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Perceptions of Nurse's Personal Smartphone Use at Work

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Walden University
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Abstract

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by

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MBA, University of Phoenix, 2005

BS, Castleton University, 1984

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Distracted nurses who use their personal smartphone at work has resulted in the diversion of attention from patient care. The specific problem is the personal smartphone use by nurses in the hospital settings has resulted in distracted patient care, leading to wrongful release of patient's information, medical errors, injury or preventable patient death. The purpose of this qualitative study was to describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. The study was grounded in the distraction-conflict theory conceptual framework. The key research question examined the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. A single case study with embedded units was conducted and involved a total of 54 participants. The trustworthiness of the study's data was supported by employing methodological triangulation from the study's three data sources: semi-structured interviews, a focus group, and an open-ended questionnaire. Four themes and 9 subthemes were revealed after thematic analysis. The findings clearly demonstrated that nurses perceive their smartphones as an integral tool to assist in patient care and, if misused, a distraction that may create a negative impact on patient care. This study is likely to promote positive social change by providing guidance for nursing management on defining policies and practices based on nurses' smartphone use that incorporate the perceptions and insight of the nurses to provide professional application that heighten the awareness of distracted health care.

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Dedication

I dedicate this dissertation to my mother Eloise Lucinaris, and my husband, Louis Criscuolo, Sr. Both my mother and my husband were my greatest supporters. My mother was so proud, and my husband told me that he always wanted a doctor in the family. During this journey, both my mother and my husband passed away and are now cheering for me from heaven. Also, I dedicate this dissertation to our son Anthony, who watched me spend many hours studying and writing. Anything is possible, you just have to put the work into it and keep your eye on the goal. Anthony, you can do anything. I also want to thank Jennifer Martone, Lou Criscuolo, Jr., Linda Pelham, Cheryl D'Amico Patterson, Darcy Walsh, and my family and friends. Finally, I want send love and thanks to those who supported me from heaven, Beatrice Copeland, Josephus Copeland, Annie Stroman, and Daisy Gomez.

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Chapter 1: Introduction to the Study

The proliferation of smartphones has entered all facets of the human experience. However, smartphone use may become problematic when employee participation in social media, gaming, or others activities on their personal devices during their workday has the potential to create a distraction from their primary tasks (Brooks et al., 2017; Savage & Staunton, 2018). A study conducted by Websence revealed that 61% of American workers participate in non-work-related activities and the time spent participating in non-work internet activities or cyberloafing may use up to 56% of non-productive work hours (Konig & Caner de la Guardia, 2014).

The health care provider may encounter negative consequences if their participation coincides with direct patient care. The negative and unintended consequences of using the smartphone in the clinical setting include an increase in distractions and interruptions and a decrease in face-to-face interactions with the clinician and the patient (DeWane et al., 2019). In addition, patient care may be compromised and disrupted due to the diversion of the nurses' attention to their smartphones (Mariano et al., 2018; Shakki et al., 2019).

The inappropriate use of social media or other non-work-related smartphone activities may have broad ramifications for the licensed nurse. Nurses may not be fully aware of the regulatory agencies, federal, state, and local laws and nursing licensure board rules and regulations regarding social networking, and the consequences of violating the Health Insurance Portability and Accountability Act (HIPAA), and Patient Health Information (PHI) (Mariano et al., 2018; Snoots & Wands, 2016).

This qualitative single case study described nurses' perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use. As a principal health care provider, the nurse actively coordinates and interacts with the patients on a regular basis, and must never forget that they are accountable for the use of their smartphone in the workplace (Buppert, 2018; O'Regan et al., 2018). The findings of this empirical study may advance knowledge on this significant topic in patient care management. The findings of this study may contribute to positive social change by guiding nursing management to define policies and practices that may minimize distracted patient care based on nurses' smartphone use.

Background of the Study

The saturation of the smartphone and other devices has become an integral part of the nurses' daily lives and their use of the Internet (Alving et al., 2018; Beauregard et al., 2017). The use of the smartphone and other handheld devices used for personal intentions while at work may positively and negatively affect the nurse-patient interaction. Besides, participation in social media, using a smartphone while at work (Karaoglan Yilmaz et al., 2015; Rolls et al., 2016) has broadened the ability to avoid traditional face-to-face interaction to a more digital communication method. Virtual communication may become prominent in the daily interactions of the nurse, and the nurse-patient exchange may be compromised, especially with the use of social media. The nurses' ability to recognize emotions and appropriately respond may be altered, and non-work activities may divert patient care (Cho & Lee, 2016; Mariano et al., 2018).

Personal smartphone use and participation in social networking, is prevalent and has dramatically changed the line between professional, personal, and private boundaries (Scruth et al., 2015; Wang et al., 2019). Nurses may create social media profiles on Facebook, Instagram, and other networking sites and may not understand the privacy laws and how they can be applied online. The distinction between the personal and professional online activity may blur, and disclosure of their workday can breech privacy standards. Pages dedicated to nursing may contain graphic images, posts, and comments that may be demean patients. The nurse may believe that the images, posts, or comments are confidential or anonymous, or private or semi-private in a closed group, and stated among friends. Advances in technology afford the ability to trace all posts and uncover the author (Green, 2017; O'Connor et al., 2016).

During the work hours, nurses must remain attentive to their patients (Bautista et al., 2018; Wang et al., 2019). The personal use of smart phones may hinder the nurse's ability to provide patient care. Distractions from direct patient care complicate nurse's duties and increase the number of times they must shift their focus. Accordingly, the reduction in focused time may negatively impact patient outcomes (Klemets & Evjemo, 2014; Vaisman & Wu, 2017).

The Social Media in the Workplace Pew Report, released in 2016, surveyed 2,003 American adults aged 18 to 64 reported that among the currently employed who participated in the survey, 34% use social media to take a mental break (Olmstead et al., 2016). Employees spend at least 60 to 80% actively participating in non-work-related Internet activities (Sampat & Basu, 2017; Ugrin & Pearson, 2013). A self-reported and

witnessed study focused on nurses' personal use of smartphones with a sample size of 1,228, during patient care stated that two-thirds (69.06%) of the respondents experienced more negative than positive effects on patient care. Conversely, less than two-thirds (30.94%) believed that personal smartphone use had more constructive than adverse effects on patient care (McBride & LeVasseur, 2017).

Distracted patient care may be attributed to inattentiveness and the use of smartphones. In addition, the increased use of handheld technology and the internet that nurses use to participate include applications (apps) and social networking sites (Kostagiolas et al., 2014; Watson, 2018). A recent study concluded that the use of smartphones by nurses while treating patients may be associated with daily attention-related errors and unplanned mind-wandering (Marty-Dugas et al., 2018). According to McBride (2015), there is a gap in the literature on data-based studies documenting the problematic use of mobile devices in the health care workplace among nurses.

Problem Statement

Smartphones are a popular and, in many instances a necessary tool. Smartphone use prompted a cultural shift that created instantaneous information access (Beauregard et al., 2017; Vearrier et al., 2018). As a result, non-work linked to social media during expected productive work hours will have an effect in the workplace (Stoney, 2015). Many employers consider personal internet activity during work hours a diversion that distracts attention and impairs task performance (Min, 2017). Employee cyberloafing activities can cost organizations $183 billion annually. This amount included lack of productivity, unnecessary use of broadband that should be allocated to business use, legal

issues, the risk regarding patient privacy disclosures, and other related costs (Jandaghi et al., 2015). The general problem is that social media use in the workplace, or cyberloafing, and or other activity that is focused on a personal smartphone represents a distraction from the tasks that must be performed to fulfill work duties (McBride, 2015; Sampat & Basu, 2017).

Distracted nurses who actively participate in non-work internet activities may divert their attention from patient care (Cho & Lee, 2016; McBride, 2015). The topic of distracted nurses has not been addressed in any major studies on preventing medical error due to cyberloafing, leaving a significant gap in the scholarly literature (Ford, 2018; Papadakos & Berman, 2017). The specific problem is the personal smartphone use by nurses in the hospital settings has resulted in distracted patient care, leading to the wrongful release of patient's information, medical errors, injury, or preventable patient death (Papadakos & Berman, 2017; Ross, 2018; Sage & Hardell, 2018).

Purpose of the Study

The purpose of this qualitative, single case study with embedded units was to describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. Several self-reported studies concluded that employee participation in non-work related social media activities result in decreased work performance, as opposed to employees who do not engage in social networking activities at work (Aljohani, 2018; Bautista, 2019; Flynn et al., 2018; Pucciarelli et al., 2019). A single case study design with embedded units (Yin, 2017) was used to gain a deeper understanding of the perceptions of the nurse regarding distracted

patient care while participating in personal social media or other smartphone-related activities on their mobile devices. The researcher ensured that triangulation of various data sources was utilized to increase the trustworthiness of the data collected (Fusch & Ness, 2015; Yin, 2017). Meeting the purpose of the study may advance knowledge in patient care management.

Research Questions

What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

Conceptual Framework

Baron's (1986) distraction-conflict theory provided a theoretical lens for exploring the influence that distractions and interruptions have on work performance. The distraction-conflict theory can be defined by three conceptual components (1) other individuals are a distraction; (2) the distraction can develop into the employees' attentional conflict and; (3) attentional conflict increases focus on the secondary task. This increase in focus on the secondary task progresses to impaired performance and motor behavior on complex tasks. In an updated extension of Baron's (1986) theoretical work of distraction on work performance, Min (2017) concluded that social network sites could disturb or enhance the performance of different types of tasks differently, thus influencing the sustainability of task performance. Min's updated extension of distraction-conflict theory provides insight into evaluating personal smartphone use as a technology that may distract nurses from their primary tasks in the clinical setting.

Baron's (1986) distraction-conflict theory suggests that interruptions inhibit the ability to focus on the required information to perform their primary task. Distraction is defined as any stimuli that are not relevant to the primary task. Specifically, the primary task and the distraction to use their mobile device during work may require different sensory channels. As a result, the distraction and the primary task may be ignored or processed simultaneously with the primary task (Baron, 1986; Brooks et al., 2017). For example, the theory is similarly defined as an activity or something, both internally and externally, that directs the primary task performer's attention away from the activity.

The divided attentional conflict, in this case, the nurse's personal smartphone use creates a distraction that is difficult to ignore, and the nurse cannot attend to the required task, i.e., patient care and smartphone use simultaneously (Aguilera-Manrique et al., 2018; McBride et al., 2015). The distraction may positively affect the primary task performance; however, the same distraction may negatively affect the complex task performance (McBride & LeVasseur, 2017; Min, 2017).

Baron (1986) suggested that the cause may have non-social or social origins, and approximately three settings may prompt the conflict: (1) the real distraction is hard to ignore and maybe interesting; (2) the pressure is present to complete a task accurately and quickly; (3) performing the task and the distractor at the same time is either impossible to achieve or difficult (Baron, 1986). Min's (2017) extension of Baron's (1986) theory has been further validated by Shakki et al. (2019), who concluded that the application of social networks at the workplace could have negative consequences, and specific rules need to be developed regarding the use of social networks in specific organizational

environments. Further studies updating research on employee distraction and mobile phones (Chen et al., 2020; Neștian et al., 2020; Priyadarshini et al., 2020) continue to appear in the extant literature and will be reviewed in detail in Chapter 2.

Nature of the Study

The study was a qualitative case study that described the nurse's perception of distracted patient care while participating in non-work activities on their personal mobile device. One of the strengths of case study research incorporates numerous available approaches to explore complex social phenomena (Yin, 2017). Nursing practices, specifically the perception of distracted patient care while participating in non-work activities on their mobile device during work, allowed the researcher to explore the issues from different perspectives (Taylor, 2013).

Qualitative research methods include several methods, for example, phenomenology, case studies, grounded theory, ethnography, narrative research and data collection methods, observation, private interviews, and focus groups. Qualitative research, by design, is focused on an aspect of society and is generated by words that are, eventually, summarized by themes (McCuster & Gunaydin, 2015). Qualitative and quantitative research must include an explicit, systematic, and disciplined approach. The qualitative researcher generally explores the meanings and insights in a given situation and chooses the appropriate design based on several factors (Levitt et al., 2017).

Qualitative research literature focused on medical and clinical research is gaining a solid reputation and provides insight into health care workers' lived experiences (Moon et al., 2013). The distracted worker phenomenon is a widespread activity in the

workplace, regardless of setting. As observed by a purposeful sample of nurses, distracted patient care was explored to determine the state of distracted patient care due to the use of personal mobile devices by medical personnel in health care settings (Marty-Dugas et al., 2018; Scott et al., 2017).

This case study used a purposive sample of nurses who perceived that their personal mobile device at work created distracted patient care. Purposive sampling was an appropriate approach that allowed for an intentional selection of participants who met the principle established by the researcher (Lehnert et al., 2016). According to Yin (2017), a small number of participants, can incorporate an appropriate sample size for a case study with relevant experience in the phenomena. Some qualitative studies may require up to 40 participants to satisfy the needed saturation for data and themes; however, 12 – 15 participants are the norm, dependent on how broadly the study is defined (Moon et al., 2013; Stake, 2010).

Definitions

Blog: An individual who typically maintains and publishes an informally written website and composes regular diary or journal entries that describe their interpretation of events or other material. The discussion may also include visuals or videos. The entries are usually displayed in reverse chronological order (Palfrey & Gasser, 2008).

Cyberloafing/cyberslacking: Employees who participate in personal internet activities during work hours (Jia et al., 2013).

Distraction: Distraction is defined as any stimuli, self-imposed or external, that are not relevant to the primary task (Baron, 1986).

Health Insurance Portability and Accountability Act (HIPAA) of 1996: Health Insurance Portability and Accountability Act that provides standards for privacy that protect patients' medical records and all other health information (Ratcliff, 2015).

Interruptions: An externally initiated intrusive task that is unplanned and unscheduled that leads to a temporal and cognitive delay or stops the completion of the task at hand. The interruption necessitates a transfer of attention from the primary task to a secondary task (Vaisman & Wu, 2017).

Microblog: The condensed version of a blog, which involves character limitations. Twitter is an example of a microblog (Henderson & Dahnke, 2015).

Professional Boundaries: Term used to describe "the boundary between what is acceptable and not acceptable for a nurse to do", both at work and outside of the work environment (Green, 2017).

Protected Health Information (PHI): Within the HIPAA law, PHI delineates the individually identifiable health information communicated to only HIPAA-covered entities or business associates. All forms of communication are included, e.g., verbal, electronic, and paper (Ratcliff, 2015).

Social Media Platform or Sites: A comprehensive moniker that describes the many activities that incorporate collective, interactive social technology that includes communication that is written, photographs, graphics, videos, and audio clips. Popular social networking sites include YouTube, Facebook, Instagram, and microblog Twitter (Palfrey & Gasser, 2008).

Social networking: The popularity of the internet enables connection for existing relationships and introduction to new people worldwide through one or more areas of interest. For example, a social network can include members connected through friendship, jobs or organizations, school, clubs, and interests (Dunbar, 2016).

Assumptions

For this study, three major assumptions drove the data collection and analysis. The first assumption is that the nurses' daily experiences in the workplace were transparent throughout the research study, which resulted in an honest conversation from the interviews conducted and data collected, and identified personal smartphone use in the workplace (Cleland, 2017). The approaches in qualitative research are geared toward interpretation and understanding (Eriksson & Kovalainen, 2015; Levitt et al., 2017). The knowledge gap was addressed by using a single case study qualitative methodology to obtain information from the nurses who use their personal smartphone at work, and continually searching for methods to discover, explain, and comprehend the complexities of the experiences (Korstjens & Moser, 2017).

The second assumption is that nurses provided factual instances that have taken place in their work environment so that the researcher's integrity is not compromised. It was also assumed that the data gathered, which included in-depth interviews, a focus group, an open-ended questionnaire, recording, coding, and data analysis, were collected and recorded without any adjustments (Patton, 2014). Therefore, it was assumed that there was a follow-up of transcriptions that coincided with the interview data collected to ensure accuracy. It was assumed that participants provided open and detailed descriptions

during the interview process that provided for a deeper understanding of the benefits and challenges associated with personal smartphone use in the workplace (Patton, 2002).

Scope and Delimitations

The scope is defined as the boundaries and parameters of the study (Patton, 2014). The focus of this study was based on the perceptions of nurses who use their personal smartphone at work. By the nature of the role, nurses have the most frequent and direct contact with patients (Kalankova et al., 2019). The patient is aware of the nurse's interactions and expects the nurse's full attention during their tasks. The attention directed to the patient, without distraction, is vital during medication distribution, taking vitals, and other clinical tasks (Kim et al., 2019; Ross, 2018).

A gap exists in the literature on the actual perceptions of the nurse and their use of their personal smartphone in the workplace (McBride, 2015). This study may inform organizations that nurses' personal smartphone use in the hospital settings may result in distracted patient care. The distraction may lead to wrongful release of patient's information, medical errors, injury or preventable patient death (Ross, 2018; Papadakos & Berman, 2017; Sage & Hardell, 2018).

The alignment of the scope and delimitation is an important aspect of the research process and refers to the topics, concepts, and boundaries that define the study (Snelson, 2016). The delimitations of this study dealt with what was included and excluded from the study sample (Sampson, 2012). The unit of analysis of this study was working registered or licensed nurses over the age of 21 who work directly in patient care. The

scope of this study included registered or licensed nurses with direct patient care responsibilities.

The delimitations are the limiting aspects of the study beyond the researcher's control (Sampson, 2012) included the focus on the nursing population, which falls within the general health care provider population. Physicians, medical residents, radiologists, pharmacists, patient care assistants, and other patient-facing health care providers were excluded from this study to focus on a gap in the literature that is specific for nurses. Purposeful criterion was used to recruit the participants for this case study. Participants were screened with the following criteria: nurses 21 years old or older, and employed as a registered or licensed nurse currently assigned to direct patient care (Patton, 2014).

Transferability, as a potential for this qualitative, single case study, assists the researcher and readers in understanding the phenomena of the study (Abdalla et al., 2018; Nowell et al., 2017). To achieve transferability, I provided the description of the participants, settings, and findings of the study, which allowed readers to formulate conclusions that would apply to other circumstances.

Limitations

Limitations refer to the uncontrollable features of a study that are likely to affect the outcome (Flick, 2014). The researcher needs to note any limitations when undertaking checks on the research design or when considering broader applications of the evidence that they encounter or consider (Baxter & Jack, 2008). The appropriate research practice decisions are dependent on the context, both social and ethical, as it relates to the research questions (Stewart & Gapp, 2017).

The decisions may become evident as the research is in progress, for example, the difficulty to gain access to the particular study group; or may become evident as the analysis and interpretation are being completed or, missing experiences or perspectives among the study population (Stewart & Gapp, 2017). The construct of trustworthiness established by the comparison and evidence is a continual interaction, absorption, and reflection that the qualitative researcher conducted related to data collection, analysis, and the interpretation processes (Nowell et al., 2017; Stewart & Gapp, 2017). In order to ensure dependability, participant qualifications were confirmed, consistent open-ended and semi-structured interviews were conducted and recorded and transcribed verbatim. A homogenous target population and the subsequent descriptive stories that included the lived experiences, methodology, and interview questions should be compatible to findings in further studies (Cope, 2014; Jorrin Abellan, 2016; Sowicz et al., 2019). The mitigation of bias in this study was realized through methodological rigor and the validation of participants (Ravitch & Carl, 2015).

There are three study limitations. First, the final number of study participants and, consequently, the study may not be generalized to other populations (Patton, 2014). Second, the personal smartphone use of the nurses may vary and may not be representative of the different nursing populations. The collection of similar information from each study participant does not pose a problem with credibility, as each nurse is considered unique with viable information and perspectives (Patton, 2014). Third, the participant may not respond to some of the questions, which is their right to consider the question intrusive or unpleasant. The lack of response could impact the study findings.

Capturing the perspectives of the nurses who live them, without the preconceptions and values held by the researcher, represents important meaning (Yin, 2011). To address limitations, the researcher ensured that triangulation of the semi-structured interviews, the focus group interview and the open-ended questionnaire were utilized to increase the trustworthiness of the data collected (Fusch & Ness, 2015; Yin, 2017). The result of the triangulation of the multiple sources of data allowed for the broader recognition of patterns. The triangulation process increased the depth and consistency of similar coding and themes that emerged from the 3 sources of data. For this study, the objective was to understand, capture, and record the data from the semi-structured interviews and triangulate the results of the focus group interview and the open-ended questionnaire results. The results revealed that similar coding and themes emerged from the 3 data sources. The use of methodological triangulation of data increased validity and reliability and supported the overall trustworthiness of the study.

Significance of the Study

The significance of a study must identify and address why it is important to fill a knowledge gap (Merriam & Tisdell, 2016). This study is important because it may address a problem specific to nurses' perceptions of their use of smartphones at work (Ford, 2018; Papadakos & Berman, 2017). The study may also extend the knowledge based on the empirical evidence specific to the nurses' perception and the explanation related to the distraction-conflict theory's premise that the use of the smartphone conflicts with their primary patient-facing task (Min, 2017). The results and recommendations that arise from this research may prove helpful to leaders and managers, and human resources

departments in health care organizations. The perceptions and insight of the nurses will provide a professional application that may contribute to the formation of strategies, education, and policies that affect positive social change that heightens the awareness of distracted heath care (DeWane et al., 2019; O'Connor et al., 2016).

Significance to Practice

The significance of this study was to identify and describe the perceptions of nurses' use of their smartphone at work. In the nursing practice, the concept of nurse-patient interaction includes the ability of the nurse to listen, understand and positively respond to the patient (McNally et al., 2017; Winland-Brown et al., 2015). In some cases, the nurse-patient interaction may be compromised if the nurse is distracted by their personal smartphone. Patients may perceive that the nurse is focused on their smartphone instead of providing care. The impact on perceived patient care, professional nursing accountability, and responsibility for health care institutions are at stake (Mamykina et al., 2017; Zheng & Lee, 2016). Policies and procedures to develop accountability and the responsibility of nurses include guidelines on the practical use and application of personal smartphones in the workplace (De Gagne et al., 2018; Mariano et al., 2018).

According to McBride (2015), there is a gap in the literature on data-based studies documenting the problematic use of mobile devices in the health care workplace among nurses. The study may fill the gap in the literature and contribute to the practice of nursing management by providing information to nurses and leadership for the continuing challenge of distracted nurses who use their mobile device during work hours.

This study may contribute to the gap in knowledge that, specifically, affects nursing and, ultimately, patient care (Sasangohar et al., 2014; Schroers, 2018).

Significance to Theory

Baron's (1986) distraction-conflict theory was used as the conceptual framework for the study. The new qualitative data of the study will offer an original contribution to Baron's theory which expands to incorporate the personal smartphone use by nurses in the hospital setting that result in distracted patient care (Papadakos & Berman, 2017; Ross, 2018; Sage & Hardell, 2018). In an updated extension of Baron's (1986) theoretical work of distraction on work performance, Min (2017) concluded that social network sites can disturb or enhance the performance of different types of tasks differently, thus influencing the sustainability of task performance. Min's updated extension of distraction-conflict theory provides insight into evaluating personal smartphone use as a technology that may distract nurses from their primary tasks in the clinical setting.

Although several qualitative studies concluded that nurses use their personal device while on duty, few studies focused on nurses' perceptions of their smartphone during work. This study may advance theory from a nursing management perspective by describing the perceptions of possible distracting patient care provided by nurses who participate in cyberloafing or other non-work-related smartphone activities. The findings will also contribute application and expansion of the distraction-conflict theory to explain the perceptions of nurses who use their smartphone at work. This study may provide the qualitative study for distracted nursing behaviors that may positively or negatively impact

nursing patient care and may provide an effective and appropriate advancement to practice.

Significance to Social Change

The study may provide an insight into the lived experiences, and contribute to positive social change by providing solution-based information focused on nurses and their perceptions of personal smartphone use or cyberloafing activities that may result in distracted patient care and, inadvertent, release of protected health information. One of the risks in the nurse's use of social media is the violation of the patient's privacy, confidentiality and health information. The establishment of trust and care between the patient and the nurse may be compromised, and the nurse and the health care institution penalized due to a negligent social media post (Henderson & Dahnke, 2015).

