebook—to recruit the most participants. With careful planning and attention to recruitment methods, using social media can provide useful approaches to recruit adequate samples of nurses for research. As we seek to increase the speed of translation of research into practice, conducting research with a more representative sample of nurses can help researchers with the generalizability of their findings. Future studies should compare different ways to recruit nurses for survey studies using systematic approaches to report effectiveness. In addition, IRBs must establish clear standards for recruiting research participants via social media.

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