This study may contribute to understanding the effects of performance due to social media or other smartphone-related activities. The awareness of nurses' ability to balance their smartphone use, and their job performance may increase the positive aspects and minimize the distractions and negative effects (Wu et al., 2018). The findings may also provide guidance for nursing management to define policies and practices that may minimize distracted patient care based on nursing smartphone use (Moon et al., 2013).

Summary and Transition

According to McBride (2015), the use of mobile devices by nurses in the workplace not only exposes patient information to reveal privacy and security risks, and it could also provide a source of distraction that may divert care from the patient. The use

of personal smartphones at the bedside or while providing care may contribute to the perception of patients, who accept it as an accurate statement that the nurse is less engaged in their care and more engaged in their use of the smartphone (Mariano et al., 2018). According to McBride (2015), there is a gap in the literature on data-based studies documenting the problematic use of mobile devices in the health care workplace among nurses.

The general problem is focused on the non-work-related smartphone activities, including cyberloafing, checking email, etc., for the general population. The specific problem is focused on the nurse's perception of smartphone use at work. The use of smartphones and other handheld devices has become a vital part of the everyday lives of health care professionals. The use of portable devices has dramatically enhanced, and improved communication, and the information can be assessed online 24 hours a day, 365 days a year. The quick availability of information for the health care provider through email, messaging, and websites provides feedback to colleagues and patients, access to lab tests, reference materials, and medical records. On the other hand, the use of the personal smartphone may place the privacy and security of patients at risk (Attri et al., 2016).

The purpose of the qualitative single case study with embedded units was to describe the nurses' perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. The distraction-conflict theory provided the framework of the study. The literature review, Chapter 2, provide additional

details regarding the theory and the current research related to nurses use of the smartphone at work.

Chapter 2: Literature Review

The specific problem is that personal smartphone use by nurses in hospital settings has resulted in distracted patient care, leading to the wrongful release of patient's information, medical errors, injury, or preventable patient death (Papadakos & Berman, 2017; Ross, 2018; Sage & Hardell, 2018). The use of mobile devices by nurses in the workplace, according to McBride (2015), exposes patient information, which creates privacy and security risks. The purpose of this qualitative single case study was to describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses.

In Chapter 2, I present the literature search strategy and the conceptual framework that guides this empirical study. The literature review of this chapter will present a synthesis of knowledge and critical analysis of scholarly sources on the following topics: *Cyberloafing, Personal Smartphone Use in the Health Care Industry, Nurses Personal Smartphone Use in the Clinical Workplace, HIPAA Privacy Concerns, and Professional Boundaries and Social Media Participation in Nursing*.

Literature Search Strategy

The literature search focused on peer-reviewed research, specifically focused on the perceived and actual impact of distracted care by bedside hospital workers who use personal devices during work time. Google Scholar was used to identify articles, and Walden University's Library was used to research and review the articles. The library databases used include ABI/INFORM Collection, Academic Search Complete, ProQuest

Central, ProQuest Nursing and Allied Health Source, Sage Journals, Thoreau Multi-Database Search, and Walden University Dissertation and Thesis database.

The key search terms used during the library database search include: *Personal Social Media Use in Hospitals, Nursing Distracted Workers and Smartphone Use in Hospitals, Cyberloafing in the Workplace, Social Media Use at Work, Smartphone Use in Hospitals, Mobile Device Use in Hospitals, Health Care Professionals' Social Media Use, Bring Your Own Device, Distraction of Clinicians by Smartphones, Health Care Social Media, Hospital Registered Nurses Non-Work Related Use, Health Care Work Settings Smartphone Usage, Acute Care Setting Smartphone Use, Clinical Questions Smartphone Use, Surgical Profession Smartphone Use, Use of Smartphones Medicine Units, Use of Smartphones, Perceptions of the Use Personal Smartphones, Clinical Use Doctors and Nurses, Patient Perception Usage of Smartphones, Clinical Environment Personal Smartphones, Perception of Efficacy Smartphone Text Messaging, Social Media Patient Care, Social Media Literature Review, Social Media Problematic Internet Use, Distractions in the Operating Room, Operating Room Flow Distractions, Trauma Operating Room Interruptions and Distractions, Human Error Interruptions and Distractions Medication Administration Interruptions and Distractions, Nursing Domain Professional Boundaries in Health Care, Health Care and Professional Boundaries, Patient Care Professional Boundaries, On-Line Social Networks Physician Relationship Boundaries, Physician Responsibility Social Media Era, Health Care Professional Social Media, Social Media Etiquette Nurses and Physicians, Patient Perception of Provider Professional Boundaries, HIPAA Privacy Violations, Examples of Social Media HIPAA*

Violations, Nurses Fired for Posting on Social Media, HIPAA Violation Cases, Nurse HIPAA Violation Cases, Professional Boundaries in Nursing.

The primary objective in the literature search strategy was to identify peer-reviewed scholarly papers that provided the background and rationale for the need for this study. I searched for theoretical literature for studies that focused on nurses who use their personal smartphone during work and relevant research on the possible consequences of distracted patient care leading to the wrongful release of patient's information, medical errors, injury or preventable death (Papadakos & Berman, 2017; Ross, 2018; Sage & Hardell, 2018). What I discovered in updated peer-reviewed papers was that nurses face challenges when they use their personal smartphone during work and while providing clinical care.

Conceptual Framework

The study is framed by Baron's (1986) distraction-conflict theory which explored the influence that distractions and interruptions have on work performance. The distraction-conflict theory argues that the mere presence of others creates an elevated drive that contributes to the conflict (Baron, 1986). The awareness of others from the nurse can distract and improve or impair their performance (McBride & LeVasseur, 2017; Pucciarelli et al., 2019).

Smartphone use can provide a similar presence that creates a feeling of personal, thoughtful, or intimate interactions that simulate distraction of primary and complex tasks. Even though virtual presence is evident during personal smartphone use and does not occur in real-time, the online presence and the distraction initiated by technology

have a similar impact as the presence of another person causing a distraction (Min, 2017). Distraction-conflict theory is the appropriate framework for interpreting the distracted nurses' perceptions when any impetuses are irrelevant to the primary task that must be completed (Baron, 1986). Min's (2017) updated extension of distraction-conflict theory provides insight into evaluating personal smartphone use as a technology that may distract nurses from their primary tasks in the clinical setting.

Research commenced in the past about distracted nurses indicated that disruptions that provide value to patients should be supported, and distractions that are detrimental to patients should focus on continuous improvement work efforts (Spooner et al., 2019). The research focused on Certified Registered Nurse Anesthetists (CRNAs) highlighted that patient safety has always been the primary priority. Research has been conducted to identify and reduce distractions in the operating room that negatively affect patient safety. An example of an identified distraction included the extraneous noise created by staff in the operating room, which directly correlated to communication quality and errors (Snoots & Wands, 2016).

Distraction-Conflict Theory Research

According to Baron (1986), a distraction is any stimuli that is not relevant to a subject's primary task, which is the activity that requires all of his/her attention. Research conducted that extended the distraction-conflict theory included a pilot that incorporated a sample size of 48 by Nicholson et al. (2005), which hypothesized that if a task is complex, the subjects without a distraction will perform substantially better than the subjects in a low-level distraction situation. The second hypothesis posits that the

subjects in a low-level situation will perform significantly better when presented with a complex task than the subjects in a high-level distraction situation. The result concluded that the performance for subjects in the complex task & no distraction group was significantly higher than the complex task & low-level distraction group.

An exploratory study used the theoretical lens of the distraction-conflict theory to describe the effects social media usage has on performance and well-being. The results concluded that social media use can be detrimental to the individual's performance and well-being (Brooks, 2015). An example of research conducted through the lens of the distraction-conflict theory included the investigation of technostress, the negative state that is associated with the overuse of technology, and social media provoked in the workplace (Brooks et al., 2017). The individuals' social media participation may assist with the coping with the distraction and dealing with negative feelings of social media use during times that are not appropriate to the task at hand (Hayes et al., 2020).

Distraction in the Workplace

Research has contributed to the expansion of the distraction-conflict theory and the focus of the employee's primary tasks has been applied to social media usage. Specifically; an individual's social media interactions during a time when other non-work related tasks are more relevant during their work time (Aguilera-Manrique et al., 2018; Brooks et al., 2017). Distraction-conflict theory has been applied to a Brooks et al. (2017) study, which focused on techno-stress induced by social media. According to the authors, techno-stress is defined as a modern disease accentuated by the individuals' inability to cope with technologies that elicit negative attitudes, behaviors, thoughts, and physical

states. The symptoms of techno-stress include an inability to concentrate, the feeling of loss of control, and irritability. Distraction-conflict theory, as it provided a lens for this study, suggests that in the workplace, individuals are subject to distractions caused by secondary tasks which may limit their ability to cognitively process the information required to complete a primary task (Baron, 1986). The distractions may cause attentional conflict between the primary tasks and the distractor, specifically, when the distraction, social media usage, is interesting and or hard to ignore (Baron, 1986; Brooks et al., 2017). Due to the availability of smartphones or other personal devices, social media and ease of communication are rapidly changing societal trends. The knowledge that an individual's friends or family are available through social media can create a distraction (Brooks, 2015; Min, 2017).

On average, an employee is interrupted at least six to eight times a day, which comprises 28% of the workday. The distraction of social media at work may include alerts for new text messages and other updates that demand the employee's attention despite the primary task that requires an immediate response (Wu et al., 2018). For example, a result of one study that consisted of 557 anesthesiologists, 41% of the respondents self-reported that they witnessed their colleagues actively use their personal smartphone during procedures that may have negative medical issues caused by smartphone use (Pinar et al., 2016). Distracted employees are engaged in internet-related, not work during 60 to 80% of their workday (Koay & Soh, 2019).

Even though the presence of individuals is virtual and not in real-time, participation in internet activities can provide the same level of psychological arousal.

Recent studies have extended the concept of social presence from physical to virtual initiations initiated by technology (Min, 2017). In one study, distractions based on social media participation during work were confirmed by the participants. The participants revealed that they could not control their social media usage during work hours. It was also reported that participants were immersed in their personal Facebook, Instagram, and WhatsApp accounts during work time and were distracted from their primary tasks frequently during the workday (Priyadarshini et al., 2020).

The digital distraction of individuals has been attributed to high levels of impulsiveness and habitual participation in technology (Attri et al., 2016). A recent study concluded that when the behavior to participate in technology frequently is engrained, the individual was easily triggered by the environmental cues, including their smartphone alerts, with little conscious or mental effort (Chen et al., 2020). Smartphone use is prevalent, and social networking enables employees to devote part of their workday to work and participation in the virtual space. The negative consequence of participation in social networking during work time may result in a lack of focus on primary tasks and a loss of job performance (Shakki et al., 2019).

Health Care Distractions

Workflow distractions are common in health care and are not necessarily viewed as negative; however, the necessity to switch from the primary task to a secondary or nonessential task may interfere with the primary task and cause errors in the nurses' responsibilities (Elfering et al., 2014; Min, 2017). For example, the patient in the emergency department will initiate a triage that demands immediate emergency

treatment. During the emergency triage intake, the nurse will encounter interruptions that cause distractions to their primary task and may provide a poor triage decision (Johnson et al., 2018). Due to smartphone use in health care, high levels of distraction pose a constant threat to patient care and possibly patient safety (Johnson et al., 2018).

The increasing concerns include the negative effect on the nurses' performance and their employer's reputation as a safe, skilled, and patient-centric facility (Aljohani, 2018). Min's (2017) expansion of the distraction-conflict theory posits that the nurse's use of their personal smartphone at work may be detrimental to the performance of complex, primary tasks that require greater levels of cognitive processing (Min, 2017). A study that included 15 participants determined that they unanimously agreed that the excessive use of social media in the workplace caused a distraction at work. The nurses' undivided focus during the primary task is imperative and highly impacted by distractions, regardless of the frequency due to the high potential that may result in patient harm, for example, preparation or during procedures in the operating room or dispensing medication (Cohen et al., 2018; Feil, 2017).

Based on the conceptual foundation of the distraction-conflict theory, which emphases the interference of the primary task to focus on secondary tasks, the nurse's interruption may be self-imposed or externally initiated by the use of the nurses' smartphone use or mobile device during work (Baron, 1986; Min, 2017). A self-reported study concluded that electronic distractions are an emerging problem in health care and been shown to impact patient safety (McBride, 2015). Another quantitative research study reported that most licensed, registered nurses accept as true that the distraction

caused by the use of their personal smartphone during their shift on the hospital floor increases significant safety concerns (McBride, 2015).

Distractions from the primary task based on interruptions, including the use of the nurse's smartphone, occur and are common in the hectic clinical setting. Previous quantitative studies reported interruptions indirect patient nursing care attributed to personal smartphone use, which contributed to an increase in the number of clinical errors and procedural failures, including medication dosage errors (Cole et al., 2016). The medication errors caused by nurses, based on the distraction from the primary task may be mitigated which reduces medication administration errors and lessen harm to patients (Westbrook et al., 2017). The distractions contributed to a substantial addition to the workload of the nurse. The primary source of the disruption to registered nurses was related to non-patient-related interruptions (Johnson et al., 2017). Increased distractions were also associated with a significant increase in the task completion time. In addition, the lens of the distraction-conflict theory indicates that the interrupted primary task increased cognitive workload (Campoe & Giuliano, 2017; Schroers, 2018).

The findings from the literature review will benefit the current study with this framework, and provide a deeper understanding of nurses' perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use.

Literature Review

The internet has transformed the daily routine of billions of individuals worldwide, both in their personal and work environments (Ciolfi & de Carvalho, 2014; Karaoglan Yilmaz et al., 2015). Emergent technologies, including tablets and improved

mobile phone technology, have exponentially increased over the years (Rolls et al., 2016). The constant smartphone-enabled internet-based connection to work and home has become a normal condition of the instantaneous information exchange of present-day life (Beauregard et al., 2017; Russo et al., 2019). Popular types of social media include social media sites, such as Facebook, Instagram, LinkedIn, blogs, video sites and sharing, online chat rooms, blogs, and microblogs (Henderson & Dahnke, 2015).

Mobile phones are owned by sixty-six percent of the world's 7.5 billion individuals, and fifty percent of the global population is online. Thirty-four percent or 2.459 billion globally participate in social media activities from their smartphone or other mobile devices. The largest percentage of social media activity is from North America, and approximately 66% of regions' population participates in social media and, 58% use their mobile device to connect with social networks. Ninety-five percent of Americans own cell phones, and smartphone ownership has substantially increased worldwide from 35% to 77% in 2018 (DeWane et al., 2019).

The smartphone was defined by the Telecommunications Industry Association in 2010 as a small and portable mobile device that is the most advanced computing ability and connectivity available (Attri et al., 2016). The smartphone has intelligence similar to the personal computer. However, the smartphone offers the portability and robust operating systems and software that allow complete third party applications platforms. The smartphone has more memory and processing power and the connectivity of Wi-Fi and Bluetooth, and Multimedia applications, for example, music and video downloads, photos, and GPS functions. The examples of smartphones include, but are not limited to,

Apple iPhones and Android devices (Attri et al., 2016). Personal mobile devices, including smartphones, Apple Watch, Android Wear, and similar technology, have become an unparalleled and indispensable convenience to access all social media activity in the daily lives of millions (Lee, 2016; McBride & LeVasseur, 2017).

A self-reported quantitative nursing study indicated that 98.6% owned a personal mobile device, 18.75% of the nurses used their devices for non-work-related texts or emails, and 5.15% participated in shopping activities, 2.73% played games, and 29.88% of the respondents reported that the use of their personal device decreased stress. However, 69.06% of the respondents reported that the personal use of their devices harmed patient care; 69.41% of the respondents acknowledged that the use of their personal device caused them to miss personal vital clinical information; and 39.01% believe that the use of personal devices is always a distraction during patient care (McBride & LeVasseur, 2017).

Distractions from the primary task have been attributed to a factor that causes human errors. An interruption or distraction is defined as an external intrusion of a secondary task, which leads to the cessation of the primary task (Sasangohar et al., 2014). The compulsive need to monitor their smartphone for new messages, missed calls, or social networking updates during all hours, both at work and home (Russo et al., 2019; Vearrier et al., 2018).

On average, nurses are interrupted every nine minutes, and supporting research indicates the disruption created a detrimental effect on medication administration (Palese et al., 2019; Papadakos & Berman, 2017). Patients who participated in a study also

recognized the potential of distracted nurses during medication administration (Schroers, 2018). Medical errors are the third primary cause of death in the United States. Medication errors are the most prevalent of all medical errors and account for an estimated 7 million impacted patients by preventable errors each year. Thousands of patients die each year due to medication errors and are a serious threat to patient safety and a significant public health concern. Medication errors create a lack of trust in the health care system and the emotional toll on the provider who made the error, malpractice and other costs. It is believed that the annual cost of medication errors is twenty-one billion dollars (Schroers, 2018). In the United States, 98,000 preventable hospital deaths are attributable to health system errors (Berg et al., 2016).

The risk for medication errors occurs during prescribing, transcribing, dispensing, and administering medication (Ross, 2018; Sage & Hardell, 2018). According to the Agency for Health Care Research and Quality, the final stage, administrating medication, which nurses primarily perform, is where the highest numbers of errors occur. Medication administering consists of 40% of the nurses' workday, allowing errors during distraction to exist. Nurses perceive distractions as the leading cause of medication administration errors. Distractions also lead to increased task completion. For example, distractions increased medication administration time from seven minutes without interruption to 10.5 minutes with one or two interruptions. Administering time increased to sixteen minutes, with three to five interruptions (Schroers, 2018). Patients have witnessed the potentially detrimental effects of external sources of interruptions for the nurse who is concentrating on a primary task (Palese et al., 2019). Smartphones can

facilitate distractions during work. Employees may receive hundreds of notifications from their family, personal, and work contacts generating distractions and mistakes, even when they choose to ignore them (Russo et al., 2019; Sampat & Basu, 2017).

A Social Media in the Workplace Pew Research Report identified that 2,003 American adults aged 18 to 64 concluded that 34% use social media at work to take a mental break among the currently employed survey participants. Eighty-nine percent of adults in the United States use the internet, and seventy-two percent of the participants own a smartphone (Olmstead et al., 2016). Research supports the perception that social media use in the workplace represents a distraction from the tasks performed to fulfill work duties. Sixty percent of workplace distractions are attributed to the use of technology. For example, an employee who reads and responds to a post on Facebook may feel supported with an immediate connection to others in their social network (McBride et al., 2015a). Social media sites, including Facebook, Snapchat, Instagram, YouTube, Twitter, and Pinterest, among others, have contributed to an individual's ability to divert attention and waste time at work. Employees spend at least 60% to 80% actively participating in non-work-related internet activities (Sampat & Basu, 2017; Ugrin & Pearson, 2013).

The regular use of smartphones has developed into an essential device in our daily lives and allows individuals to fulfill business and personal tasks. Research has suggested that the work-life and personal life may become unclear based on an increase in the use and dependence on social media (Ayyagari et al., 2011; Brooks et al., 2017; Tarafdar et al., 2014). The ability of the employee to participate in social media during their workday

has the potential to create a distraction from their primary tasks (Brooks et al., 2017; Harmon, 2014). The non-work-related use of social media may have a negative effect in the workplace. Distractions may create a potentially adverse effect. Employees are usually interrupted a minimum of six to eight times a day, and distracted interruptions constitute 28% of the workday. The smartphone and social media use reminders of new messages and updates that request the employee's immediate attention, regardless of the current primary task. Many employees may be dependent on social media or other smartphone activities and have become habituated to check their email, social media accounts, and other updates during work hours (Brooks, 2015; Wu et al., 2018).

Employees are working longer hours, and technological advances diminish the barrier between work and family realms. Social media may fulfill the need to connect with family and friends or professional acquaintances, both in their personal and work time. Smartphone use for social media or other aspects such as texting and email serves as a vehicle to exchange communication, task-related information or gather information in real-time for assistance, or collaboration (Stoney, 2015; Wu et al., 2018).

Cyberloafing

Thirty-seven percent of Americans work from home (or telecommute) at least two days a week. Telecommuting employees use their time to engage in work-related tasks, especially if their counterparts are located in different time zones (Soh et al., 2016). Besides, based on the need to work during personal time, employees may feel that they can participate in cyberloafing activities. Cyberloafing and extreme internet connectivity are intertwined. Individuals may regularly engage in personal internet activities while

working and participate in work tasks while home (Jia et al., 2013; Lowe-Calverley & Grive, 2017).

Cyberloafing is a relatively new term and was coined by Tony Cummins in a 1995 New York Daily News article. Cyberloafing was also named in a seminal scholarly paper (Jandaghi et al., 2015; Lim, 2002). The word cyberloafing is rooted in the prefix, cyber, which refers to phrases that are based on computer science, and a loafer is a person who wastes time. Definition of cyberloafing is described as a person who participates in the internet and computer-related activities that waste time conducting personal business instead of productively working (Jandaghi et al., 2015; Johnson & Indvik, 2004). Cyberslacking (also known as cyberloafing) refers to non-work-related internet use during work hours for personal reasons (Bock & Ho, 2009; Mastrangelo et al., 2006). Cyberslacking activities include sending emails, instant messages, and texting; internet surfing, participation in social media sites; reading blogs or vlogs; online gaming, and watching pornography (Andreassen et al., 2014; Ching & Thurasamy, 2017; Vitak et al., 2011).

A study conducted by Websence revealed that 61% of American workers participate in non-work-related activities. Time spent cyberloafing or similarly defined cyberslacking may use up to 56% of non-productive work hours (Konig & Caner de la Guardia, 2014). Individuals may engage in cyberloafing to cope with work stress (Askew et al., 2014; Lim & Chen, 2012). Studies have found that stressed and bored employees may view cyberslacking to relieve their negative equilibrium and may not perform their work duties and, participate in non-work-related internet activities to escape their

boredom or stress (Borkovich et al., 2016). During work stress and when performing routine work, cyberslacking may relieve anxiety and maybe constructive and heighten productivity (Beugre-Constant & Daeryong, 2006; Sampat & Basu, 2017).

The work environment, which may be comprised of flexible schedules, teams, and acceptance of personal devices in the workstation, has created the opportunity for cyberloafing. Social media sites, Twitter, Facebook, Snapchat, and others have contributed to the ways employees can actively participate in the distracting behavior and time-wasters that mimic the pre-internet activity of gossiping near the water cooler. According to Ugrin and Pearson (2013), employees spend 60 to 80% of their shift actively cyberloafing on tasks that do not work-related (Sampat & Basu, 2017).

Several self-reported studies concluded that employee participation in non-work-related social media activities disclosed decreased work performance instead of employees who did not engage in social networking activities at work (Andreassen et al., 2014). However, research showed that employees who work primarily in an office setting, and actively participate in cyberloafing 12% during their work time, increase their productivity by 9% versus those who do not participate in cyberloafing activities (Coker, 2011).

Employees participate in cyberslacking, in some cases, to avoid productivity and take a personal stance to rebel against the workplace. Garrett and Danziger (2008) focused on the act of cyberslacking determined that higher status employees who generally have more downtime, tend to participate in non-work related cyberslacking activities to compensate for their need to remain accessible to their employer 365 days a

year, 24 hours a day (Borkovich et al., 2016). The higher status employees were identified by four measures: occupational classification, household income, education, and autonomy. Gender differences were revealed, and male high-status employees were more likely to participate in non-work-related internet activity than female high-status employees. The study's significant findings concluded that the organizations' most valued and high-status employees were more likely to engage in non-work internet activities (Borkovich et al., 2016; Tabarsa et al., 2013).

Although employees are present and at work, they may not perform their best due to the lack of concentration, leading to distracted and reduced job performance (Wu et al., 2018). Employees with demanding work that includes deadlines do not allow time to participate in cyberslacking reported that their workload negatively impacted their use of personal internet use, which lead to burnout and additional stress (Andreassen et al., 2014). The study indicated that company time theft is a prevalent and costly dilemma and affects all employee levels (Borkovich et al., 2016).

While the use of social media to connect with co-workers and others has generally been portrayed as negative, some researchers suggest that cyberslacking may positively affect productivity. The individuals' need to take periodic breaks away from work can assist in their ability to promote creativity and flexibility (Bautista et al., 2018; Bautista & Lin, 2016). Short virtual office breaks for non-work-related internet activity may refresh an individual's work ethic (Garrett & Danziger, 2008). A survey conducted in Southern California established the time employees participated in Facebook to interact with co-workers.

Participation in Facebook resulted in improved job satisfaction and engagement. The longer the time spent interacting on Facebook with co-workers, the higher the satisfaction (Robertson & Kee, 2017). Hanna et al. (2017) and Robertson and Kee (2017) concluded that the use of Facebook use among co-workers reported a higher incidence of perceived job calling, which is a combination of finding a career aligned with personal meaning. In addition, based on the studies, it may be a misconception that time spent on Facebook is non-productive time that is distracted from work duties.

In effect, the time co-workers spent interacting on Facebook may encourage positive organizational collaboration that can increase the quality of their professional life. Furthermore, employees may have a greater feeling of belonging and commitment to the organization if their colleagues seem to have some authority or power (Bartels et al., 2019). Additionally, some organizations have experienced positive effects as a result of social media use in the workplace. The results concluded that positive social media communication can contribute to employee engagement; the ability to dialogue with members to share information, building relationships result in engaged employees who substantially involve themselves in the activities of the organization and develop a sense of shared understanding and belonging (Bartels et al., 2019; Hanna et al., 2017).

Smartphone use to participate in social media during work hours may positively benefit the nurse to relay educational materials to their patients, which may include support groups and social media sites focused on their health condition. If participation in social media activities during work hours is appropriately used, the nurse can direct the

patient to valuable tools that may assist in advancing public health (Bartels et al., 2019; Henderson & Dahnke, 2015).

Personal Smartphone Use in the Health Care Industry

The saturation of the smartphone and other devices has become pervasive in all industries and fields. The vast majority of Americans surveyed (95%) own cell phones and smartphone ownership has substantially increased from 35% to 77% in 2018. Medical faculty, residents, and students at a United States academic medical center surveyed in 2015 revealed that 99% of the respondents possessed a cell phone, and 95.2% owned a smartphone. Notably, 97.1% of the respondents carried their cell phones or smartphones with them to work (DeWane et al., 2019). Health care professionals use a wide range of social media platforms while simultaneously maintaining a professional environment. Based on the regulations and consequences of exposure of personal patient information, the health care provider must ensure that their participation in social media is not compromised (Rolls et al., 2016; Wagner et al., 2018).

The work environment for health care can be hectic, fast-paced, demanding and time-constrained. The health care provider must remain focused and is expected to perform their tasks with undivided attention. The health care provider may be subject to numerous interruptions that add to the complexity of their work and distract their focus on patient care. Several studies examined the effect of interruptions that impacted safety or patient outcomes. One study identified that interruptions contributed to short delays in patient care tasks, which in turn caused minor discomfort and inconveniences to the patients (Rivera-Rodriguez & Karsh, 2010; Weigl et al., 2016). Nurses frequently

distracted while performing patient care duties may overlook aspects of the primary tasks of performing patient care, for example, vitals, which result in medical errors (Cho & Lee, 2016; Kim et al., 2019).

The proliferation of smartphone use in the clinical setting has distracted doctoring, which limits the focus and attention of the physician and the patient encounter. In a 2012 survey, 85% of medical residents were distracted during rounds, and 48% of faculty acknowledged using smartphones for patient-care related issues while they were rounding. Thirty-seven percent of the residents and 12% of the faculty frequently used their smartphones for personal matters during their patient interaction. Reports of unprofessional behavior demonstrated by clinicians included: answering texts or phone calls at the bedside of patients while supervising procedures or speaking with other health care professionals. In the most extreme instances, clinicians distracted by their personal mobile devices, including smartphones and tablets, have caused substantial harm to patients, including death (DeWane et al., 2019; Vaisman & Wu, 2017).

The use and availability of mobile devices are a source of distraction for health care providers, and specific to the operating room, the user can create grave medical errors (DeWane et al., 2019; Feil, 2017). The need to remove smartphones or mobile devices from the operating room can be compared to the “sterile cockpit rules” for aviation. To reduce the number of accidents generated by the participation of staff in non-work-related conversations or nonflying tasks that are performed during the crucial risk portion of pilots for taxi, take-off, or approach to landing, the “sterile cockpit rule” is enacted. The rule applies to the entire crew, flight attendants, and pilots. The use of the

mobile device reduces the performance of the entire crew. The inability to remain compliant with the "sterile cockpit rule" ensures the crew's focus is based on safety. Two-three percent of all individuals can multitask. Most, as explored earlier in this study's distraction-conflict theory, have a measurable decrease in performance if we attempt to perform numerous simultaneous tasks (Attri et al., 2016; Sampat & Basu, 2017).

Distractions created surgical flow disruptions that impacted their workload within the context of the operating room (Feil, 2017). The increased workload caused by the disruption contributes to increased mental expectations and is associated with the surgeon's inferior technical performance. It is vital for the surgeon to establish a distraction-free surgical flow described by a minimum level of process deviations and disruptions (Weigl et al., 2016). For example, the predictable assignment of observing a patient's vital signs during surgery may be delayed. It is not uncommon for the provider, during a surgical procedure, to take a moment to send or read a text message, check their email, or log into Facebook.

The additional time a provider is distracted from the procedure, the more difficult it is for them to catch up or re-engage. An error opportunity is created during the time a provider is engaged in their smartphone activity. The American College of Surgeons (ACS) commented on the inappropriate use of smartphones in the operating room. The ACS stated that the willful use of a personal mobile device in the operating room, regardless if it is used for voice, email, social media, or other communication by the

surgeon or other members of the surgical team, may create a distraction and may negatively compromise patient care (Feil, 2017; Weigl et al., 2016).

As stated in one observational study, 27 provider events were attributed to the use of a portable personal device for non-work related activities during the operation. Activities included watching YouTube, browsing the internet, reviewing and participating in social media, taking a selfie, showing pictures of a vacation, looking at available houses to purchase online, and texting (Cohen et al., 2018). More invasive examples include when the surgeon asked the anesthesiologist to heparinize (add heparin to, blood or a vessel with blood, prevent it from coagulating) the patient. The anesthesiologist focused and using his personal computer and, based on the surgeon's request during the operation, had to discontinue using the computer, place the laptop on the chair behind him, and, at that time, administered the drug. Another case involved the surgeon, opening the patient's chest when his personal cell phone started to ring. The surgeon stopped opening the patient's chest and asked the nurse to take his phone out of his pocket, place it on his ear, and proceeded to have the conversation while he was operating.

Generally, most surgeries are relatively routine; however, the provider may perceive that they can accomplish the action to check a text message or read and send an email or participate in social media can be accomplished with little or no threat to the patient or the procedure. However, if the status of the procedure changes, it may severely compromise the ability to reestablish the cognitive engagement to respond in any unforeseen manner. When the providers divert their attention from the patient, important

information may go unnoticed, and the patient may unknowingly be subject to an adverse event (Cohen et al., 2018; Min, 2017).

The American Medical Association (AMA) highlighted the separation of personal and professional posts for surgeons. AMA recommendations include the attention to the privacy settings of social media accounts, and consideration to monitor personal and professional content through social media accounts. In addition, the AMA stresses that medical providers avoid using social media to communicate patient health information, posting content that may have negative or unintended consequences in the workplace or organization, and posts or discussions that may be linked with financial conflicts of interest (Bennett et al., 2018). The awareness that a distraction in care occurs when the seemingly harmless online interaction with patients may violate the professional boundaries of appropriate physician-patient relationships (Logghe et al., 2018; Wagner et al., 2018).

Seminal research conducted in the early 2000s (Morris-Docker et al., 2004) indicated that health care providers who provide direct patient care accessed the internet during the day and night during quiet times. However, since that time, handheld technology and the internet have expanded capabilities and include applications (apps) and social networking sites (Black et al., 2013). In 2009, 64% of American physicians used their smartphones, and an estimated 81% increase was predicted for 2012.

Only represent 27% of the community health centers in the United States use cell phones to communicate with patients. Based on the transactional nature of outpatient visits, cell phones are rarely used at community health centers for personal health

information access, medication monitoring, or chronic disease management support, and mobile wearable devices are seldom used to support clinical care or communication (Choi, 2016; Lee, 2016).

The use of mobile devices in the health care workplace not only exposes patients and information to reveal privacy and security risks, it could also provide a source of distraction that may divert care from the patient (Bautista et al., 2018; Buppert, 2018). Various studies identified the concept of distracted care as the primary disadvantage of the personal use of mobile devices in the clinical setting. Medical students expressed concern regarding distracted physicians during patient care encounters. Equally, tenured physicians were concerned that new physicians or students were distracted from learning and patient care when engaging in non-work-related activities on their mobile devices during clinical rounds. One patient stated that "mobile devices are an interruption to the interview with the patient, disrupting communication flow," and patients and other health care providers reported that when a nurse was observed using their personal mobile device at work, it was assumed that the activity included private texting and contributed to distracted patient care (Marty-Dugas et al., 2018; Scott et al., 2017).

The release of protected health information may damage the patient, the reputation of the health care institution and the nursing profession. Health care providers, including nurses, have been fired, and licenses have been revoked due to an intentional or unintentional patient privacy breach (De Gagne et al., 2018). Health care organizational policies, practices, and professional standards based on regulations or licensing often

warn providers regarding the negative consequences of inappropriate social media use (Ford, 2018; Gagnon & Sabus, 2015).

Based on the health care industry setting that may include critical life or death decisions, a minor error may cause harm to the patient. For example, a medical student was distracted by a text message and did not perform her primary task to stop an anticoagulation medicine for a postoperative patient (Gill et al., 2012; Gold, 2012). Distracted clinical care can lead to near-tragic consequences (Ross & Forgie, 2012). An example of distracted work performance was presented in 2001 when a patient received heart surgery in a hospital in Texas. It was discovered that during the procedure, the anesthesiologist was on his iPad while he was supposed to administer anesthesia and monitor vital signs. The doctor admitted that he posted messages on Facebook during the procedure. At the same time, the patient's blood oxygen was low enough for the patient to turn blue and ten hours after the surgery was pronounced dead (Dorsey, 2014).

Black et al. (2013) conducted an experiment in a Florida hospital emergency department and, during a 15-day observation period, determined the time the staff, including nurses, participated in Facebook during working hours. The study results concluded that employees spent 12 minutes an hour on Facebook during average volume, and time participating in Facebook increased with the volume of patients. McBride (2015) reported that results from a study of physicians may suggest that many clinicians are aware of their decreased or distracted performance. Smith et al. (2010) reported that 92.7% of the surveyed surgical technicians reported that their performance had not been negatively affected and, 98% reported that they were never distracted by their mobile

device. However, the self-reported errors may be attributable to a subconscious tendency to protect themselves from the emotional discomfort of their personal performance deficits (Kiekkas et al., 2009; McBride & LeVasseur, 2017).

Nurses Personal Smartphone Use in the Clinical Workplace

The use of smartphones in the clinical setting may cause concern among the patient and clinical team (Beauregard et al., 2017; Berg et al., 2016). A recent study highlighted themes based on the perceptions of nurse leaders, in which one of the themes indicated the lack of and perceptions of professionalism concerns. Smartphones were perceived as unprofessional behavior and portrayed the nurse as not providing the best care for their patients. The smartphone use was the priority, not the patient. Patient perceptions indicated that the nurse is drawn to the social media activity on their smartphone instead of providing care, sharing information, and actively participating in the treatment plan. The nurse's smartphone use while at the bedside may also negatively impact patient openness and engagement. Moreover, excessive use of the smartphone at the bedside may inhibit the opportunity for face-to-face interaction and impair social skills development that enables positive rapport and sensitivity (Mariano et al., 2018; McBride & LeVasseur, 2017).

Distracted nursing emerged as another theme from the leaders (Jandaghi et al., 2015; Min, 2017). The nurse leaders described the lack of focus on the patient during bedside care and the inability to self-regulate their smartphone use, which was stated to be rude and distracting and also raised patient privacy and safety concerns. The use of the smartphone at work may contribute to breaches of confidential health information in the

form of pictures taken and posted on Facebook or other social media applications (Wang et al., 2019). In addition, the smartphone is also considered a vehicle for infection transmission and the source of equipment interference. A comment stated by a nursing leader highlighted the dangerous correlation between texting and driving. Using the smartphone and calculating and dispensing medication places the patient in a possible hazardous yet avoidable situation (Brandt et al., 2016). One study from direct observation showed nurses are distracted during medication administration 53.1 to 66.7% of the time (Schroers, 2018).

A nursing study conducted by Piscotty et al. (2016) concluded that 50.7% of the respondents stated that they accessed a social media website during their shift and 90% of the nursing respondents witnessed a peer who accessed social media sites during their shift. Most of the respondents, 91.1%, reported that they checked their mobile devices for text messages and missed phone calls.

Another self-reported study indicated that 98.6% owned a personal mobile device, 18.75% of the individuals or team members used their devices for non-work-related texts or emails, and 5.15% participated in shopping activities, and 2.73 played games. 29.88% of the respondents reported that the use of their device decreased stress. However, 69.06% of the respondents reported that the personal use of their devices had a negative effect on patient care, 69.41% of the respondents acknowledged that the use of their personal device caused them to miss personal vital clinical information; and 39.01% believe that the use of personal devices is always a distraction during patient care (McBride & LeVasseur, 2017).

In a study conducted by Colligan and Bass (2012), nurses revealed that they considered work-related distractions are an important part of their workday and should be addressed immediately. Various reports from hospital regulatory agencies, such as the Joint Commission, the Institute of Medicine, and the Agency for Health care Research, all concur the possible link between interruptions and medical errors and recommend reducing distractions to improve patient safety (Mamykina et al., 2017). Conversely, the workplace interruption may allow practitioners to gather relevant information or direct their attention to patients who may need immediate attention (Rivera, 2014; Rolls et al., 2016).

To decide whether the nurse should stop their primary task and focus on the distraction, the nurse will assess the possible risks; whether the interruption should be blocked to focus on the primary task or attend to the distraction immediately. The nurse must quickly decide if the distraction of the colleague's request or comments adds value (Gao et al., 2017). A study conducted with nurses in a Neonatal Intensive Care Unit (NICU) and Emergency Department concluded that patient safety was compromised by frequent interruptions during medication tasks and resulted in clinical errors and procedural failures (Johnson et al., 2018a).

Nurse and charge managers consider smartphone use distracting as they have witnessed nurses playing mobile games, participating in Facebook, making personal phone calls and texts while working on their shift. The leadership perspective regards the use of smartphones during work as a distraction that can negatively affect the nurse's performance and compromise patient care. An example of distracted care included a

patient who was vomiting, and the staff nurses were all focused on their Facebook accounts and were not observant of the patient (Bautista & Lin, 2016).

According to Qtait and Alarab (2018), distractions may result in wasted effort and time, delay in work, disorganized planning, and interrupted patient-focused procedures. In addition, patient safety may become endangered and affect the nurses' ability to complete their tasks in a safely. Medical errors or adverse outcomes based on distractions during medication administration, intravenous medication review or input, etc., are a growing concern for nurses (Laustsen & Brahe, 2018). Interruptions are considered externally prompted distractions that negatively affect the amount of time for a nurse to complete a task, the level of focus needed to complete a task, the decision-making required to process, and the incidence of errors. Within the nursing environment, distractions have been linked to reasoning failure and medical errors. Based on previous research, frequent interruptions have been known to affect the nurses' working memory negatively and, as a result, may compromise patient safety that ranges from minor errors to significant life-changing or fatal mistakes (Bautista, 2019; Gao et al., 2017).

Nurses who are assigned to the Emergency Department (ED) may be particularly exposed to frequent interruptions. The ED setting requires, on many occasions, multiple specialty teams working simultaneously with one patient. The teams must work cooperatively and interact with each other while operating independently. The ED nurse assigned to a fast-paced unit may not perceive distractions as negative or non-disturbing. The ED nurses are more prone to perceive distractions as non-disturbing when their workload was perceived as manageable (Berg et al., 2016; Eng et al., 2019).

Surgical nurses are also subject to and may contribute to smartphone distractions. The Association for perioperative Registered Nurses (AORN) released a statement that maintained that factors that contribute to distractions, including texting, social media activity, internet searches, email, and games, must be avoided. AORN's position statement emphasized, "during critical phases of the surgical procedure, surgical team members should create a no-interruption zone where nonessential conversation and activities are prohibited" (Association of periOperative Registered Nurses, 2020, p. 675). Additionally, in 2013, the Emergency Care Research Institute (ECRI) acknowledged distractions from personal mobile devices and smartphones as one of the top ten health technology risks (Cohen et al., 2018; Fillipo & Fenci, 2016).

Conversely, nurses working in a cardiovascular ICU regarded most distractions as positive. They provided the conduit to convey information about patients or other work-related communication that indirectly affected patient care. However, the study also concluded that personal or work-specific communication focused on organizational updates or private discussions was considered disruptive during the nursing handover during the end of shifts. The study recommended that personal distractions be eliminated to ensure nurses provide informative, timely, and valuable end-of-shift turnover communication (Kim et al., 2019; Spooner et al., 2019).

Alternatively, the disruption may garner positive perceptions of nurses. For example, 11% of distractions or interruptions may have potentially assisted the nurse or steered to outcomes that improved patient comfort, safety, condition, or accuracy (Hopkinson & Wiegand, 2017). The nurse's ability to communicate with a colleague to

exchange information, either face-to-face or through their smartphone or other devices, was viewed as a positive distraction (Bautista & Lin, 2016; Berg et al., 2016).

One quantitative study concluded that most of the staff nurses held positive outlooks regarding personal mobile phones at work because the device was considered helpful technology. The staff nurses indicated multiple reasons for the benefit of their personal mobile devices during their work hours. Most nurses are responsible for multiple patients simultaneously and use their smartphone to perform their tasks efficiently and faster. The nurse can call or text a physician to receive information instead of locating them within the hospital. Access to their smartphone also enables the staff nurse can quickly retrieve relevant information regarding medications.

In a more somber task, the staff nurse can contact the relatives of a patent who has shown symptoms of impending death. Other nurses viewed using their smartphones to maintain their professional image when the staff nurse did not know the answer to a patient or relative's question. For example, if the patient asked about their condition and the significance of the lab values, the nurse can excuse themselves from the bedside and search on the internet. In addition, staff nurses also indicated that their colleagues, charge nurses, nurse managers, physicians, and other health care providers use their smartphones during work hours and while on duty. The smartphone has become a daily routine and is normal and is used openly throughout the hospital (Bautista & Lin, 2017; Pucciarelli et al., 2019).

The ability to use their mobile device allows the nurse to meet their emotional needs to maintain a connection to family and friends during their work shift. Although

patient care should not be compromised during non-work related personal smartphone use, the research study concluded that the activity may have a positive effect on job performance. Consequently, permitting employees to reestablish their concentration, achieve equilibrium between work and personal life and reduce stress (McBride, 2015; McNally et al., 2017).

HIPAA Privacy Concerns

The nurse's personal social media use, both while working and not working, may expose private patient information. For example, a nurses' Facebook post to wish a patient well in their recovery or announce their sentiments regarding a death will infringe on their right to privacy (Buppert, 2018; Johnstone, 2016). One study concluded that most of the participating nurses reported medical information on social media. In addition, 67.2% of the nurses revealed that they frequently communicate work-related facts with colleagues through their personal social media. Roughly 50% of the nurses' in the study insisted that their employer had established social media guidelines. One-half of the nurses received a friend request from patients, and; 63.5% of the nurses acknowledged that they did not communicate with patients on their most commonly used social media apps. About 7.6% of the nurses occasionally posted identifiable patient information, which was considerably lower than the 32.5% rate of observing colleagues disclose identifiable patient information (Miller, 2018; Wang et al., 2019).

The study also identified that 50.3% of the nurses viewed inappropriate posts authored by colleagues. Social media use is prevalent among nurses, and unprofessional online behaviors, including the inappropriate posting of pictures or commentaries and the

violation and exposure of patient privacy and confidentiality, may result in severe consequences, including disciplinary action, license suspension or revocation, employment termination, fines, penalties, and incarceration (Miller, 2018; Wang et al., 2019).

The federal law, Health Insurance Portability and Accountability Act (HIPAA), enacted in 1996, protects patient data. Protected health information (PHI) requires HIPAA compliance to ensure that employees are educated and secure patient information. The HIPAA privacy rule was established to protect individually identifiable health information held or communicated by health providers such as hospitals and clinics, health and insurance plans, health care clearinghouses, or any of its business associates. The HIPAA Privacy Rule protects any past, present or future physical or mental health condition and the services provided and the payment for those services (Bouldrick, 2015; De Gagne et al., 2018). The health care provider or entity must receive a release from the patient with a brief description of the occurrence and the date that the breach was discovered. The notification must be sent to the patient no later than 60 days following the health care entity's breach discovery. The employer must retrain the employee responsible for the breach concerning the HIPAA Privacy Rule and security measures (Jain et al., 2014; Sharpe, 2017).

Fines for HIPAA Privacy Rule violations and settlement costs can range from thousands to millions of dollars. In addition, if a breach of information occurs, the health care entity must notify the patient (Bouldrick, 2015; Sharpe, 2017). It is vital that identifiable patient information, including their names and faces, is not posted, either in

error or intentionally. Staff may post complaints about work on their personal social media accounts and share information about work that causes a breach of patient PHI (Miller, 2018).

Despite HIPAA privacy rule compliance training and awareness, between April 2003 and September 2017, the HHS Office for Civil Rights received a total of 165,175 complaints. The complaints included breaches of private health information and violations of cyber-bullying, online aggression, and disrespectful interactions with health care providers. Yelp's online public review forum included 3,500 posts that mentioned providers who allegedly violated HIPAA or privacy rules. Health care providers who responded or disagreed with the negative online criticism may have intentionally, or not intentionally, revealed patient information that violated HIPAA rules and, as a result, damaged trust (Martin et al., 2018; Miller, 2018).

Nurses who participate in social media activities have a responsibility to ensure that they understand HIPAA guidelines (Gagnon & Sabus, 2015; Sharpe, 2017). State or jurisdictions may also have laws governed by boards of registered nurses that provide sanctions that address the inappropriate use of social media, including HIPAA violations, unethical or unprofessional conduct. The consequence of violations may include civil or criminal penalties (Fowler, 2017). Nurses, and other health care providers, face disciplinary action, up to and including termination of employment. Confidentiality or breaches of patient privacy are the most common and primary litigation errors that nurses can make when communicating with others in their private social media activity (O'Connor et al., 2016; Scruth et al., 2015).

A nurse, who does not purposely violate HIPAA privacy rules and believes that they have the best intention for the patient may post information on a social media platform, is at risk for professional and or organizational disciplinary action (Jandaghi et al., 2015; Ratcliff, 2015). For example, nurses' who make a wrong choice to take photographs of patients with their mobile device and post the image on their social media account. Specifically, a nurse captured a picture of her while pretending to be asleep next to an infant in the hospital bassinet and posted it on her Facebook account. Three days later, the same nurse administered a fatal dose of medication to the child featured in her Facebook posting (Scruth et al., 2015).

Nurse-related social media postings or events that lead to a common HIPAA violation may be punishable by law (Bouldrick, 2015; Westrick, 2016). In 2016, a perioperative nurse took a high resolution picture of her perioperative nurse colleagues in the operating room. The nurse posted the picture on Facebook and commented that the trauma procedure was challenging, and the nurse was very proud of the team to take care of the patient. The nurse did not post the patient's name; however, based on the fact that the nurse posted details and the picture included legible patient health information on the screen that was located behind the group of nurses, the nurse violated HIPAA. Another perioperative nurse was attending a surgical patient after a motor vehicle accident, which included many irrigations and debridement's.

The nurse was aware that the patient will take a long time to recover but is hopeful that the patient is healing well and was able to receive an anticipated skin graft. The nurse developed a cordial and friendly relationship with the patient and asked a

colleague to take a picture of her and the patient before the surgery. The nurse subsequently posted the picture on her personal social media account and included inspirational quotes that highlighted why the nursing profession was fulfilling. The intention for both scenarios was not a deliberate attempt to reveal the patient's personal health information; however, both demonstrated HIPAA violations by perioperative nurses that may result in legal action (Fillipo & Fenci, 2016; Miller, 2018).

Two-night shift registered nurses, who went to school together and maintained a close relationship, cared for a 44-year old woman with four children ages 3 to 20. The patient was admitted with an intestinal blockage and was scheduled for surgery the following day. The patient's surgeon reviewed the images and suspected a massive tumor was the cause of the intestinal obstruction and would require removal for palliative purposes only. The surgeon believed that cancer had spread to all adjacent organs and lymph nodes. However, the surgeon would not determine if the tumor is cancerous until the surgery is performed. When the two-night shift nurses left the unit at the end of their shift, they proceeded to the elevator and continued to speak about the patient's case. The patient's twenty-year-old daughter entered the elevator with the two-night shift nurses. The patient's daughter recognized the nurses from her mother's unit. She overheard them say that it is a shame that the patient has a massive tumor and has four children at home. The daughter assumed that the nurses were speaking about her mother and thought she was only diagnosed with a minor intestinal blockage and did not know that she would require surgery. Nurses are responsible for their actions, decisions, and judgments, and the two-night shift nurses failed to honor patient confidentiality. The two nurses

demonstrated poor judgment when they spoke about a patient in the elevator and did not discuss complex issues related to patient care in a manner that displayed acceptable ethical practice (Bristol, 2014; Winland-Brown et al., 2015).

The nurses' personal beliefs may also contribute to HIPAA violations (De Gagne et al., 2018; Green, 2017). For example, a nurse employed for 10 years in the pediatric intensive care unit (PICU) nurse at a children's hospital encountered a child with measles. Only eight cases occurred in the large city where the nurse was employed. The nurse had a long-standing belief that vaccinations were not effective and personally decided to opt-out of certain vaccinations for her 12-year old son. In addition, the nurse was a member of a "anti-vaxxers" Facebook group. The patient, a toddler, contracted the disease overseas and was too young to receive the vaccination. The child was in pain, had a high fever, and was covered in red rashes. The nurse signed into Facebook from her home and posted on the group Facebook page of "anti-vaxxers" and posted details about her experience with the child. The nurse posted that, despite the child's unpleasant and potentially life-threatening experience, she did not change her viewpoint regarding vaccinations. The information listed on the nurse's profile included her name and the hospital where she was employed. The parent of another patient saw the posting and was concerned that her child might also contract the disease. The parent decided to take screenshots of the nurses posting and posted the screenshots on the hospital's Facebook page. The nurse was subsequently placed on probation and, three days later, was terminated (Latner, 2019). The nurse's decision to post in a closed group or a private, invitation-only social media group site on Facebook and others are public and may be

accessed or reviewed by others outside of the closed or private group. Participation in social networks may blur professional boundaries and create problems for nurses, patients, and health care institutions (Beauregard et al., 2017; Watson, 2018).

Additionally, a nurse had an emotionally and clinically difficult shift in a Michigan hospital. The nurse was told to treat an alleged police shooter. After her shift, she logged into Facebook and posted that she was face-to-face with "evil" and then stated that she hoped that the police officers' killer would "rot in hell." The Facebook post did not include the suspects' name or any other identifiable information or the hospital. Despite the lack of protected health information revealed, the nurses' employment was terminated for the post because it was deemed a HIPAA breach and contained unprofessional content (Bristol, 2014; Miller, 2018; O'Connor et al., 2016).

Professional Boundaries and Social Media Participation in Nursing

In some cases, nurses' may find the distinction between their professional and personal life is blurred. Nurses may participate in social media for personal and professional communications, research and education and express their feelings and opinions (Flynn et al., 2018; Manfrin-Ledet et al., 2015). Creating and responding to content, uploading photos, video and audio clips, blogs and microblogs encompass daily life in the 21st century. The social media platforms are free of charge, available 24 hours a day, 7 days a week, and easily accessible on a smartphone (Sinclair et al., 2015). The nurses' participation in social networking during work time may enable the blending of work and personal activities that may disrupt the professional boundaries between nurse and patient (von Prooijen et al., 2018).

Conversely, when home and work areas are entirely separate, the boundary between the areas is distinct and unalterable (Cousins & Robey, 2015). The traditional aspects of professional interaction are the building blocks that enable public trust and are incorporated in values that include clinical proficiency, patient privacy, veracity, humanism, social justice, and courteousness (De Gagne et al., 2018). A definition of professionalism is communicating and interacting respectfully and productively (Hochberg et al., 2017). The nurse-patient interaction should always be upheld for the patient's benefit and not the personal gain of the nurse, and the primary attention is on the patient (Griffis & Falder-Saeed, 2016; Manfrin-Ledet et al., 2015).

The incidences of registered nurses reported to a governing body and disciplinary actions continue to occur (Manfrin-Ledet et al., 2015). While the concept of professionalism is vague, one regularly cited model outlines important behaviors that describe and exemplify professionalism in the clinical practice, including placing the patients' requirements foremost, observing to honorable and principled standards, representing humanistic values and accountability for both self and others (Bazan, 2015; DeWane et al., 2019). To remain compliant with HIPAA and PHI, health care workers should practice professionalism both online and offline (Gunay & Kilinc, 2018; Snoots & Wands, 2016).

Nurses must carefully consider whether they should connect with patients on social media. They should not post about the patients, the health care institution, or their profession on social media. The nurse needs to maintain professional boundaries and resist the temptation to post an inappropriate remark, opinion, or fact. The nurse must

remain vigilant to recognize the actions in social media and assist other nurses to do the same (Griffis & Falder-Saeed, 2016; Henderson & Dahnke, 2015).

The Code of Ethics for Nurses from the American Nurses Association (ANA) is used as the basis and provides the guidelines to deliver the highest level of nursing care (Ford, 2018). Nurses should use thoughtful consideration to determine if they choose to post work-related pictures, statements, or comments on social media. The ANA document discusses the consideration of the relationships and interactions with colleagues and others that would compel the professional nurse to refrain from disparaging, negative, harassing, or threatening comments about others. In addition, the ANA document includes statements regarding professional boundaries, privacy, and confidentiality. The professional nurse must establish, recognize and maintain the appropriate professional boundaries for their patients and colleagues. The nurse must protect the right of privacy for their patients, including maintaining the confidentiality of protected health information (Fillipo & Fenci, 2016; Snoots & Wands, 2016).

The nurses' participation in social networking may challenge the boundaries of patient privacy. Sharing information that can breach personal boundaries through various social media categories: social networks, which include Facebook, LinkedIn, Snapchat, Instagram; and weblogs/microblogs, which include CaringBridge, Twitter; content communities, including YouTube, TikTok, Pinterest, collaborative projects including Wikipedia, Skype; Podcasts such as Cancer.net, TED Talks, NPR, ONS podcast; and forum message boards, for example, Yahoo! Answers, Cancer Survivors Network (Westrick, 2016).

Sharing information and communicating with patients through social networking, email, or FaceTime may blur the boundaries of patient-nurse care and possibly generate challenging ethical circumstances that may, ultimately, affect patient care (Miller, 2018). For example, nurses may reveal personal information on social networking sites. Facebook profiles permit individuals' to publicly identify their sexual orientation, political or religious or moral ideologies, and view images or comments that display excess alcohol use, profanity, or patient privacy violations. The information revealed in a nurses' Facebook profile would probably not be shared in a traditional patient encounter. The facts shared on the profile may cause a patient to withhold information, form preconceived biases, or they may feel uncomfortable with the clinician, and postings that are perceived as inappropriate may have consequences that affect the nurses' professional and personal reputation (Jain et al., 2014; O'Regan et al., 2018).

Health care organizations may have policies that integrate guidelines for social media use include consequences for misconduct, and provide an outlet to report misconduct. The National Labor Relations Board (NLRB) suggests that the social media policy language is clear and provide employees with examples of acceptable and excluded behaviors, and how the policy will be applied. Similarly, and as important, is the disciplinary enforcement of the policy, which should be applied uniformly and consistently. The language should include definitive consequences, such as progressive discipline (i.e., the definition of the levels of discipline and the rationale that may lead to further punishment) or the types of violations that are deemed severe enough for a first offense termination (Green, 2017; O'Connor et al., 2016).

The National Labor Relations Act (NLRA) is managed by the National Labor Relations Board (NLRB), an independent federal agency that protects the rights of employees to act, speak and work together to address conditions in their employment. The NLRA applies to both union and non-union employees. Most private-sector employees in the United States are classified as at-will, which states that employers can terminate employment at any time. The decision to terminate without cause, as legislated by the NLRA, is a rare exception to the at-will guidelines; however, there are few defenses for employees who are terminated for inappropriate social media activity that expose protected health information. In addition, a common misconception is that the First Amendment is in place to protect free speech in every case. However, free speech defenses apply to employment terminations only when public sector personnel communicate about topics of public concern (Miller, 2018; O'Connor et al., 2016).

For concerns of privacy arguments, courts of law have consistently ruled that social media participants should not have a reasonable expectation of privacy due to the voluntary nature of posting information, pictures, or status updates (O'Connor et al., 2016). The risks of privacy invasion are exceptionally high because it is impossible, when the employee uploads their personal information from their smartphone to a social network site voluntarily or in error, to stop the spread of information and practically impossible to delete entirely. The employee may be willing to use their smartphone during work hours; however, it is essential to understand the positive and negative consequences of the exchange (Choi, 2016; Winland-Brown et al., 2015).

Unfortunately, some nurses may not recognize the implications for patient privacy and continue to execute breaches and display unprofessional behavior (De Gagne et al., 2018). Nurses must be aware of their employer's policies regarding professional boundaries, and the policies should be written clearly to guide nursing behavior (Manfrin-Ledet et al., 2015). Failure to adhere to guidelines specified by professional guidelines may not only cause the nurse embarrassment and damage to their reputation, and based on the severity of the breach, it could also result in disciplinary action or revocation of their license (Johnstone, 2016). The potentially problematic online behavior may result from the ease of sharing information and the lack of forethought. The nurse must pause before posting, every time, to prevent the appearance of blurring the boundaries of their professional practice (Logghe et al., 2018; Wu et al., 2018).

Clinicians can avoid the consequences of HIPAA, PHI, or professional boundary violations (Ashton, 2016; Logghe et al., 2018). Four cautions should be reviewed prior to participating in social media activities. The four cautions are: (1) avoid a HIPAA violation and do not mention a patient's name or write about a hypothetical patient that a reader may be able to identify. In addition, if the clinician accepts patients as friends on social media, do not communicate information about their condition or answer questions, and never post a picture of a patient on your social media; (2) do not establish duty of care that a patient may use to avoid an office visit that may result in an injury, and subsequently sue for malpractice; (3) maintain professional boundaries that allow for the suitable interaction with the patient.

It is not prudent, as the clinician, to become inappropriately involved in a patient's relationships or family disputes. Maintaining professional boundaries is also vital if the clinician provides medical services for the family members, or off-color slogans. Avoid political statements, except for urging support for legislation that supports health care or services for the underserved (Bautista & Lin, 2016; Buppert, 2018).

To gain awareness and maintain professional boundaries, a structured smartphone and social media education is recommended (Bautista & Lin, 2016; Cho & Lee, 2016). A pre-survey presented to Neonatal Intensive Care Unit (NICU) nurses indicated that education was needed to alleviate violations. The post-survey results indicated that 100% of the nurses made aware of the differences between professional, and personal relationships, the institution's social media policy and 76% of the nursing staff were made aware of the National and State Councils position on social media use. The findings showed an improvement in nursing awareness about personal social media participation and professional boundaries when participating in social media sites (Faron et al., 2015; Lofton, 2015).

Summary and Conclusions

The proliferation of personal communication devices in hospitals has garnered the ability for nurses to retrieve and communicate patient, drug and medical information instantly. However, the converse side of instant communication allows nurses to focus on their devices and not the patient. Distracted nurses may divert their attention resulting in potential errors (Mariano et al., 2018; McBride, 2012). The nurse's attentional resources may be limited and social media or other smartphone activities may use some of the

attention that should have been devoted to the nursing duties. Job distraction that results from smartphone-related activities negatively affects performance (Wu et al., 2018). The nurse's need to focus on the smartphone activities, and some attention on the completion of the primary task at work may compromise their efforts. For the nurse to focus their attention on both activities, the distraction causes an increase in time to complete the primary task. In addition, the distraction of the smartphone activity and the primary task results in lesser efforts or thinking for the primary task. Also, switching from smartphone activities to work creates significant memory disruption, which weakens work performance. The resulting distracted job performance may negatively affect patient care or contribute to errors that affect patient outcomes (Cho & Lee, 2016; Wu et al., 2018).

Nurses have established their rationale for interruptions toward colleagues, patients, the management, or others during their work time. The nurse must decide whether or not to accept the interruption. Klemets and Evjemo's (2014) study identified that nurses were not always able to judge the urgency of a patient call, which led to difficulties in managing the care. The nurse had to decide to stop working on their current task to answer the needs of the patient (Gao et al., 2017; Klemets & Evjemo, 2014).

The literature research provided quantitative and qualitative studies and statistical data to substantiate distracted patient care. This study may extend the knowledge to describe the perception of nurses working in the clinical hospital setting, and distracted patient care due to personal smartphone use. The nurses' perceptions can offer strategies that mitigate errors that led to wrongful release of patient information, medical errors,

injury or preventable patient death (Papadakos & Berman, 2017; Ross, 2018; Sage & Hardell, 2018).

Chapter 3 provides details of the methodology for the qualitative single case study with embedded units, which was designed to present the purpose of the study and provide data to answer the central research question. I also presented the research design and rationale, detailed descriptions of the recruitment, methodology, and data collection approach and procedures. Finally, I identified the research instrument, mitigation of bias, instrumentation for the study, the data analysis plan and the establishment of content validity. The concerns of trustworthiness, which included credibility, transferability, dependability, reflexivity, and confirmability, were presented.

Chapter 3: Research Method

The purpose of this qualitative, single case study with embedded units was to describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. The single case study with embedded units design is a significant means to maintain the study's focus on the perception of nurses' personal smartphone use at work (Yin, 2014). The single-case study with embedded units design was chosen to address and answer the research question and clarify, such as how and why questions, when a specific phenomenon occurred (Mattison et al., 2020). For example, embedded units provided important opportunities for extensive analysis and insights into the single-case study (Yin, 2014).

Emails that included a link to the open-ended questionnaire were sent to 58 nurses who expressed interest or consented and did not participate in the semi-structured interviews. Multiple quantitative studies were conducted to research employee cyberslacking activity; however, the study described the nurses' perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses (Olmstead et al., 2016; Vaisman & Wu, 2017).

This chapter provided a detailed description of the research design and rationale for conducting this qualitative single case study. It provided detailed descriptions of the role of the researcher, discussion on personal relationships with the participants and biases, and tactics to mitigate biases. The research question guided the investigation and included the participant selection strategy, instrumentation, data collection strategies and data analysis, ethical considerations, and the establishment of content validity.

Research Design and Rationale

In order to describe a comprehensive and in-depth exploration of the perceptions of nurses regarding distracted patient care due to personal smartphone use, the research question must guide the research strategy, and it is critical for the researcher to understand the problem that is studied (Korstjens & Moser, 2017; Salmons, 2018). The research question and design must be open to discovering unexpected results (Levitt et al., 2017) while remaining aligned with the purpose; therefore, the research question is as follows:

What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

The nurses' social media use in the workplace, or cyberloafing, and or other activity focused on a personal smartphone represents a distraction from the patient-related tasks that must be performed to fulfill work duties (McBride, 2015; Sampat & Basu, 2017). Distracted nurses who actively participate in non-work internet or other personal mobile device activities may divert their attention from patient care and jeopardize patient safety (Cho & Lee, 2016; McBride, 2015). The topic of distracted nurses, in which the subject has not been addressed in any significant studies on preventing medical error due to cyberloafing or other personal device activities, and leaves a significant gap in the scholarly literature (Ford, 2018; Papadakos & Berman, 2017). The study explored the perceptions of personal smartphone use by nurses in the workplace. Findings from the literature indicated that nurses who use their personal device to, specifically, participate in social media activities include concerns in distracted

patient care, the wrongful release of patient's information, medical errors, injury, or preventable patient death (Papadakos & Berman, 2017; Ross, 2018; Sage & Hardell, 2018).

The central phenomenon of this study was to explore the perception of nurses who use their personal devices in the workplace. The study sought to describe and understand the perceptions of the use of mobile devices by nurses in the workplace, which may expose patient information to reveal privacy and security risks. The possible use of their device may also provide a source of distraction that may divert care from the patient. According to Mariano et al., (2018) the use of personal smartphones at the bedside or while providing care may contribute to the perception of patients who accept it as accurate that the nurse is less engaged in their care and more engaged in their use of the smartphone. According to McBride (2015) there is a gap in the literature on data-based studies documenting the problematic use of mobile devices in the health care workplace among nurses.

By design, qualitative research is focused on an aspect of society and is generated by words that are, eventually, summarized by themes (McCuster & Gunaydin, 2015). Qualitative and quantitative research must include an explicit, systematic, and disciplined approach. The qualitative researcher generally explores the meanings and insights in a given situation and chooses the appropriate design based on several factors (Levitt et al., 2017). A qualitative research method is descriptive (Bryman, 2014) and assists a researcher in seeking an understanding of how a problem in a study works in the real world (Burkholder et al., 2016; Robson & McCartan, 2016).

A qualitative, single case study with embedded units was appropriate for this study because of its alignment with the purpose of the study, which was to understand and describe the nurses' perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. A single case study design with embedded units appropriately aligns with the study and facilitates the ability to describe the case and how it interrelates with the real-world contextual environment (Yin, 2014).

The qualitative model proposes that authenticity is created within a social framework and results from the participants' perceptions (Barbour, 2000; Creswell & Miller, 2000). A qualitative, single case study with embedded units' research tradition (Yin, 2014) is the most effective method to describe the nurse's perception of distracted patient care while participating in non-work activities on their smartphone. The embedded design incorporates the "fine-grained data" for the embedded units of analysis (Yin, 2011, p. 212). The embedded units incorporated all evidence collected, including the semi-structured interviews, and a focus group. A questionnaire with open-ended questions was sent to nurses who provided consent to participate, but did not participate in the semi-structured or focus group interviews. The embedded units, or subunits that emerged, provided the structure to maintain the case study's focus during the analysis of the nurse's perception of their personal smartphone use.

Within a single case study design, two or more embedded units provide additional context that allowed for additional extensive analysis and greater insight into the case study (Mattison et al., 2020; Yin, 2014). The emerged embedded units answered the explanatory questions, such as the how and why, based on what conditions nurses

perceived their personal smartphone use at work (Yin, 2017). The qualitative, single case study with embedded units' research tradition provided the lens for individual perspectives, and the subsequent interpretation of the data while preserving the value and intended meaning (Stuckey, 2013; Wahyuni, 2012).

In order to fully explore and describe the rich data of the perceptions of nurses, a quantitative method was not aligned or appropriate for this study due to the inability to produce an in-depth understanding of the nurse's perception of their personal smartphone use at work (Merriam & Tisdell, 2016). The research included detailed semi-structured qualitative interviews. The quantitative methodology did not allow the extensive understanding of the participants' perspective regarding their use of their personal devices while at work (Shekhar et al., 2018).

One of the strengths of case study research incorporates numerous available approaches for complex decision making. A single case study, with embedded units, provided insight into nursing perception practices, specifically distracted patient care while participating in non-work-related activities during work, and allowed the researcher to explore the issues from different perspectives (Flynn et al., 2018; O'Regan et al., 2018). Meeting the purpose of the study may advance knowledge on this under-researched and significant topic in patient care management (Beauregard et al., 2017; Berg et al., 2016).

Role of the Researcher

In a qualitative study, the role of the researcher is to provide the human instrument that will explore the data from all stages of the study, including the planning,

collection and, analysis of data and, ultimately, reporting the findings (Holloway & Galvin, 2017; Sutton & Austin, 2015). As a researcher, an observer, and a recorder, the role was to interview, host a focus group, and provide a questionnaire with open-ended questions to nurses who did not participate in the semi-structured or focus group interviews.

I did not have a professional or personal relationship with the participants. In this research, I was not a participant but rather a researcher investigating the question related to my study. As a result, I did not have a prior relationship or acquaintance with any of the participants. I did not have any authority or control over the participants as they individually shared their personal and professional perceptions and experiences. As a qualitative researcher, my role in this study was not as a participant, but as an observer, recorder, and qualitative data analyst (Yin, 2017).

As the researcher, my role was represented as the primary instrument through which data is collected and arbitrated in the representation of the research (Sutton & Austin, 2015; Yin, 2017). My role was a vital part of the research process and inquiry in every stage of the research study which included planning, collection of data, analysis of data, and reporting of findings (Sanjari et al., 2014). In addition, as the researcher, I ensured that the method of data collection was reliable, verifiable, and the data gathering instrument yielded accurate results and field notes. In order to achieve validity, the researcher kept a log of data collection activities in the course of the study (Kumar, 2019; Ledford & Gast, 2018).

The researcher is responsible for protecting all participants in a study from potentially harmful consequences because of their participation (Sanjari et al., 2014). The participants' protection of privacy was communicated in writing and remained a condition for their participation. Also, when presenting the findings, the nurses' names and organizations were not revealed. In order to maintain anonymity, pseudonyms were used to reference participants and their clinical setting identified their workplace.

The participants were informed that the researcher is aligned with the ethical guidelines espoused with the Belmont report protocol that authorizes the use of Institutional Review Boards (IRBs) requirement to provide respect and equal treatment for participants. In order to avoid bias, the researcher disclosed the assumptions that directed the development of the questions. The researcher was an instrument of the researcher, and the potential of research bias may exist (Jafar, 2018; Yin, 2017).

A qualitative researcher is expected to become immersed in the study, which suggests that the researcher is inside of the research study. Therefore, a researcher must remain reflexive of their role and prepare an active approach to identify and appropriately respond to any likely bias (Liong, 2015). The mitigation of bias in this study was realized through methodological rigor and the validation of participants (Ravitch & Carl, 2015). The potential for sample selection bias was mitigated through consistent attention to implementing of the sample selection criteria established for the study (Certo et al., 2016; Sarstedt et al., 2017).

There were no potentials for conflict of interest based on insider bias, as I did not have an affiliation or relationship with any of the nurse participants who were

interviewed. As a qualitative researcher, I remained focused on discovering trends within the exploration of the perceptions of nurses who use social media at work. The researcher's goal is to minimize bias and avoid influencing the study by achieving impartiality (Lopez & Willis, 2004). In order to ensure the method of data collection is reliable, correct, and verifiable, the researcher ensured that the data gathering instrument yielded accurate results, and created notes, and log of data collection activities during the research study to achieve validity (Kumar, 2019).

To expand the reflexivity approach, I maintained a log of all research using Berger's (2015) method; therefore, mitigating the possibilities for research and personal bias that was tracked and controlled to enhance the accuracy of the research process and findings. Berger's reflexivity method involves prolonged engagement of participants and repeated review of the interview responses. The use of a semi-structured interview approach assisted in eliminating the researchers' personal position as the participants are apt to add insights that a researcher may not have previously considered (Drew, 2014).

Participation in the study was voluntary, and the participants were able to withdraw at any time. The study did not include any unique benefits or incentives. However, participants were reminded that the agreement to participate in a research can offer solutions and a greater awareness and education within the nursing community. In order to objectively describe the lived experiences of the nurses' perception of distracted patient care while participating in non-work activities on their smartphone in the clinical workplace, the researcher ensured that relevant interview questions would result in reliable data (Gangeness & Yukovich, 2006; Walker et al., 2008).

Methodology

A qualitative, single case study with embedded units (Yin, 2017) provided and garnered an in-depth understanding of nursing perception practices, specifically, distracted patient care in their clinical workplace due to personal smartphone use by nurses. The selection of a single case study placed emphasis on an intensive investigation and analysis of a unit embedded in a case. The single case study with embedded units allowed the researcher to explore the issues from different perspectives (Flynn et al., 2018; O'Regan et al., 2018).

A fundamental value of using a qualitative research method was to explore a subject in-depth, which was grounded in a conceptual framework (Collins & Cooper, 2014). A single case study, with embedded units, allowed me to focus and explore the case to analyze the data within the case analysis and amongst the case analysis and cross-analysis. The use of embedded units allowed me to gain the ability to look at subunits that were located within a larger case (Yin, 2014), which assisted in the attainment and contribution to knowledge by confirming, challenging, or extending a theory (Yin, 2017).

According to Harrison et al. (2017), researchers have described case study as both a method and methodology. A method is defined as a set of procedures and techniques used in a study, and methodology is the lens used by the researcher to view and make decisions about a study (Harrison et al., 2017). Case study researchers accentuate that a principal methodology will help shape a case study design, and multiple sources of data and methods can be used (Merriam & Grenier, 2019; Yin, 2017). Based on the situation, it is possible to investigate different types of evidence while employing a qualitative

approach to assess the case from different perspectives to attain a comprehensive understanding (Yin, 2017).

A single case study investigating a social phenomenon can involve a single organization, for example, a hospital, or the nature of its service culture. The analysis may include methodological data from an element of the hospital, e.g., a questionnaire of the hospital's nurses (Yin, 2017). A person, event, entity, can be a unit of analysis within a case study. This study focused on the findings of the nurses who use their personal smartphone in their clinical workplace (Manling et al., 2019; Yin, 2017).

Participant Selection Logic

The targeted population of this case study was currently employed registered nurses who provide direct patient care and use a smartphone for personal use in the workplace. Nurses perform various job duties in order to provide adequate patient care. Nurses' various responsibilities include, but are not limited to, recording medical history and symptoms, monitoring patient health, administer medication and treatment, patient safety, support to patients' families, and assist physicians (Tehranineshat et al., 2019).

The nursing population increased to 3.1 million in 2019, inclusive of the latest United States Department of Labor, Bureau of Labor Statistics (BLS). Based on the 3.1 million registered nurses employed in 2019, the BLS statistics reported that 60% of the nurses were employed in hospitals, 18% in ambulatory services, 7% in nursing and residential facilities, 7% government, and 3% in educational services (Bureau of Labor Statistics, 2020).

I sent my Walden University email address and recruitment letter on LinkedIn to nurses to solicit potential participants that met the study's inclusion criteria for participation. I searched and reviewed, and emailed the recruitment letter and consent form to 1,000 registered nurse profiles within the United States with active LinkedIn accounts. I received over 50 consent forms and 30 emails that requested interest to participate in the study. As a result, the LinkedIn emails provided the needed participant interviews and questionnaire responses, and the American Nursing Association (ANA) database was not needed.

The sampling strategy for this study was purposeful selection. Sampling was the purposeful selection of a component of the entire population to gain knowledge and information (Holloway & Galvin, 2017). Purposeful selection allowed the researcher to intentionally select settings, individuals, or activities that were essentially relevant to the research questions and goals that cannot be attained from other sources. The sampling strategies are directed by principles and ethics and the opportunity to allow access to people whom they can interview in-depth and obtain rich data (Holloway & Galvin, 2017; Palinkas et al., 2015). In order to ensure the most effective use of limited resources, qualitative researchers use purposeful sampling techniques to identify and select information-rich cases (Palinkas et al., 2015).

In order to meet the criteria for the research study, the participants must be age 21 years or older, must currently work as a registered nurse with direct patient care responsibilities. The criterion for selecting participants for this case study werescreened, identified, contacted and recruited through a purposeful selection of registered nurses. I

verified the licensure from the states licensing websites. Advanced Practice Nurse Practitioners are included in the scope of the registered nurse. As stated, the participants were recruited through email to seek their interest in participating in the study. After a positive response was received from the identified inclusion criteria participants, a consent form was sent electronically. The exclusion criteria for the sample were participants who do not fit into all the above inclusion criteria. Unlicensed and student nurses are not included in the study.

Data saturation occurs when additional data from the participants will no longer produce novel themes (Holloway & Galvin, 2017; Houghton et al., 2013). The saturation encompassed hundreds of nurses with an anticipated sample size of 10 to 20 participants or until data saturation was met (Moon et al., 2013; Stake, 2010). Data saturation was used in concurrence with the number of participants to define when to discontinue the interview process. The importance on data saturation is essential since an inability to reach saturation will oppose the validity of the research (Fusch & Ness, 2015). According to Yin (2017), a small number of participants with relevant experience in the phenomena can incorporate the appropriate sample size for a single case study with embedded units.

Instrumentation

According to Patton (2014), the types of qualitative data collection instruments commonly used in a research method include interviews, observations, and documents. For this qualitative research, three sources of data were used. The research instrument used for this study included the researcher and a semi-structured interview protocol using open-ended questions designed by the researcher (Appendix A, Interview Protocol).

Literature sources, based on quantitative studies and feedback from subject matter experts were adapted to solicit the rich data collection that garnered the qualitative perceptions of nurses who use their smartphones at work. The instrument allowed in-depth data collection and was designed to answer the central research question (McBride & LeVasseur, 2017; Pucciarelli et al., 2019). The researcher chose to incorporate individual and focus group interviews to align with single case study research with embedded units and contribute to the original purpose of the study's conceptual framework.

The semi-structured interviews, focus group, and a questionnaire with open-ended questions were emailed to nurses who did not participate in the semi-structured interviews or the focus group. The role of the researcher was to explore the nurse's perception regarding distracted patient care in their clinical workplace due to personal smartphone use and to address the research question (Gangeness & Yukovich, 2006; Yin, 2014). The interviews helped improve and increase my capability to understand the experiences through the subject's perspective (Salmons, 2018). The third source of data incorporated the study's open-ended questionnaire (Appendix B). The questionnaire format allowed the participants to describe their experience in an unstructured and open-ended electronic format. The focus group, questionnaire, and semi-structured interview questions were identical and based on the conceptual framework of this study.

The interview protocol included the mutually agreed upon date, interactive visual technology site, interviewer, interviewee, and interview instructions. The process for recording of responses, and demonstration of the appreciation of the participation ensured that the rich details of the interviews were realized (Bahrami et al., 2015; Salmons, 2018).

The researcher solicited feedback from two subject matter experts in their field to ensure proper alignment with the purpose of the study and whether the interview questions provided answers for the primary research question. Their feedback regarding the interview questions added depth to the questions. The experts did not participate in the study. The interview protocol design provided a greater understanding of the problem statement and purpose of the study to describe the nurses 'perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use (Bautista et al., 2018; Pucciarelli et al., 2019).

In order to objectively describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to smartphone use, qualitative inquiries included the researcher's probe into the standard meaning and any uncovered meanings. The researcher ensured that the perceptions of nurses were upheld and the descriptions of any contradictory implications were documented (Walker et al., 2008). The use of methodological triangulation increased the validity and reliability of a study. Content validity was established based on the four types of triangulation including data, investigator, theory, and methodological (Patton, 2014).

Methodological triangulation improved reliability with the use of semi-structured interviews that addressed the research questions. Reliability refers to the consistency and stability of the research instrument. It is also linked to replicability, or the extent to which the study is repeatable and produces the same results when the methodology is replicated in similar circumstances and conditions (Holloway & Galvin, 2017). Investigator triangulation occurs when multiple researchers or analysts are involved in a single study.

The inclusion of a range of different theories to frame the study is referred to as theoretical triangulation (Denzin, 2009; Lincoln & Guba, 1985).

The adoption of Baron's distraction-conflict theory (1986) and Min's (2017) updated extension of distraction-conflict theory provided insight into evaluating personal smartphone use as a technology that may distract nurses from their primary tasks in the clinical setting. I used methodological triangulation to triangulate data obtained from the focus group, and the questionnaire with open-ended questions. The data was completed by participants who did not participate in the semi-structured interviews, which supported the trustworthiness of findings and suggestions for further research (Kolb, 2012; Rohrbeck & Gemunden, 2011).

Qualitative research requires interaction and short-term relationship building during the data collection process. Empathy, the ability to put the researcher into the participants' situation, was needed to establish trust. Simultaneously, I remained aware of my values, which may influence data collection, and remained non-judgmental and non-directive. In order to ensure clarity and accuracy, I reviewed the recording to enhance my understanding of the interviews with the participants (Korstjens & Moser, 2017). I asked the participants of the semi-structured interviews to review my transcribed interviews to confirm that the information reflected their experiences correctly and to reduce my biases and personal perceptions of the study.

Procedures for Recruitment, Participation, and Data Collection

The Institutional Review Board (IRB) approved the application to interview the participants, and I initiated the recruitment process for the study. The use of online

recruitment efforts was appropriate for this study and described the perceptions of nurses who use their personal smartphones during work hours. The online qualitative methodology allowed researchers to sample professional groups that would be, in most circumstances, difficult to contact (Komodromos et al., 2019).

I used the professional, career-focused website, LinkedIn, to recruit nurse participants for the study. The digital age has allowed social media platforms such as LinkedIn to become a common practice as a recruitment tool for human research (Gelinas et al., 2017; Salmons, 2018). Social media is defined as a comprehensive label that describes the many activities that incorporate collective, interactive social technology that includes written, photographs, graphics, videos, and audio clips. Popular social networking sites include: YouTube, Facebook, Instagram, TikTok, and microblog Twitter (Omar & Dequan, 2020; Palfrey & Gasser, 2008). In contrast, flyers, newspapers, emails, letters, compared to social media, are expensive and not time effective. When used as a research recruitment tool, social media will capture a larger audience, is instantly received by a prospective participant and inexpensive (Salmons, 2018; Whitaker et al., 2017).

I requested the participants' contact information, including the phone number, email address, and the best time to contact them. The recruitment letters were sent via email. As nurses' expressed interest in participating in the study, I provided additional information about the study that led to their participation in the study. I informed participants' that LinkedIn was used for recruitment purposes only. After recruitment and agreement to participate, the dialogue may not continue in LinkedIn and their email or

phone number will not be shared to protect the participant's privacy. If the participant expressed an exit from the study, the researcher would have provided the confidentiality of the responses and, if the participant refused to participate, the conversation would cease. I would have expressed my appreciation for the discussion. If follow-up interviews were warranted, I coordinated a time that was convenient for the participant.

The data collection process begins when the researcher expresses the problem within a theoretical or conceptual framework and scrutinizes the resulting relationships. As it provided a lens for this study, the conceptual foundation of the distraction-conflict theory posits that the act of the distraction suggests that in the workplace, individuals are subject to distractions caused by secondary tasks. Therefore, this may limit their ability to cognitively process the information required to complete a primary task (Baron, 1986). The distractions may cause attentional conflict between the primary tasks and the distractor, specifically, when the distraction, social media usage, is interesting and or hard to ignore (Baron, 1986; Brooks et al., 2017). Qualitative research provided the framework to ensure that the researcher is the instrument to collect data. It is important that every effort is used to avoid measures to that would solicit self-centered and unrelated results (Levitt et al., 2017; Moon et al., 2013). The data was collected from the interviews with nurses who use their smartphones during work. The researcher collected the data and performed all interviews, and recorded and transcribed the interviews. NVivo, qualitative computer software, was used to analyze the data.

The role of the qualitative researcher is to generally explore the meanings and insights in a given situation and choose the appropriate design based on several factors

(Levitt et al., 2017). The explanatory questions for the how and why were answered by the emerged embedded units. Based on the conditions, nurses perceive that their personal smartphone use at work creates a distraction from their primary duties (Yin, 2017).

In order to objectively describe the perceptions of the nurses, the researcher ensured that relevant interview questions resulted in reliable data. To ensure proper alignment with the purpose of the study, the researcher solicited feedback from subject matter experts in their field to determine if they provide answers for the primary research question. Their feedback regarding the interview questions added depth to the questions. The experts did not participate in the study. The researcher assumed the role of an observer and the interviewer, and kept participation to a minimum, to add trustworthiness to the study (Nowell et al., 2017; Stewart & Gapp, 2017). All participants received a copy of the transcript in order to edit and verify for accuracy. Participant verification supports the analysis and contributes to trustworthiness (Yin, 2017). The researcher did not anticipate or encounter any ethical concerns. Confidentiality was maintained, and pseudonyms were assigned.

All recordings were password protected, and hard copies were stored in a locked file cabinet. The participants were also informed in the consent form about how their privacy was guaranteed and secured through the confidentiality and anonymity process integrated into the research process. The participants were asked to express their consent to participate in the study by signing the consent form and returning the signed form using my email designated for the study. They replied to the email with the words I

consent. The return of the signed consent form or reply that stated I consent marked the beginning of the participant's interview process.

The qualitative research protocol and methodologies define the process for data collection, selected participants, and the choice of the computer software to assist the researcher in the analysis of the data (Houghton et al., 2015; Walker et al., 2008). The researcher collected the data, and conducted interviews that utilized telephone or interactive live software platforms, i.e., Zoom, or Skype to participate and record all semi-structured and focus group interviews. All interviews were recorded and transcribed by the researcher, and NVivo software was used to record and code data. Participants received a transcription of their interview in order to confirm and or expand the data.

Data Analysis Plan

Qualitative data analysis allows the researcher to systematically process and arrange written data such as interviews, field notes, and archival documents into findings and conclusions. Case study data analysis is the process of examining, categorizing, tabulating, testing, and converging case study evidence to produce empirically based findings (Yin, 2017). The most common difficulty researchers encounter in qualitative studies is to be confronted with a considerable amount of data that has piled up unanalyzed during the data collection period (Maxwell, 2013). The interweaving of data collection and data analysis increases research rigor (Miles et al., 2014). As this study and as the research proceeded, I conducted both data collection and data analysis concurrently.

The data described the nurse's perception of possible distracted patient care while participating in non-work social media activities. The data analysis process included the examination, categorization, tabulation, and utilization of a comparative approach to identify common themes to produce empirically based findings (Hanckel et al., 2019; Yin, 2017). The data analysis process revealed several relevant participants' life experiences or concerns (Taylor, 2013). The connection of data collection and data analysis processes increases research rigor (Miles et al., 2014). The researcher ensured that as the data was collected, facts were discovered and organized into meaningful patterns collected to assemble relevant material (Miles et al., 2014).

Case study research requires that a detailed description of the setting or individual is crucial before analyzing themes (Yin, 2014). After reading and examining the transcribed data, the data analysis process began, and the researcher determined what information should be investigated and analyzed. The data analysis was determined and followed by a specific analytical technique suitable for the data to code the interview data, and interpret the findings (Maxwell, 2013; Miles et al., 2014). The analysis necessitated using collected data from the interviews to reveal important themes, patterns, identification of the types, development of codes, and explanations connecting to the principal research question of the study. This analysis aimed to discover themes and patterns that enhanced understanding of how nurses' use their personal smartphone at work. The main factor of thematic analysis is a constant comparative method (Miles et al., 2014).

The five specific analytical techniques to add rigor to case study analysis are pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis (Yin, 2014). For this study, I used the pattern matching technique to analyze the data that explored the perceptions of nurses who use their personal devices during work (Yin, 2014). Yin found that pattern matching for case study research is one of the most useful techniques (Yin, 2014). According to Yin (2014), researchers use pattern matching techniques to compare a single or different multiple predictions with an empirically based pattern. The pattern matching between data sources establishes internal validity as the case strengthens when the patterns match. The development of themes was compared with each other for similarity and difference (Wilson et al., 2019). The empirical discoveries of the case study from the participants were compared with the predicted case findings to use as a point of conclusion or to offer an opposing explanation. The goal of pattern matching is to examine whether the empirically-based pattern matches or deviates from the predicted pattern. Yin (2017) mentioned that if the empirical and the predicted pattern appear comparable, this indicates the acceptability of the original explanation; which helps strengthen the internal validity of the case study.

Alternatively, if the empirically based pattern and the predicted pattern do not match, then there is opposition, and the researcher must offer an explanation to address the opposition. In this study, by following Yin's procedure for pattern matching, I compared the empirically based pattern with the predicted pattern, examined the extent of the matching, offered an opposition explanation, if any, interpreted the results, and

established the conclusion. The use of pattern matching offers an effective and reliable approach for data in a qualitative study (Gu, 2014; Yin, 2014).

The researcher developed a codebook used to code the raw data (Basit, 2003; Castleberry & Nolen, 2018). Usually, the data was in the form of text, such as the transcription of an interview. The code is a symbolic interpretation that acts as a label, which is a basic format for recognition, storage, and retrieval of data and increases replicability.

In qualitative inquiry, a code is a researcher's generated construct symbolically assigned to capture the summative or the essence of every statement in the transcript of data (Vogt et al., 2014). Code could be a word, label, or summative short phrase assigned to individual data to initiate the analytic process of qualitative research (Elliott, 2018; Miles et al., 2014; Ravitch & Carl, 2015; Saldaña, 2015). After each of the semi-structured interviews, participants were sent a copy of their transcript for validation, and I began the initial review of data and the coding. Separate coding was performed for the focus group and the questionnaire. Two coding phases were used and included the pre-codes and the actual codes. Pre-coding allows the foundation for actual coding and permits the comparison of the pre-code with the actual code. After the pre-codes and actual codes were defined, the following phase is to place the codes into subthemes to determine thematic analysis.

The process of coding is a repeated action, and the researcher rarely attains perfect codes during the initial process (Castleberry & Nolen, 2018; Saldaña, 2015). In order to retain the accuracy of the data, pre and actual coding are essential prior to the

implementation of computer-assisted qualitative data analysis. (CAQDAS) will assist in the effective qualitative data analysis (Castleberry & Nolen, 2018).

There are several CAQDAS available, such as ATLAS.ti, NVivo, Quirkos, HyperResearch, and others, and the researcher must identify the most appropriate for the study (Castleberry & Nolen, 2018). NVivo software was used to record, code, and analyze the data. NVivo was used to input the results of the semi-structured interviews, the focus group and the open ended questionnaire to ensure credibility, dependability, confirmability and transferability of the study result. NVivo is a comprehensive data management and analysis software with the capability to organize and automate coding. The coding cataloged the themes, and the five phases of analysis used were (1) compiling, (2) disassembling, (3) reassembling, (4) interpreting, and (5) concluding (Yin, 2014). The data was further categorized with the data from the interviews and refined into smaller segments. The data was defined and coded into different groups and additional themes were identified and that validated results (Denzin, 2009; Taylor, 2013).

Following the data analysis, the next step was interpreting the data from all sources, which included reading through the transcripts for a second time to detect evidence of similarities in the 3 data methods of data collection, the semi-structured interviews, the focus group and the open-ended questionnaires. The comparison of various themes was reported separately from multiple sources, and comparing the findings with the theoretical proposition that emerged from the analysis generated from the data (Castleberry & Nolen, 2018; Yin, 2017). A descriptive narrative resulted from study's outcome to describe the perceptions of nurses' personal smartphone use at work

and the comparison of findings from similar studies assisted in the validation of the study.

During the comparison of the findings, the divergence or discrepant cases are the pattern or explanation data that emerged from the data analysis (Lincoln & Guba, 1985; Walsh et al., 2015). Analysis of discrepant cases start with the identification of a deviant case is critical because such analysis may broaden, revise and confirm the emergent themes from the data analysis. The attentive consideration to contradictory or challenging observation can expand the expectation regarding the knowledge and results that qualitative research can produce. The acute observation helps a researcher advance the credibility of results and the eventual value of the empirical conclusion (Lincoln & Guba, 1985; Nowell et al., 2017). The final process for the single case study is reporting the results (Collins & Stockton, 2018; Yin, 2017).

Issues of Trustworthiness

Trustworthiness is single approach researchers use to influence themselves and readers that their research findings add knowledge and value (Lincoln & Guba, 1985). Lincoln and Guba (1985) advanced the concept of trustworthiness by presenting the criteria of credibility, transferability, dependability, and confirmability to correspond with the traditional quantitative assessment criteria of validity and reliability (Nowell et al., 2017).

Credibility

Lincoln and Guba (1985) refer to credibility as the confidence in the truth of the findings of a study, and the techniques to establish credibility include triangulation,

pronged engagement, peer debriefing, and member checking. The researcher strived to uphold objectivity and remained attentive to the participants' words, and recorded and transcribed the interviews. Consequently, the researcher was able to react and assume the role of the instrument that witnessed and collected the data (Cope, 2014). The data analysis process provided the detail that offered an understanding of the lived experiences. Pattern matching used as the technique for data analysis, focused on a similarity between the empirical and predicted pattern results helped strengthen the case study's internal validity (Yin, 2014). The researcher ensured that triangulation of various data sources increased the validity of the findings and ensured rich data (Bekhet & Zauszniewski, 2012; Fusch & Ness, 2015).

Transferability

Transferability refers to the transfer of the results of the study when patterns and descriptions from one context may be applicable to another (Stahl & King, 2020). External validity refers to the extent to which the results from a case study can be analytically generalized to other situations that were not part of the original study (Yin, 2014). In this study, I included thick descriptions of the collected and analyzed data contributed to the transferability of the results. The inclusion of detailed descriptions of the research problem and the associated methodological approach also contributes to transferring research findings to other settings (Anderson, 2017; Hagood & Skinner, 2015). An understanding transferability, as applied to the qualitative, single case study, assisted the researcher and readers to understand the phenomena of the study of the nurses' perceptions regarding the use of their personal mobile device while at work. A

homogenous target population and the subsequent descriptive stories encompassing the lived experiences, methodology and interview questions should be compatible with my findings in further studies. I used purposive sampling to identify nurses or advanced practitioners which added consistency to the small sampling size of this qualitative research and allowed for effective data saturation.

Dependability

Dependability refers to the consistency of the findings over time when the entire research process leading to the findings is replicated by other researchers (Nowell et al., 2017). In order to ensure dependability, participant qualifications were confirmed, consistent open-ended questionnaire questions and semi-structured interviews were conducted and recorded and transcribed verbatim. Changes did not occur during the data collection or data analysis process. In order to improve dependability, I identified, audited, and documented the processes used during data and collection. For this study, I developed a step-by-step process that included audit trails that documented and described all activity and decisions during the data collection process. The audit trail spreadsheet was maintained and updated daily, and included notes taken during the transcription of the semi-structured and focus group interviews, and the open-ended questionnaire review. The audit trails enabled me to track progress while anticipating remaining actions. The triangulation of multiple data collection methods was needed to add another element that increased the dependability and trustworthiness of the data.

Upon completion of the semi-structured and focus group interviews, I emailed a copy of the transcripts to the participants to edit and verify for accuracy. Minimal

changes from only one participant were made to the interview transcriptions, and she requested that a few words were omitted. The remaining participants approved the transcriptions that were presented.

Confirmability

Confirmability is a degree of impartiality or the extent to which the study's findings are influenced by the participants and not researcher bias, motivation, or interest (Lincoln & Guba, 1985). Confirmability focuses on the neutrality, impartiality, and precision of the data and is also connected to dependability because both dependability and confirmability can be established at the same time. The awareness of the subtle influences resulting from the interviews dictated that reflexivity minimized the methodological threats created by the conversational tone and impact on the study (Nowell et al., 2017).

Researchers reveal reflexivity and rigor through their actions, assumptions, expectations, and thoughts (Darawsheh & Stanley, 2014). As recommended by Barrett (2020), during this study I continually challenged myself to understand the data and clear my personal bias. In order to ensure a transparent data collection process, I used a self-reflective journal to record my views and assumptions and correct any bias. The inclusion of the concept of reflexivity allows the thought of their actions, assumptions, expectations to surface at a conscious level, thus influencing the research. The focus of reflexivity allowed the researcher to provide the rationale for their research decisions to generate findings that include rigor (Darawsheh & Stanley, 2014; Smith, 2008).

Ethical Procedures

In order to ensure compliance with Walden University requirement to maintain ethical practices in research for doctoral students, it is necessary to obtain approval from Walden University's Institutional Review Board (IRB) prior to the collection, and data analysis. In this case study, I followed and complied with every IRB requirement to access participants and the data for the study. To ensure the protection of human subjects, the IRB ensures that all participants are free from harm or injury during the study (Stake, 2010). I submitted my application to the IRB and kept a record of my assigned application number issued by the IRB. Upon the IRB approval, I accessed the participant research site, contacted participants, conducted interviews, and collected data.

As human subjects, all participants in the study must participate voluntarily. The purpose of the consent form is to indicate their voluntary intent and willingness to take part in the study. IRB mandates that all participants sign an informed consent form. The informed consent procedure confirms that the participant in the study agreed that they understood the research information, the process, and any risk. If the participant agreed to continue with the study, a consent form was emailed to them and, if not received by the researcher, followed up after two weeks to ensure a consent form is received. The informed consent form served as an opportunity for the participants to ask questions and clarify any concerns about the research or process. Other than answering participant questions or addressing concerns, the dialogue did not continue until the researcher received the signed consent form or a reply that stated: I consent. If a participant decided to withdraw from the research study, the researcher thanked them and sent them any

notes that were recorded from their interview, in addition to any documentation, and the researcher would, subsequently discontinue all communication. Participants who decided to continue to participate in the study were contacted to schedule a time to meet with the researcher (Ferreira et al., 2016; Salmons, 2018).

Ethical concerns include various aspects of research design including research objectives, validity and methods, and the concept to protect the participants' dignity, rights, safety and well-being (Holloway & Galvin, 2017; Maxwell, 2013). As required, the conduct of the study must follow the highest ethical standard, and the researcher must take full responsibility of the scholarship, professionalism, and implementation for appropriate methodology (Yin, 2017). Strict adherence to ethical standards and the protection of the participants was adopted with the following precautions:

- Obtained approval from the Institutional Review Board (IRB), and approval number 03-17-21-0743207 was assigned.
- The study's objective was discussed both verbally and written to ensure that the participants had a thorough understanding of the research, including the data collection strategy and use.
- The informed consent form was sent to each participant, completed, signed, and returned or returned with the phrase, "I consent" as a reply to the researcher.
- Participation was entirely voluntary, and the participants were informed of their rights to withdraw, unconditionally, at any time from the study.

- The participants were informed about the interview protocol and other data collection devices and actions.
- In order to protect the participants' identity and ensure anonymity, I randomly assigned labels P1 to P18 in place of actual names during data collection and analysis.
- The participants chose the interview date and times most convenient to them.
- I informed the participants of the interview protocol and the data collection devices such as Zoom or Skype and voice recorder that were used and I solicited any concerns, if any.
- I sent all of the participants' a copy of their interview transcripts and asked them to verify the accuracy of the transcripts, and if needed, return the transcript with edits, or include additional information. All of the participants verified their transcripts.
- All electronic files containing data, interview notes, and all other research-related files are password protected and encrypted and can only be accessed by me. Hard files are locked in a cabinet that I can only access. I will erase, delete, incinerate, and destroy all data, both hard and electronic copies collected after 5 years.

Summary

Chapter 3 included details that described the research design and rationale for choosing a qualitative single case study design with embedded units to explore the

research question, role of researcher, and methodology. The research question, purpose of the study, recruitment of the participants, and the data collection process and analysis aligns with the research design. As discussed, my role was to act as the instrument of the research and an interviewer, recorder, and analyst of the qualitative data rather than as a participant in the study. Potential research biases were identified and mitigation was addressed using reflexivity.

Chapter 4 provides the detailed description of the research setting, participant workplace, and the actual data collected. The summaries and verbatim findings from the focus group, semi-structured interviews and open-ended questionnaire are presented. Chapter 4 also included the description of the analysis, the results, and the presentation of evidence that supported the credibility, transferability, dependability, confirmability, and the trustworthiness of the study.

Chapter 4: Results

The purpose of this qualitative, single case study with embedded units was to describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. A single case study design with embedded units (Yin, 2017) was used to gain a deeper understanding of the perceptions of the nurse regarding distracted patient care while participating in personal social media or other smartphone-related activities on their mobile devices. The primary research question was answered and analyzed the perceptions of nurses who use their personal smartphones while at work. The primary research question that guided this study was as follows:

What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

The research question was designed to identify and address why it is important to fill a gap in knowledge (Merriam & Tisdell, 2016). The gap in the literature also identified the need to address a problem that is specific to nurses' perceptions of their use of the smartphone at work (Ford, 2018; Papadakos & Berman, 2017). The study may also extend the knowledge based on the empirical evidence specific to the nurses' perception and the explanation related to the distraction-conflict theory's premise that the use of the smartphone conflicts with their primary patient-facing task.

I utilized thematic analysis to examine the data collected from semi-structured interviews, the open-ended questionnaire, and the focus group to identify and record principal themes revealed from the participants' perceptions. Thematic coding was used

to organize the data and document the established subthemes within the three data sources for comparison. This chapter presents the qualitative study results of the perceptions of nurses who use their personal smartphone during work. I also presented the details of the research setting, data collection and analysis, evidence of trustworthiness, study results, and a summary.

Research Setting

Registered nurses, licensed practical nurses, and advanced practice registered nurses with active LinkedIn accounts who met the inclusion criteria were identified as prospective participants. I conducted a search using network sampling through the professional social media platform LinkedIn that included the criteria: registered nurses, licensed nurses, and advanced practice registered nurses. The criteria of the participants included active, full-time employment as a licensed nurse in a workplace that included direct patient care responsibilities. After the network search revealed 1,027 matches, I was able to send an email directly to their LinkedIn account. After receiving my email, the prospective participants were able to accept my email, or decline my email, or choose not to respond. One thousand twenty-seven individual emails were sent to the prospective participants LinkedIn email accounts. I planned to interview a total of 15 to 20 participants for the semi-structured interviews, and 4 nurses to compose the focus group, and 20 completed open-ended questionnaires.

I emailed a preliminary email, the consent form including the confidentiality agreement, and Recruitment Letter (Appendix C) to the nurses who agreed to participate in the study. After I received formal consent, I scheduled an interview date and time

convenient to the participant. A total of 50 nurses provided formal consent for inclusion in the semi-structured and focus group interviews. Of the 50 participants who provided consent, I was able to conduct 22 interviews, which included 18 semi-structured interviews and one focus group that included 4 participants. Twenty-eight participants were not scheduled. Ten of the 28 potential participants were not able to find a convenient time based on their schedule to meet; 12 did not reply to my emails requesting their available time; and 6 participants were scheduled and did not show during our meeting. I emailed the 6 participants who did not join the meeting to reschedule and the attempts were unsuccessful. In addition, 30 nurses did not consent to participate in the study and emailed to request additional information.

Based on the participants' preference, Zoom video, Skype telecommunications platform, or telephone, interviews were scheduled and ranged from 20 to 60 minutes in duration. I emailed the open-ended questionnaire to 58 participants who expressed interest and requested additional information, or provided consent and were not successfully scheduled for interviews based on their inability to indicate their preferred time, or a lack of response after I sent inquiries for their preferred time and venue to meet. A total of 58 emails, which included the link to the questionnaire, were sent to nurses who did not participate in the semi-structured interview or the focus group. As a result of the email that included the link to the questionnaire, a total of 32 out of the 58 nurses who did not participate in the semi-structured interviews or the focus group, completed the open-ended questionnaire (Appendix B).

Thirteen nurses who did not complete the open-ended questionnaire replied to my email to indicate the reasons why they were not able to respond to the questionnaire. The reasons included: they were not able to use their smartphone while working, or too busy to participate. Overall, the responses were positive, and those who expressed interest to participate wished me well and indicated that the topic was relevant and interesting.

Demographics

The demographics of the data collected included the participants' place of work and licensed degree. All 18 semi-structured interview participants (Table 1) resided and worked in the United States and represented 10 states. The demographic work location composition of the 18 semi-structured participants included 50% hospitals, 17% travel agencies, and 17% clinics, and the remaining were employed in virtual care, clinical trials, and independent contractor. Seventeen females and one male participated in the semi-structured interviews.

The 32 open-ended questionnaire participants (Table 2) included 52% who work in hospitals, 10% clinics, and 6% home health, and the remaining participants were employed in private practice, ambulatory, insurance, rehab, and a county jail. All participants reside and work in the United States and represented 18 states. Twenty-nine females and 3 males completed the open-ended questionnaire.

A purposeful participant count of 4 was attained for the focus group in order to allow for rich dialogue and provided unique details and perspectives. The 4 focus group participants (Table 3) were evenly distributed at 25% and worked in a hospital, clinical

device vendor, home health and travel agency. All participants resided and work in the United States and 4 states are represented. All 4 participants were female.

The 54 total number of nurse participants who participated in the 3 data collection methods work in the following locations: 49 percent of the total participants work in hospitals, 11% work in clinics, and 6% work in home health care and clinics. The 54 nurse participants' degrees included: 85% registered nurses, 11% licensed practical nurses and, 4% advanced practice registered nurses. A total of 50 females and 4 males participated in the 3 data collection methods for this study.

Unique pseudonyms were assigned to all participants to conceal their identity and maintain confidentiality. The pseudonyms given to the participants were in the ABC and X format, with A representing the letter P for the semi-structured interview participant, X represents the numerical identifier assigned to each participant, B for the open-ended questionnaire participants, and C for the focus group participants. The demographics in Table 1 represented the semi-structured interviews; Table 2 represented the open-ended questionnaires; and Table 3, represented the focus group participants.

Table 1
Participants' Demographics Semi-structured Interviews

Participant	Licensed Degree	Workplace	State	Gender
P1	RN	Hospital	New York	Female
P2	RN	Hospital	Arkansas	Female
P3	RN	Hospital	Pennsylvania	Female
P4	RN	Hospital	California	Female
P5	RN	Hospital	Arkansas	Female
P6	RN	Virtual	New Jersey	Female
P7	RN	Travel/Hosp.	California	Female
P8	RN	Clinical Trials	Florida	Male
P9	RN	Independent	Illinois	Female
P10	RN	Travel/Hosp.	Virginia	Female
P11	RN	Clinic	New York	Female
P12	APRN	Hospital	Georgia	Female
P13	RN	Hospital	Illinois	Female
P14	RN	Hospital	California	Female
P15	RN	Clinic	Texas	Female
P16	RN	Travel/Hosp.	New York	Female
P17	RN	Hospital	Texas	Female
P18	LPN	Clinic	New York	Female

Table 2

Participants' Demographics Open-ended Questionnaire

Participant	Licensed Degree	Workplace	State	Gender
B1	RN	Hospital	Illinois	Female
B2	RN	Private Sector	California	Female
B3	RN	Home Health	Arizona	Female
B4	RN	Hospital	Maryland	Female
B5	RN	Clinic	Texas	Female
B6	RN	Hospital	New Jersey	Male
B7	RN	Ambulatory	California	Female
B8	RN	Hospital	Texas	Female
B9	RN	Independent	Maryland	Female
B10	RN	Hospital	Ohio	Female
B11	RN	Rehab	Texas	Female
B12	RN	Hospital	Florida	Female
B13	RN	Home Health	Tennessee	Female
B14	RN	Hospital	Texas	Male
B15	RN	Hospital	New Jersey	Female
B16	RN	Travel/Hosp.	Arizona	Male
B17	RN	Hospital	Oregon	Male
B18	RN	County Jail	California	Female
B19	RN	Pharmacy	Texas	Female
B20	LPN	Clinic & Hosp.	New York	Female
B21	RN	Hospital	Texas	Male
B22	LPN	Hospital	Louisiana	Female
B23	RN	Clinic	Iowa	Female
B24	RN	Hospital	Washington	Female
B25	RN	Hospital	Connecticut	Female
B26	LPN	Private Practice	Indiana	Female
B27	RN	Insurance	Florida	Female
B28	LPN	Hospital	California	Female
B29	RN	Hospital	Massachusetts	Female
B30	LPN	Hospital	Oregon	Female
B31	APRN	Clinic	Florida	Female
B32	RN	Hospital	Michigan	Female

Table 3

Participants' Demographics Focus Group Interview

Participant	Licensed Degree	Workplace	State	Gender
C1	RN	Clinical Device	Florida	Female
C2	RN	Travel/Hosp.	North Carolina	Female
C3	RN	Home Health	Georgia	Female
C4	RN	Hospital	Oregon	Female

Data Collection

The process to identify, recruit, and collect data began after I received IRB approval. My IRB approval number was 03-17-21-0743207. The data collection phase for the interviews and the focus group began on March 18, 2021, and concluded on March 26, 2021. The data collection phase for the participant submission of the open-ended questionnaire began on March 18, 2021, and ended on April 2, 2021, when no new themes emerged, and data saturation was reached. In order to provide clarity and ensure relevance of the interview questions, 2 subject experts were asked to provide feedback. Both experts agreed that the questions and the interview protocol was sufficient to support the single case study and data analysis. The subject expert's feedback supported the trustworthiness and credibility of the study's qualitative findings.

Upon receipt of a participant consent email, I immediately replied to the email to determine a preferred date and time within the week. I adjusted my schedule to accommodate the participant's requested interview time and date requests, and emailed the participant a Microsoft Outlook invitation. All interviews were conducted utilizing the interactive live platform Skype, Zoom, or the telephone. All interviews were

conducted over a 1-week period with an average of 3 interviews per day. All interviews were conducted and recorded March 21, 2021 to March 26, 2021. Zoom, Skype and the telephone participant interviews were conducted while they were located within their homes, while I was located in an office in Connecticut. The semi-structured interviews were 20 – 60 minutes in length, and the focus group interview was completed in 60 minutes.

All participants were asked 13 identical questions for the semi-structured interviews, open-ended questionnaire, and the focus group interview. The inclusion of 13 identical questions ensured the alignment of the interviews and maintained the focus of the research topic. Data was collected from 18 semi-structured participant interviews, 32 completed open-ended questionnaires, and 4 participants were interviewed in the focus group. The interview participants established the virtual or telephone interview venue. Fifteen semi-structured interviews were conducted on Zoom, 2 on Skype and 1 telephone. The 4 focus group participants were available on the same day and time, and preferred to meet on Zoom.

All Zoom and Skype interviews were recorded on the respective platforms, and the Rev Recorder application was activated to back-up the Zoom and Skype interviews. One telephone interview was recorded on the Rev Recorder application on my iPad. A second handheld recorder was used to provide backup for the telephone interview. Interviews were recorded verbatim and transcribed, and shared with the participants for transcript review.

During the week of March 21, 2021 to April 3, 2021, the open-ended questionnaire link was emailed to 58 prospective participants who expressed interest and requested additional information, or provided consent to participate and did not respond to my emails requesting a preferred time and date to schedule the interview. A total of 32 participants completed the open-ended questionnaire. The results of the questionnaire were exported into an excel spreadsheet. No unusual circumstances were encountered during data collection.

Data Analysis

Case study data analysis is the process of examining, categorizing, tabulating, testing, and converging case study evidence to produce empirically based findings (Yin, 2017). I conducted both data collection and data analysis concurrently. The connection of data collection and data analysis processes increased research rigor (Miles et al., 2014).

This qualitative single case study with embedded units described the nurse's perception of possible distracted patient care while participating in non-work activities on their smartphone at work in the clinical setting. The emerged embedded units answered the explanatory questions, such as the how and why, based on what conditions nurses used their personal smartphones at work (Yin, 2017).

The primary data for this study included semi-structured interviews, an open-ended questionnaire, and a focus group interview. The collected data from the interviews, the open-ended questionnaire, and the focus group revealed important themes, patterns, identification of the types, development of codes, and explanations connected to the principal research question of the study (Castleberry & Nolen, 2018; Maguire &

Delahunt, 2017). NVivo software was used to record, code, and analyze the data. The researcher used NVivo to input the data of the semi-structured interviews, open-ended questionnaire, and the focus group interview results.

The five specific analytical techniques that add rigor to case study analysis are pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis (Yin, 2014). For this study, I used the pattern matching technique to analyze the data that described the perceptions of nurses who use their personal devices during work (Yin, 2014). Yin found that pattern matching for case study research is one of the most useful techniques (Yin, 2014). According to Yin (2014), researchers use pattern matching techniques to compare a single or different multiple predictions with an empirically based pattern. The pattern matching between data sources established internal validity as the case strengthens when the patterns match (Yin, 2014). The development of themes was compared with each other for similarity and difference (Wilson et al., 2019).

The thematic coding process consisted of an evaluation of data, including semi-structured interviews, an open-ended questionnaire, and focus group interview. The case study data analysis process included examining, categorizing, tabulating, and utilizing a comparative approach to identify common themes that produced empirically based findings (Yin, 2017). The coding process generated recognizable patterns that could be composed into categories to establish emerging themes. My analysis concluded with a focus on the core themes and subthemes from the findings in the semi-structured interviews, open-ended questionnaire, and the focus group interview. The subsequent codes, subthemes and themes supported the answer to the central research question and

the conceptual framework, which sought to understand the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses.

The themes were generated from the findings of the semi-structured interviews, open-ended questionnaire, and the focus group interview. The participants answered identical questions, in identical order. As a result of the findings, identical codes from all 3 data sources were revealed during the data analysis process. The participants were able to answer the central research question that described the perceptions of nurses' personal smartphone use at work. The resulting 42 codes, 9 subthemes and 4 themes from the 18 semi-structured interviews, the 32 completed open-ended questionnaire, and the 4 participant focus group interview are presented in Table 4.

Table 4

Coding, Subthemes, and Themes – 3 Data Sources

Codes	Subthemes	Themes
Provide a safe environment for patient healing	Safe environment	Personal attachment to smartphone
Provide a safe environment for themselves		
Recharging and disconnecting for mental rest		
Conduct medical calculations		
Look up medications		
Taking picture of a patient to send to provider		
Effective tool used as a substitute personal computer		
Device app used to enter into patient chart		
Share and receive information		
Reading and sending emails and texts	Emails, texts, and phone calls	

(table continues)

Codes	Subthemes	Themes
Making and receiving phone calls		
Immediate access to family emergency situations		
Quick and easy texts to provider or peers		
Provide link to websites and apps to patients	Patient education	
Use search engine to look up information		
Provide education and insight to patients Communicate		
COVID-19 working condition concerns	COVID-19 concerns	
COVID-19 virus exposure on smartphone		
Delayed critical patient care	Identified negative distractions	Distractions based on smartphone use
Lack of attention to patients		
Patient perception of lack of care		

(table continues)

Code	Subthemes	Themes
Surfing the internet	Social media use during work hours	
Watching videos and movies		
Scrolling Instagram or other social media sites		
Nurse was not approachable to peers and providers		
Nurse was not approachable to patients		
Sharing personal information with patients	Identified positive distractions	
Smartphones are a part of daily life		
Helps nurse to stay awake during down time		
Used to initiate patient conversations		

(table continues)

Codes	Subthemes	Themes
Exposure of patient identifiers	Possible HIPAA exposure	Patient privacy risks based on smartphone use
Potential for HIPAA exposure		
Taking pictures and making videos in clinical areas		
Posting patient information on social media		
Accepting social media friend invitations from patients		
Sending patient information with non HIPAA compliant software		

(table continues)

Codes	Subthemes	Themes
Not perceived as professional	Negative perception of nursing	Nursing not perceived as professional
Negative patient perception of nurses		
Smartphone use not allowed based on company policy		
Smartphone use must remain on silent based on company policy		
Establish protocol for the effective use of the smartphone at work		

The data analysis process included the review of discrepant cases, which were new or unexpected findings (Timulak, 2014). There were no areas of concern while coding or transcribing, and conflicting data was not present since the participant group consisted of registered nurses who share similar experiences and, for the most part, perceptions of smartphone use at work. After verifying the frequency of the words and transferring all 3 data sources to NVivo software, I did not find new or unexpected findings. It is necessary to disclose that I did not encounter any problems during the semi-structured interviews, focus group interview, or open-ended questionnaire data gathering process that could cause any concern during the data analysis phase of this study.

Evidence of Trustworthiness

Credibility

Lincoln and Guba (1985) referred to credibility as the confidence in the truth of the findings of a study, and the techniques to establish credibility include triangulation, pronged engagement, peer debriefing, and member checking. As the researcher, I remained attentive to the participants' recorded words, and transcribed the interviews verbatim. Consequently, I was able to react and assume the role of the instrument that witnessed and collected the data. After the participants consented and were assured of confidentiality regarding the study, I achieved a comfortable level of conversation and received in-depth responses to the interview questions.

Member checking is achieved after the researcher invites the participants to review the findings for accuracy and intended meaning (Shenton, 2004; Welch et al., 2014). The data analysis process, which included cross-case synthesis, provided the detail that offered an understanding of the lived experiences. Pattern matching was used as the technique for data analysis and focused on a similarity between the empirical and predicted pattern results that helped strengthen the internal validity of the case study (Yin, 2014). I ensured triangulation of the 3 data sources, the semi-structured interviews, a focus group, and open-ended questionnaire, which increased the validity of the findings and ensured rich data.

Transferability

The detailed descriptions of the qualitative single case study with embedded units ensured an understanding of the perceptions of nurses who provide direct patient care

who use their smartphone while at work in the clinical setting. External validity refers to the extent to which the results from a case study can be analytically generalized to other situations that were not part of the original study (Yin, 2014). Transferability, as applied to the qualitative, single case study, assist the researcher and readers in understanding the phenomena of the study (Abdalla et al., 2018; Nowell et al., 2017). To achieve transferability, I detailed the description of the participants, settings, and findings of the study, which allowed readers to formulate conclusions that would apply to other situations. Similar target populations and the subsequent descriptive stories that encompass the lived experiences, methodology, and interview questions should be compatible to findings in further studies (Cope, 2014; Jorrin Abellan, 2016; Sowicz et al., 2019).

Dependability

Dependability refers to the consistency of the findings over time when the entire research process leads to the findings replicated by other researchers (Nowell et al., 2017). In order to ensure dependability, confirmed participant inclusion criteria, and the interview protocol was followed and all 13 questions were presented for all semi-structured interviews, open-ended questionnaire, and the focus group interview. The semi-structured and focus group interviews were recorded, and transcribed verbatim. Changes were not anticipated and did not occur, during the data collection or data analysis process.

To improve dependability, I identified, audited, and documented the methods used during data and collection. I developed a step-by-step process that included audit

trails that documented and described all activity and decisions during the data collection process. The audit trail spreadsheet was maintained and updated daily, and included notes taken during the transcription of the semi-structured and focus group interviews, and the open-ended questionnaire review. The interview questions for the semi-structured interviews, focus group interview and open-ended questionnaire were carefully documented and applied to all data sources to triangulate themes (Appendix A, Interview Protocol). All participants received a copy of the transcript to edit and verify for accuracy. Only one participate replied to change a few minor words in the transcript. The update did not change the substance of the transcript and I completed and returned it to the participant for a second review. The participant responded affirmatively.

Confirmability

Confirmability is a degree of impartiality or the extent to which the study's findings are influenced by the participants and not researcher bias, motivation, or interest (Lincoln & Guba, 1985). Confirmability focuses on the neutrality, impartiality, and precision of the data and is also connected to dependability because both can establish dependability and confirmability simultaneously. To ensure confirmability, I deployed a design instrument that I did not manipulate or deviate from, as I was deliberately aware of my position as an instrument of the research. The awareness of the subtle influences resulting from the interviews dictates that reflexivity will minimize the methodological threats created by the conversational tone and impact the study (Nowell et al., 2017).

The development of reflexivity begins with the recognition of the relevant personal experiences of the participants. In my role as a researcher, I was acutely aware

of the difference between the identified problems and the facts that revealed during the interviews and other participant sources. Researchers demonstrate reflexivity and rigor through their actions, assumptions, expectations, and thoughts (Darawsheh & Stanley, 2014). The inclusion of the concept of reflexivity allows the review of my actions, assumptions, expectations to surface at a conscious level, thus influencing the research. The focus of reflexivity allowed me to provide the rationale for my research decisions to generate findings that include rigor (Darawsheh, & Stanley, 2014; Smith, 2008).

Study Results

The purpose of this qualitative, single case study with embedded units was to describe and gain a deeper understanding of the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. The study result provided the answers and offered insight for the following research question:

What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

This single case study revealed nurses' perceptions of personal smartphone use at work, and patterns and themes identified from the raw data collected from the semi-structured interviews, open-ended questionnaire, the focus group interview, and subsequent data analysis. The process involved comparing various themes that emerged from the analysis of the data and the theoretical proposition generated from the literature review. The main factor of thematic analysis is the constant comparative method (Miles et al., 2014). According to Yin (2017), the strength of the findings of a case study is

dependent on the ability to be generalized to the theoretical propositions documented in the literature.

Baron's (1986) distraction-conflict theory provided a theoretical lens for exploring the influence that distractions and interruptions have on work performance. In an updated extension of Baron's (1986) theoretical work of distraction on work performance, Min (2017) concluded that social network sites could disturb or enhance the performance of different types of tasks differently, thus influencing the sustainability of task performance. Min's updated extension of distraction-conflict theory provided insight into evaluating personal smartphone use as a technology that may distract nurses from their primary tasks in the clinical setting.

In addition, I developed themes and subthemes using word repetitions and key words within the transcripts. I compared the findings of the three data collection methods from this study. Analysis to identify discrepant cases is critical because such analysis may broaden, revise and confirm the emergent themes from the data analysis. The acute observation of the analysis assisted me in advancing the credibility of results and the eventual value of the empirical conclusion (Lincoln & Guba, 1985; Nowell et al., 2017). The final process for the single case study is reporting the results (Collins & Stockton, 2018; Yin, 2017).

The study's findings did not reveal discrepant data dissimilar with the patterns or themes, and therefore, did not influence the study findings. The data analysis reflected all of the data collected and included the findings of the semi-structured interviews, the focus group, and an open-ended questionnaire. I used thematic analysis to organize the

data and document the established subthemes within the three data sources for comparison. For this study, I applied the pattern matching technique to analyze the data that explored the perceptions of nurses who use their personal device during work. According to Yin (2014), researchers use pattern matching techniques to compare a single or different multiple predictions with an empirically based pattern. The pattern matching between data sources establishes internal validity as the case strengthens when the patterns match (Yin, 2014).

The following sections present the 4 themes representative of the participants' responses that emerged from the semi-structured interviews, open-ended questionnaire, and the focus group. Examples and verbatim quotes from the participants' responses provided in-depth insight into the perceptions of nurses who use their smartphone at work, and answered the research question. The research question was: What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

Themes: Semi-structured Interviews

A total of 42 codes, 9 subthemes, and 4 themes emerged from the 18 semi-structured interviews. Table 5, listed after the theme narratives, represents the deconstruction of the codes, subthemes, and themes as they originated and answered the research question. The first column represents all of the codes and the corresponding subtheme, and themes representative of the nurses' perceptions regarding distracted patient care in their clinical workplace due to personal smartphone use.

Theme 1: Personal attachment to smartphone. The first theme emerged from the interview questions from the 18 nurses based on the codes such as a safe environment for themselves and their patients, and to use the smartphone as a tool that substitutes as a personal computer to perform various functions, including the ability to retrieve information or calculate medication. Participants indicated that their smartphone enables them to stay in touch with family, peers and physicians. Participant P1 stated:

"I use it just in case of an emergency I need to make a call."

Participant P2 focused on the ability to provide a safe environment for their patients and the feedback she received motivated her to continue to use her smartphone. Participant P2 indicated:

> They just described how they made the patient feel afterwards. And that brought joy to them. And in that case, it was just something, like, today my patient made me smile or something like that. And for that, I think that's pretty good because it boosts morale.

Participant P12 corroborated the need to help patients educate themselves and said:

> I have introduced apps to help track patients' weight, exercise, and food intake. Since I most recently worked with Medicaid patients, I help them locate service like the bus route, how to put their bus pass into their phone, food pantries, etc.

Participant P7 acknowledged that the need to provide education and insight to patients is vital for their patients' well-being and stated:

"I can quickly refresh my knowledge of disease processes, hospital policies, skills procedures, or drug information. This allows me to provide better care as well as more effectively educate patients and family members."

Participant P3 stated the need for nurses use of smartphones in the workplace.

> I think they're amazing. I think that they are a good asset in health care. I think they're very much needed working in an inpatient facility or one organization that claims to be very strict with smartphones. I can see why they are strict with it, but at the same time, I feel like they need to have a little bit of sympathy for us and understand that things come up we need to use them as well but for the most part. I think smartphones can be an asset to health care and they help in crunch times and I think they can be an asset.

Nurses also felt the need to help their patients understand their medication and other health care follow up. The patients want to connect with the nurse and the Participant P15 stated:

> Well, as they say, I use it for education, sometimes I give them links, more for my teenagers. If I give you a sheet of paper, you're not you're probably going to leave it somewhere and never see it again. But if I tell you, I'm trying to stay updated, and I tell the parents, I have Instagram. I have, like, of course, you know, like, some blogs or something that I try and see, which way can I use this? And then my children are, my patients can look it up. I do see a lot of depression, anxiety. And we're not we're going to try other things before with medication because he was 13. So let me tell you to go ahead and just look for puppy videos, or some

happy stuff, listen to good music. I'll show you this, playlist of happy music instead of and then, Oh, yeah, good. She listens to like, those, like super sad music. Okay, let's just try and like stay away from that. There's other things, it depends on what you're looking for. So I tell him about Instagram videos and that are pages that they can follow. It's all about what you're going to be exposed to, that's going to help you feel better. So we ended sometimes with, okay, well, what do you do on your phone? I ask, do you just follow the people at school and then tell you more about like, cyberbullying or anything like that? And that I feel that kind of opens up for them to see, oh, she understands what's going on? I hope.

Participant P14 stated that her smartphone was vital for her to communicate COVID working condition concerns to her peers and the general nursing population.

My health care organization won't say that this is positive, but we recently went on strike about a couple of months ago, during COVID. And nurses did post that on social media, they did post the issues that we've had. I saw a lot of nurses' nationwide post issues that they've had as well. I think that was positive because it brought light to people who are not really in health care. Because if you're not really in health care, you don't really know the problems that exists within health care, you think that everything's hunky dory within our health care system. And it's not. So I do believe when they did post a lot of those things, and even I did post just workplace scenarios, not with patients, you know, situations, I think that brought light to a lot of people and let people know that. Even though nurses are striking during a pandemic, we're doing so for good reason. You know, a lot of

> people just thought that we were just doing it because we wanted to get more money or because we just didn't want to go to work. And it's like, no, we actually have really big issues that we want to address. So we use social media as a platform for us. And I think we were able to gain a lot of support with that.

Nurses were alarmed regarding the risk of the transmission of COVID-19 virus when protective protocol is not used. In many cases, nurses casually pick up their smartphone in the presence of possibly infected patients or peers. Participant P12 was concerned and stated:

> I try not to use my phone much at work just because of the environment. The fact that you know that COVID can be left on your phone if you use it while treating patients. And this is something that you will be bringing back home. So the less that I have it on me, the better for me.

Nurses also felt that their smartphone use was important to provide a safe environment for themselves. Nurses work shifts that include predictable and unpredictable events, and welcomed the downtime to refresh and indulge in activities that do not require focus and thought. Playing games and checking social media on their smartphone is an important feature.

Theme 2: Distractions based on smartphone use. Both negative and positive distractions were discussed during the interviews. Unanimously, the nurses' participation in social media activities during work time was identified as a negative distraction for both the patient and their peers. The only acceptance of social media activities that were the exception occurred during the nurses' break and the smartphone and the ability to

scroll their social media was perceived as a way to stay awake during the down time, or when patient activity was minimal. Participants indicated that their smartphone was a vital tool to stay connected. Participant P3 said:

> I actually used my personal cell phone for calling and texting my colleagues, I work in procedural areas. So an example, would be texting anesthesia to let them know that we're ready, or that the patients' in the department and texting the doctor to let him know that the patients in the room, we're ready to go.

Participant P1 offered her perception of nurses who use their smartphone for non-work related activities and stated:

"A lot of nurses, they can use it and get distracted. Let's say for instance, you're having a slow day and a nurse can start checking social media or watching movies. I've seen it."

Nurses also felt that they wanted to share personal information with family, friends, or patients. Participant P8 stated:

> Just sharing, this is all just personal for me. I don't know how it is for everyone else, but I'm just sharing, sharing with people, pictures or whatever, just to say, I'm human, too. And you shared, you shared with me, so let me just share with you. That's great because they are sitting there or laying there and they can't see their families. And it's a lot of isolation. That's, especially with COVID. It's hard. They want that personal connection with the person who's standing next to them, right? Because everything is so distant. So they don't get to see a smile, they don't get to see that caring part of people anymore.

A nurse provided specific details about social media use at work that created issues. Participant P6 stated:

> An example of one time where I kind of got in trouble. Our nursing department created a Social Media page, that's supposed to be a way for the nurses within the organization to communicate if there's any events coming up, etc. Someone created an event where you were supposed to get cookies or cupcakes or something. And we sent somebody down from the unit to pick up the cookies and cupcakes, and they didn't have any. So when I was on my break, I posted on to this event that they had invited me and asked if there would be any available later, because there were some people in the department that were interested, and then I ended up getting reprimanded by my manager. Oh, boy. I was on break; I was out of the patient care area. I understand that maybe I shouldn't have been posting on social media. But I felt that it was confusing, because why would my organization create a Social Media page invite me to an event on a day they know that a lot of people are working? And then why would I then be in trouble for interacting with that group? So to me, I felt that that was a little frustrating. And it made me not want to contribute to that group anymore.

Nurses felt that smartphones also create a distraction that may compromise patient care or prevent a patient or peer from interrupting them while they are focused on their smartphone. Participant P9 explained:

> I think maybe if a patient or family member saw me on my phone, they could maybe not feel as comfortable asking me a question or reaching out in my area.

> I'm in a very patient facing, our recovery and prep area. As a nurse have no privacy, my patients see everything that I do. So you know, they're absolutely aware if we're not necessarily paying attention.

Nurses expressed concern about the negative impact for patients' during non-work related smartphone use while at work. Participant P4 stated:

> I don't know that there was any major negative, clinical significance, but how it made a patient feel when they're on the call late, and they need something, and they cannot help themselves. I work in a burn ICU. And we have, we have six sick patients, and they literally cannot do anything for themselves. So when they are relying on someone who is on their phone, or on a phone call, that's personal, or they have their earbuds in and they're not listening out, that can be that can be huge and can be extremely disheartening. These people are already in very, very vulnerable situations. How can they trust that you're going to be meeting their needs? I can only imagine how that that would feel to be on the call and a patient's needs are not being met and the reason why is because your nurse is busy on her phone.

Theme 3: Patient privacy risks based on smartphone use. Participants indicated that their smartphone is a vital tool to assist patients for websites that will provide additional follow up care information. In addition, nurses stated that they use their smartphone to look up and validate appropriate medicine and medicine calculations. Participant P4 stated:

> Having to run out and check out big thick drug book or turn to the PDR Guide, which was a big book. Yeah, there were just so many situations, that information and guidelines and references were not at hand. I think it slowed the whole process down. I believe these are an excellent tool for facilitating patient care at a faster rate than it used to be at all. Everything in moderation. That can't be your phone can't be your sole source, you've got to use a little intuition and understanding. But it's a good reference and a confirmation sometimes. It's good.

Nurses use their smartphone to effectively communicate patient information and Participant P8 stressed the importance of efficiency and stated:

> If I am seeing one of their patients, I can communicate with them to find out what they know what's going on. Also, I communicate with the nurses out front while I am with a different patient. If I get a critical lab or some other information, Athena also has Athena capture so if I need to take a picture of a wound, I scan the barcode within Athena and I take a picture of the it on my phone. It puts it directly into the patient's chart and automatically removes it from my phone so that I am not caught with a HIPAA violation. So I use my smartphone a lot while I am working, that's amazing.

Participant P2 explained concerns about nurses taking videos in the clinical setting and stated:

> We have an amazing profession, but it can be a little iffy, if someone accidentally did a video and the patient's chart, their first name was on the chart in the background and accidents can happen so easily. And when we are not thinking

> and really good nurses that are not trying to do anything bad. I've heard some horror stories of them getting fired over pictures and stuff like that. So try to avoid that altogether.

Nurses stated that posting information on social media is a concern. Participant P8 narrated the concern for blurred boundaries which consisted of a friendship between the patient and their nurse and explained:

> Back when I worked on a burn unit, and we spent a lot of time with patients for weeks and weeks and weeks, and we were with them from admission to discharge. And, then even in outpatient setting, staff would develop relationship with the patients like a friendship. They will become friends on social media, and, they may post updates, usually with the patient's permission. But I've definitely seen where people have posted, it was a really rough night, and they describe exactly what happened, the outcome and, in smaller communities, people could pick up really quick, who that was.

Participant P12 offered additional insight to potential HIPAA exposure and taking pictures in the clinical setting and stated:

> It makes me nervous when people want to take pictures at the nurse's station. I'm always like hyper aware in case someone is walking by or patients are walking by, or there are some papers or binders or charts that could be seen always makes me really nervous. If they wanted to take a selfie, I always say, oh, can I see that picture? I am not trying to be rude about it, I just to make sure it's okay and not

> showing any patient identifiers. That's smart. It's not like you're at the park. And that's my job. So, that's alright.

Nurses felt that social media posts on TikTok, which is an application consisting of short videos, has infiltrated the in-patient floors at hospitals. Participant P3 stated:

> I think it could be a concern. Because there could be a perception that the nurses are distracted. Either scrolling through social media, or they could be doing TikTok videos or posting from work onto social media, which I personally find that that's a concern. And, that can all tied to HIPAA violations.

Participant P6 reiterated the nurses concern regarding TikTok videos staged on the patient floor, and stated:

> Possible HIPAA violations, doing that in your unit in the hallway, and it just makes me cringe, because what if you're making your little TikTok video, and there happens to be Patient Transport walking your patient, or there is someone with a chart in their hand, and, it's the internet, it goes out, and everybody can see. It never comes back. It's just deleted, and it never goes away. It's not like that. Somebody will find it. And then they will say, I did not give you my permission to show my information.

Theme 4: Nursing not perceived as professional. Nurses are concerned about their professional image. Their patients must know that their nurse is attentive and attuned to their needs. Participant P3 explained:

> You can see the patient's reactions by their facial expressions, that they're questioning the professionalism of the medical professional, about why did they

> use their phone, again, it creates a negative perception of being unprofessional because you're on your phone, even if you say, hold on this is regarding work or another patient. The patient can say, well, what about me, I'm right here in front of you, I should be getting that care. At this very moment, your focus should be on me.

Participant P5 embraced a patient-centric view of nursing and stated:

> Just be conscious of what we're doing. I know emergencies and things pop up. We cannot control the everything. But we're out there to work and we should not make our phone our priority. Patient centered care is our priority, and we should always offer the best to our patient. So if you feel that you need to be on your phone more than care for your patient, maybe you need to rethink your profession. Maybe you need to find a job. You do have jobs that may be on your phone 24-7, maybe you could become a health care blogger, since that's not your field. But you know, we need to be conscious and be fair to our patient.

My data analysis concluded with the codes, subthemes, and themes that supported the answer to the central research question and the conceptual framework that explored the perception of nurses who use their smartphone at work. Table 5 represents the comprehensive listing of codes, subthemes, and themes revealed from the 18 semi-structured findings, as identified by the interview question.

Table 5

Questions – Semi-structured Interviews

Interview Questions	Codes	Subthemes	Themes
Describe how you use your smartphone in the workplace.	Provide a safe environment for patients	Safe environment	Personal attachment to smartphone
	Provide a safe environment for themselves		
	Medical calculations		
	Look up medications		
	Taking a picture of a patient to send to provider		
	Effective tool used as a substitute for a personal computer		
	Enter patient information into chart		
	Reading and sending emails and texts	Emails, texts, and phone calls	

(*table continues*)

Interview Questions	Codes	Subthemes	Themes
	Immediate access to family emergency situations	Emails, texts, and phone calls	Personal attachment to smartphone
	Quick and easy texts to providers or peers		
Based on your perception, why is personal smartphone use by nurses in the clinical setting, a concern in the workplace?	COVID-19 virus exposure on smartphone	COVID-19 concerns	
	Lack of attention to patients	Identified negative distractions	Distractions based on smartphone use
	Delayed critical patient care		
	Nurse was not approachable to peers and providers		
	Nurse was not approachable to patients		
	Exposure to personal identifiers	Possible HIPAA exposure	Patient privacy risks based on smartphone use
	Taking pictures and making videos in the clinical setting		
	Posting patient information		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	on social media		
How would you describe your perception of the use of the personal smartphone as a distraction from patient care?	COVID-19 virus exposure on smartphone	COVID-19 concerns	Personal attachment to smartphone
	Lack of attention to patients	Identified negative distractions	Distractions based on smartphone use
	Delayed critical patient care		
	Nurse was not approachable to peers and providers		
	Nurse was not approachable to patients		
	Lack of attention to patients		
	Delayed critical patient care		
	Surfing the internet	Social media use during working hours	
	Watching videos and movies		
	Scrolling Instagram and other social media sites		
	Exposure to personal identifiers	Possible HIPAA exposure	

(*table continues*)

Interview Questions	Codes	Subthemes	Themes
	Taking pictures and making videos in clinical area		
	Posting patient information on social media		
How does your personal smartphone use influence your interactions with patients and their families?	Provide a safe environment for patient healing	Safe environment	Personal attachment to smartphone
	Conduct medical calculations	Emails, texts and phone calls	Distractions based on smartphone use
	Look up medications	Patient education	
	Quick and easy texts to provider or peers	Identified positive distractions	
	Provide link to websites	Patient education	
	Use search engine to look up information		
	Provide education and insight to patients		
.			
	Recharging and disconnecting for mental rest	Identified positive distractions	

(*table continues)*

Interview Questions	Codes	Subthemes	Themes
	Taking picture of a patient to send to provider	Social media use during work hours	
	Effective tool used as a substitute personal computer		Distractions based on smartphone use
	Device app used to enter into patient chart		
	Reading and sending emails, and texts		
	Immediate access to family		
	Lack of attention to patients		Nursing not perceived as professional
	Delayed critical patient care		
	Nurse was not approachable to peers and providers		
	Nurse was not approachable to patients		
	Surfing the internet		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Watching videos and movies	Social media use during work hours	Distractions based on smartphone use
	Scrolling Instagram and other social media sites		
	Taking pictures and making videos		
	Helps to stay awake during down time		
	Share and receive information with peers		
	Exposure to personal identifiers	Possible HIPAA exposure	
	COVID-19 exposure on smartphone	COVID-19 concerns	
Tell me about the negative influences of personal smartphone use that you or your colleagues experienced.	Watching videos and movies	Identified negative distractions	Personal attachment to smartphone
	Blurred boundaries between patient and nurse	Social media use during work hours	Distractions based on smartphone
	Posting patient information on social media		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Not perceived as a professional		
	Accepting social media friend invitation		
	Sending patient information with non HIPAA compliant software	Possible HIPAA exposure	
	Risk negative perception of nursing profession	Negative perception of nursing	
Tell me about the positive influences of personal smartphone use that you or your colleagues experienced.	Provide a safe environment for patient healing	Safe environment	Patient privacy risks based on smartphone use
	Provide a safe environment for themselves	Emails, texts, and phone calls	
	Provide link to websites and apps to patients	Patient education	
	Use search engine to look up information	Identified positive distractions	
	Provide education and insight to patients		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Recharging and disconnecting for mental rest		Personal attachment to smartphone
	Communicate COVID-19 working condition concerns	COVID-19 concerns	
	Conduct medical calculations	Identified positive distractions	
	Look up medications	Patient education	
	Taking picture of a patient to send to provider		
	Effective tool used as a substitute personal computer		
	Quick and easy texts to provider or peers		
	Share and receive information with peers		
	Sharing personal information with patients used to initiate patient conversations		

(table continues)

Interview Questions	Codes	Subthemes	Themes
What are your concerns, with the use of personal smartphones, regarding patient privacy?	Exposure to personal identifiers Blurred boundaries Potential for HIPAA exposure Taking pictures and making videos in the clinical areas Posting patient information on social media	Possible HIPAA exposure	Patient privacy risks based on smartphone use
What activities have you witnessed that may have HIPAA implications based on personal smartphone use in the workplace?	Exposure to personal identifiers Blurred boundaries between patient and nurse Potential for HIPAA exposure Taking pictures and making videos in clinical areas Posting patient information	Possible HIPAA exposure	Patient privacy risks based on smartphone use

(table continues)

Interview Questions	Codes	Subthemes	Themes
	on social media Accepting social media friend invitation Sending patient information with non-HIPAA compliant software or apps		
Describe your experiences or witness to colleagues' social media posts or pictures that focus on patient's outcomes or health care or relationships.	Exposure to patient identifiers Taking pictures and making videos in clinical areas Posting patient information on social media	Possible HIPAA exposure	Negative distractions based on smartphone use in the clinical workplace
Can you explain if you ever witnessed one of your colleague's experience distractions that caused any negative patient interaction or negative medical	COVID-19 virus exposure on smartphone Lack of attention to patients Delayed critical patient care	Not focusing on the patient, ignoring other health care providers, ignoring patients,	Nursing not perceived as professional *(table continues)*

Interview Questions	Codes	Subthemes	Themes
consequence because of personal smartphone use while at work?	Nurse was not approachable to peers and providers Nurse was not approachable to patients	unapproachable	
What is your company policy regarding personal smartphone use while at work?	Based on company policy, smartphone is not allowed Based on company policy, smartphone must be set to silent	Negative perception of nursing	Personal attachment to smartphone Distractions based on smartphone use Nursing not perceived as professional
What other information would you like to add that relates to this research?	Share and receive information with peers Effective tool used as a substitute personal computer Smartphones are a part of daily life Establish protocol to effectively use smartphones at work	Safe environment Identified positive distractions Negative perception of nursing	Personal attachment to smartphone

All of the themes identified addressed the central research question; What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses? The perceptions of all of the nurses who participated in the semi-structure interviews, as indicated in codes, subthemes and themes, in Table 6, are represented by each participant, from P1 to P18.

Table 6

Participants' - Semi-structured Interviews

Participant	Codes	Subthemes	Themes
P1	Provide a safe environment for patients and themselves; recharging and disconnecting for mental rest; medical calculations; reading and sending emails, and texts; look up medications; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; COVID-19 virus exposure on smartphone; quick and easy texts to provider or peers; immediate access to family emergency situations; taking pictures of a patient to send to provider; used to initiate patient conversations; nurses lack of attention to patients; patient perception of lack of care; nurse was not approachable	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	to patients; nurse was not approachable to peers and providers; scrolling Instagram and other social media sites; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; blurred boundaries; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone not allowed		
P2	Provide a safe environment for	Safe environment; emails, texts, and	Personal attachment to

(table continues)

Participant	Codes	Subthemes	Themes
	patients and themselves; a substitute for a personal computer; provide education and insight to patients; COVID-19 virus exposure on smartphone; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; smartphones are a part of daily work; used to initiate patient conversations; exposure to personal identifiers; provide link to websites and apps to patients; recharging and disconnecting for mental rest; quick and easy texts to providers or peers; immediate access to family emergency situations; nurses lack of attention to patients; delayed patient care; surfing the internet; helps to	phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	stay awake during down time; blurred boundaries; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
P3	Provide a safe environment for patients and themselves; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; nurses lack of attention to patients; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; provide link to website and apps to patient; taking pictures and videos in the clinical setting; surfing the internet; scrolling	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	Instagram and other social media sites; watching movies and videos; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; helps to stay awake during down time; posting patient information on social media; nurse was not approachable to patients; nurse was not approachable to peers and providers; patient perception of lack of care; accepting patient social media friend invitation; not perceived as professional; negative patient perception of nurses; establish protocol to		

(table continues)

Participant	Codes	Subthemes	Themes
	effectively use smartphones at work; company policy – smartphone allowed with restrictions		
P4	Provide a safe environment for patients and themselves; taking pictures and videos in clinical areas; medical calculations; taking pictures of a patient to send to provider; look up medications; delayed critical patient care; nurses lack of attention to patients; nurse was not approachable to patients; nurse was not approachable to peers and providers; watching videos or movies; use search engine to look up information; scrolling Instagram and other social media sites; share and receive information with peers; effective tool used as a substitute personal	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	computer smartphones are a part of daily work; used to initiate patient conversations; exposure to personal identifiers; provide education and insight to patients; provide link to websites and apps to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
P5	Provide a safe environment for patients and themselves; smartphones are a daily part of work; a substitute for a personal computer;	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours;	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on

(table continues)

Participant	Codes	Subthemes	Themes
	nurses lack of attention to patients; surfing the internet; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; helps to stay awake during down time; nurses taking pictures and videos in the clinical setting; use search engine to look up information; smartphones are a part of daily work; taking pictures of a patient to send to provider; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; used to initiate patient conversations; recharging and disconnecting for mental rest; potential HIPAA exposure; blurred boundaries; posting patient information on	identified positive distractions; possible HIPAA exposure; negative perception of nursing	smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	social media; not perceived as professional; patient perception of lack of care; negative patient perception of nurses; establish protocol to effectively use smartphones at work; establish protocol for effective use of smartphone at work; company policy – allowed with restrictions		
P6	Provide a safe environment for patients and themselves; smartphones are a part of daily work; helps to stay awake during down time; taking pictures of a patient to send to provider; scrolling Instagram and other social media sites; reading and sending emails, and texts; effective tool used as a substitute for a personal computer; provide link to websites and apps to patients; provide	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	education and insight to patients; communicate COVID-19 working conditions concerns; patient perception of lack of care; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; accepting patient social media friend invitation; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		

(table continues)

Participant	Codes	Subthemes	Themes
P7	Provide a safe environment for patients and themselves; look up medication; a substitute for a personal computer; surfing the internet; used to initiate patient conversations; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; patient perception of lack of care; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; smartphones are a part of daily work; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patient information with non-HIPAA compliant software or app; blurred boundaries; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
P8	Provide a safe environment for patients and themselves; sharing personal information with patients; device app used to enter into patient chart; share and receive information with peers; smartphones are a part of daily work; taking pictures and videos in clinical areas; helps to stay awake during down time; accepting patient social media friend invitation; delayed critical patient	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	care; medical calculations; COVID-19 virus exposure on smartphone; communicate COVID-19 working condition concerns; look up medications; nurses lack of attention to patients; patient perception of lack of care; nurse was not approachable to patients; nurse was not approachable to peers and providers; use search engine to look up information; provide link to websites and apps to patients; share and receive information with peers; exposure to personal identifiers; posting patient information on social media; provide education and insight to patients; watching videos and movies; recharging and disconnecting for mental rest; potential HIPAA		

(table continues)

Participant	Codes	Subthemes	Themes
	exposure; negative patient perception of nurses; not perceived as professional		
P9	Provide a safe environment for patients and themselves; smartphones are a part of daily work; look up medication; reading and sending emails, and texts; watching videos or movies; effective tool used as a substitute for a personal computer; nurse was not approachable to peers and providers; nurse was not approachable to patients; nurses lack of attention to patients; surfing the internet; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; use search engine to look up information; share	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	and receive information with peers; COVID-19 virus exposure on smartphone; exposure to personal identifiers; used to initiate patient conversations; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work		
P10	Provide a safe environment for patients and themselves; taking a picture of a patient to send to provider; immediate access	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on

(table continues)

Participant	Codes	Subthemes	Themes
	to family emergency situations; smartphones are a part of daily work; sharing personal information with patients; device app used to enter into patient chart; share and receive information with peers; taking pictures and videos in clinical areas; surfing the internet; accepting patient social media friend invitation; medical calculations; communicate COVID-19 working condition concerns; look up medications; delayed critical patient care; nurses lack of attention to patients; nurse was not approachable to patients; provide link to websites and apps to patients; use search engine to look up information; helps to stay awake during down time; exposure to personal identifiers; provide	work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; posting patient information on social media; not perceived as professional; negative patient perception of nurses; company policy – smartphone allowed with restrictions		
P11	Provide a safe environment for patients and themselves; surfing the internet; watching videos and movies; scrolling Instagram and other social media sites; taking pictures and videos in clinical areas; delayed critical patient care; smartphones are a part of daily work; making and receiving phone calls; reading and sending emails, and texts; medical calculations; look up medications;	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	taking pictures of a patient to send to provider; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; share and receive information with peers; used to initiate patient conversations; sharing personal information with patients; exposure to personal identifiers; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
P12	Provide a safe environment for patients and themselves; COVID-19 virus	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns;	Personal attachment to smartphone; distractions based on smartphone

(table continues)

Participant	Codes	Subthemes	Themes
	exposure on smartphone; communicate COVID-19 working condition concerns; effective tool used as a substitute for a personal computer; provide link to website and apps to patient; nurses lack of attention to patients; surfing the internet; scrolling Instagram and other social media sites; smartphones are a part of daily work; used to initiate patient conversations; provide education and insight to patients; making and receiving phone calls; helps to stay awake during down time; quick and easy texts to providers; nurses; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; exposure to personal	identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; posting patient information on social media; not perceived as professional; establish protocol to effectively use smartphones at work; negative patient perception of nurses; company policy – smartphone not allowed		
P13	Provide a safe environment for patients and themselves; delayed critical patient care; look up medication; effective tool used as a substitute for a personal computer; surfing the internet; smartphones are a part of daily work; immediate access to family emergency situations; making	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	and receiving phone calls; quick and easy texts to providers; reading and sending emails, and texts; nurses lack of attention to patients; helps to stay awake during down time; nurse was not approachable to patients; nurse was not approachable to peers and providers; taking pictures and videos in the clinical setting; accepting patient social media friend invitation; watching movies and videos; use search engine to look up information; provide link to websites and apps to patients; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA		

(table continues)

Participant	Codes	Subthemes	Themes
	exposure; negative patient perception of nurses; sending patient information with non-HIPAA compliant software or app; not perceived as professional; establish protocol to effectively use smartphones at work; company policy – smartphone not allowed		
P14	Provide a safe environment for patients and themselves; communicate COVID-19 working conditions concerns; nurses lack of attention to patients; share and receive information with patients; surfing the internet; provide education and insight to patients; taking pictures of a patient to send to provider; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	videos in the clinical setting; smartphones are a part of daily work; scrolling Instagram and other social media sites; nurse was not approachable to patients; nurse was not approachable to peers and providers; use search engine to look up information; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; blurred boundaries; negative patient perception of nurses; posting patient information on social media; not perceived as professional; establish protocol to effectively use smartphones at work; establish protocol for effective use of smartphone at work; company policy – smartphone		

(table continues)

Participant	Codes	Subthemes	Themes
	allowed with restrictions		
P15	Provide a safe environment for patients and themselves; provide education and insight to patients; share and receive information with peers; taking picture of a patient to send to provider; effective tool used as a substitute personal computer; smartphones are a part of daily work; device app used to enter into patient chart; surfing the internet; watching videos and movies; helps to stay awake during down time; scrolling Instagram and other social media sites; taking pictures and videos in clinical areas; delayed critical patient care; making and receiving phone calls; reading and sending emails, and texts; medical calculations; look	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	up medications; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; sharing personal information with patients; accepting patient social media friend invitation; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; negative patient perception of nurses; not perceived as professional; establish protocol for effective use of smartphone at work; company policy – smartphone allowed with restrictions		
P16	Provide a safe environment for patients and themselves;	Safe environment; emails, texts, and phone calls; patient education; COVID-	Personal attachment to smartphone; distractions based

(table continues)

Participant	Codes	Subthemes	Themes
	recharging and disconnecting for mental rest; medical calculations; look up medications; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; device app used to enter into patient chart; COVID-19 virus exposure on smartphone; quick and easy texts to provider or peers; immediate access to family emergency situations; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; helps to stay awake during down time; surfing the internet; potential HIPAA exposure; sending	19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patient information with non-HIPAA compliant software or apps; patient perception of lack of care; negative patient perception of nursing profession; not perceived as professional; establish protocol for effective use of smartphone at work; company policy – smartphone not allowed		
P17	Provide a safe environment for patients and themselves; smartphones are a part of daily work; used to initiate patient conversations; look up medication;; watching videos or movies; a substitute for a personal computer; nurse was not approachable to peers and providers; nurse was not approachable to patients; nurses lack of attention to	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patients; surfing the internet; provide education and insight to patients; provide link to websites and apps to patients; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; blurred boundaries between patient and nurse; use search engine to look up information; share and receive information with peers; COVID-19 virus exposure on smartphone; communicate COVID-19 working conditions concerns; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company		

(table continues)

Participant	Codes	Subthemes	Themes
	policy – smartphone allowed with restrictions		
P18	Provide a safe environment for patients and themselves; recharging and disconnecting for mental rest; making and receiving phone calls; smartphones are a part of daily work; device app used to enter into patient chart; delayed critical patient care; look up medication; medical calculations; a substitute for a personal computer; surfing the internet; immediate access to family emergency situations; quick and easy texts to providers; helps to stay awake during down time; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	information; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; nurse was not approachable to peers and providers; potential HIPAA exposure; accepting patient social media friend invitation; negative patient perception of nurses; not perceived as professional; establish protocol to effectively use smartphones at work; company policy – smartphone not allowed		

Open-ended Questionnaire

The quotes from the open-ended participant questionnaire provided answers to the research question. The codes include multiple mentions in the questionnaire and not from a single response from only one participant. Table 7 summarized the open-ended questionnaire interview questions, codes, subthemes, and themes.

All of the themes identified addressed the central research question: What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses? The perceptions of all of the nurses who participated in the open-ended questionnaire, as indicated in codes, subthemes, and themes are represented by each participant from B1 to B32 in Table 8.

Themes: Open-ended Questionnaire

The research question was: What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

Theme 1: Personal attachment to smartphone. The first theme emerged from the interview questions from the 32 nurses who participated in the open-ended questionnaire. The 42 codes, which are identical to the semi-structured interviews was identified, as the 9 subthemes and 4 themes.

Participant B2, a nurse who works the overnight shift stated:

"My family is able to contact me immediately and helps stay awake on shifts when there is a lot of down time."

Participant B31 sympathized with the patients' need for additional information and explained:

> I interact with the patient because many of them come in and tell me that they looked on the internet and I try to explain to them that you can't trust all the sites. This is what those recent extensive studies show works the best. And so I use it as an interaction tool there for them that way. They come in, they have all their symptoms and their diagnosis, and their treatment figured out before they come in.

The ability to distract the patient in order to help provide a safe environment for the patient, or educate a family is important to the nurse, who is focused on ensuring the needs of their patients are met. Participant B12 stated:

> I use my cell phone at times to pull up YouTube videos to help with family education and when I have a patient (pediatrics) that needs a procedure I will put music on the phone or a video to help distract them if child life is unavailable.

Nurses want to keep up-to-date and the ability to use their smartphone as a substitute for a personal computer is necessary. Nurses share a computer at the nurses' desk and continually walk into and out of patient rooms. The smartphone has been used to provide the an efficient and quick tool. Participant B18 stated:

> "I can quickly refresh my knowledge of disease processes, hospital policies, skills procedures, or drug information. This allows me to provide better care as well as more effectively educate patients and family members."

Nurses stated that the use of their smartphone is a tool used to initiate patient conversations, Participant B20 described:

"It improves my relationships because I ask the patients or their families if it is okay to use my phone to verify information related to their treatments and care."

Theme 2: Distractions based on smartphone use. The second theme represents the nurses' responses, with both the negative and positive aspects of smartphone use while at work. Nurses felt that their smartphone was a practical and necessary resource. Participant B4 stated:

> I mainly use it for timers. Honestly, I'm just clocking in clocking out or also for just certain functions which are things I have to do for patients. That's mostly what I use it for. And then also, on my break. I definitely just kind of mindlessly like go through Instagram or look in mems or, send funny things to my friends. Just to get a little bit of like relief, a little mind break during the shift, so that's mainly how I use my phone.

The personal use of the smartphone may cause the nurse to disengage from their duties and ignore patient calls or their peers and Participant B14 stated:

"Lack of teamwork, not covering individual assignments, having to gesture or tap a coworker on the shoulder to get their attention if they're looking at something on the screen."

Nurses also witnessed smartphone use and Participant B30 represented the encounters with her peers, and stated:

> I see some personnel spending time on social media, texting friends (in the middle of the night!) phone calls, watching movies while on the clock. Loss of focus on patient care. I have also seen personnel (even physicians, in a few cases) use their smartphones to take pictures of unusual lesions, etc. [Note: the company I've been with for a while doesn't have any in-house smartphones to use for documenting skin lesions, falls, etc. I have strongly suggested this so there is no HIPAA problem.]

Lack of attention to patients is a serious, if not potentially deadly, consequence of smartphone use that can cause a distraction from the nurses' work responsibilities. Participant B22 stated:

> Yes, I witnessed a nurse walk past the room of her patient without checking on her to answer her cell phone, spent 15 minutes on phone, on the return back stopped in to check on her patient which was in code blue and later expired off of our floor.

Theme 3: Patient privacy risks based on smartphone use. Nurses felt that their smartphone was a necessary reference tool for medical calculations, reference tool to retrieve information, and taking pictures of wounds to send to the provider. Participant B4 is an advanced nurse practitioner and stated:

> I use my phone mostly for medication look up. I sometimes use it for language. Some of my coworkers are now using google translate which they don't really want us to use but every now and then to get on a phone get the interpret. I would say we use it mostly for data collection for like getting something or to look up

> something someone gave me a name of a medication or my medication let me look at how I spelled it was like, okay, let me look it up and see what it is and now. As a nurse practitioner we also need to use our smartphones to send control medications because we are now using them for we have that device that you have to do like the second logins so we're using it also to verify, that is, so they'll send the message straight to your phone via one of the applications.

Nurses are also cautious regarding patient privacy and social media participation with patients. Participant B7 offered insight and stated:

"Sometimes patients want to 'friend up' on social media. I think there is a boundary issue. I don't friend up my patients, and try to leave colleagues out of my social media."

Nurses indicated that a personal smartphone is not a secure HIPAA device and is subject to hacking, or family member or friend's exposure. Participant B15 stated:

"Taking pictures of patients. Who all else can access this information because it's on a personal cell phone and not a company-issued device that would be monitored for phishing, data breaches, etc.?"

Nurses are aware of possible HIPAA breaches and rules that must be enforced during their duties. Participant B1 stated:

> I think for the most part nurses are not stupid. We worked way too hard and way too long to lose our licenses over a TikTok video. Most of the videos and media you see not only take care to remove any privacy concerns, but some even go out

of the way to remove employer information as well. Healthcare professionals are well aware of HIPAA and patient privacy concerns.

Theme 4: Nursing not perceived as professional. Nurses felt that the behavior of their peers is a reflection of the profession. Participant B10 stated:

> The answer's yes. Yeah, I've seen that. But again, I'm, I'm going to say, I don't blame a patient for thinking that. Because, I said, as a group as an RN, I think we're professionals. But we also are not perceived that way, by patients, not only nurses and anyone on the team. I also think you need to also identify who the patients are, most of our patients are elderly. And there are generational issues and norms, then each generation has a millennial would not feel the same way as a senior.

Participant B19 reiterated the distracted behavior that is displayed by some nurse and the perception of patients and their families who use their smartphone at work. Participant B19 stated:

"It is unprofessional. There is the possibility of privacy violations and a possible waste of time."

Table 7

Questions - Open-ended Questionnaire

Interview Questions	Codes	Subthemes	Themes
Describe how you use your smartphone in the workplace.	Provide a safe environment for patients and themselves	Safe environment	Personal attachment to smartphone
	Helps to stay aware during down time	Emails, texts, and phone calls	Distractions based on smartphone use
	Medical calculations	Identified positive distractions	
	Look up medications		
	Quick and easy texts to providers		
	Making and receiving phone calls		
	Share and receive information with peers		
	Taking a picture of a patient to send to provider		
	Effective tool used as a substitute for a personal computer		
	Enter patient information into chart		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Reading and sending emails and texts		
	Immediate access to family emergency situations		
Based on your perception, why is personal smartphone use by nurses in the clinical setting, a concern in the workplace?	COVID-19 exposure, lack of attention to patients	COVID-19 concerns	Personal attachment to smartphone
	Delayed critical patient care	Identified negative distractions	Distractions based on smartphone use
	Ignoring others while using smartphone		Patient privacy risks based on smartphone use
	Nurse was not approachable to peers and providers		Nursing not perceived as professional
	Nurse was not approachable to patients		
	Exposure to personal identifiers	Possible HIPAA exposure	
	Taking pictures and making videos in the clinical setting		
	Posting patient information on social media		
	Not perceived as professional		

(table continues)

Interview Questions	Codes	Subthemes	Themes
How would you describe your perception of the use of the personal smartphone as a distraction from patient care?	COVID-19 virus exposure on smartphone Lack of attention to patients Delayed critical patient care Ignoring others while using smartphone Nurse was not approachable to peers and providers Nurse was not approachable to patients Lack of attention to patients Delayed critical patient care Ignoring others Surfing the internet Watching videos and movies Scrolling Instagram and other social media sites Exposure to personal identifiers Taking pictures and making	COVID-19 concerns Identified negative distractions Social media use during working hours Possible HIPAA exposure	

(table continues)

Interview Questions	Codes	Subthemes	Themes
	videos in clinical area Posting patient information on social media		
How does your personal smartphone use influence your interactions with patients and their families?	Provide a safe environment for patient healing Conduct medical calculations Look up medications Quick and easy texts to provider or peers Provide link to websites Use search engine to look up information Provide education and insight to patients	Safe environment Emails, texts and phone calls Patient education	Personal attachment to smartphone
How have you witnessed colleagues' personal smartphone use during patient care?	Provide a safe environment for patient healing Recharging and disconnecting for mental rest Conduct medical calculations Look up medications	Safe environment Emails, texts, and phone calls Patient education Identified negative distractions Social media use during work hours	Personal attachment to smartphone Distractions based on smartphone use Patient privacy risks based on smartphone use

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Taking picture of a patient to send to provider	Possible HIPAA exposure	
	Immediate access to family		
	Provide a link to websites		
	Use search engine to look up medications		
	Provide education and insight to patients		
	Lack of attention to patients		
	Delayed critical patient care		
	Nurse was not approachable to patients		
	Surfing the internet		
	Watching videos and movies		
	Scrolling Instagram and other social media sites		
	Taking pictures and making videos		
	Helps to stay awake during down time		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Share and receive information with peers		
	Exposure to personal identifiers		
Tell me about the negative influences of personal smartphone use that you or your colleagues experienced.	COVID-19 exposure on smartphone	COVID-19 concerns	Personal attachment to smartphone
	Lack of attention to patients	Identified negative distractions	Distractions based on smartphone use
	Delayed critical patient care	Social media use during work hours	Nursing not perceived as professional
	Nurse was not approachable to peers and providers	Possible HIPAA exposure	
.	Nurse was not approachable to patients	Negative perception of nursing	
	Surfing the internet		
	Watching videos and movies		
	Scrolling Instagram and other social media sites		
	Exposure to personal identifiers		
	Blurred boundaries between patient and nurse		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Taking pictures and making videos in the clinical setting		
	Posting patient information on social media		
	Not perceived as a professional		
	Accepting social media friend invitation		
	Sending patient information with non HIPAA compliant software		
Tell me about the positive influences of personal smartphone use that you or your colleagues experienced.	Provide a safe environment for patient healing	Safe environment	Personal attachment to smartphone
	Provide a safe environment for themselves	Emails, texts, and phone calls	Distractions based on smartphone
	Provide link to websites and apps to patients	Patient education	
	Use search engine to look up information	Identified positive distractions	
	Provide education and insight to patients		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Recharging and disconnecting for mental rest		
	Communicate COVID-19 working condition concerns		
	Conduct medical calculations		
	Look up medications		
	Taking picture of a patient to send to provider		
	Effective tool used as a substitute personal computer		
	Quick and easy texts to provider or peers		
	Share and receive information with peers		
	Sharing personal information with patients		
	Used to initiate patient conversations		

(table continues)

Interview Questions	Codes	Subthemes	Themes
What are your concerns, with the use of personal smartphones, regarding patient privacy?	Exposure to personal identifiers Blurred boundaries Potential for HIPAA exposure Taking pictures and making videos in the clinical areas Posting patient information on social media	Possible HIPAA exposure	Patient privacy risks based on smartphone use
What activities have you witnessed that may have HIPAA implications based on personal smartphone use in the workplace?	Exposure to personal identifiers Blurred boundaries between patient and nurse Potential for HIPAA exposure Taking pictures and making videos in clinical areas Posting patient information on social media Accepting social media friend invitation Sending patient information with non-HIPAA	Possible HIPAA exposure	Patient privacy risks based on smartphone use

(*table continues)*

Interview Questions	Codes	Subthemes	Themes
	compliant software or apps		
Describe your experiences or witness to colleagues' social media posts or pictures that focus on patient's outcomes or health care or relationships.	Exposure to patient identifiers Taking pictures and making videos in clinical areas Posting patient information on social media	Possible HIPAA exposure	Patient privacy risks based on smartphone use
Can you explain if you ever witnessed one of your colleague's experience distractions that caused any negative patient interaction or negative medical consequence because of personal smartphone use while at work?	COVID-19 virus exposure on smartphone Lack of attention to patients Delayed critical patient care Nurse was not approachable to peers and providers Nurse was not approachable to patients	COVID-19 concerns Identified negative distractions	Personal attachment to smartphone Distractions based on smartphone use
What is your company policy regarding personal smartphone use while at work?	Based on company policy, smartphone is not allowed Based on company policy, smartphone must be set to silent	Negative perception of nursing	Nursing not perceived as professional

(table continues)

Interview Questions	Codes	Subthemes	Themes
What other information would you like to add that relates to this research?	Share and receive information with peers Effective tool used as a substitute personal computer Smartphones are a part of daily life Establish protocol to effectively use smartphones at work	Safe environment Identified positive distractions Negative perception of nursing	Personal attachment to smartphone Distractions based on smartphone use Nursing not perceived as professional

Table 8

Participants' – Open-ended Questionnaire

Participant	Codes	Subthemes	Themes
B1	Provide a safe environment for patients and themselves; look up medication; a substitute for a personal computer; surfing the internet; used to initiate patient conversations; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; patient perception of lack of care; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; smartphones are a part of daily work; exposure to personal identifiers; recharging and	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; blurred boundaries; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone not allowed		
B2	Provide a safe environment for patients and themselves; helps nurse to stay awake during down time; communicate COVID-19 working conditions concerns; nurses lack of attention to patients; share and receive information with patients; surfing the internet; provide education and insight to patients; taking	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	pictures of a patient to send to provider; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; smartphones are a part of daily work; scrolling Instagram and other social media sites; nurse was not approachable to patients; nurse was not approachable to peers and providers; use search engine to look up information; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; blurred boundaries; negative patient perception of nurses; posting patient information on social media; not perceived as professional; establish protocol to effectively use		

(table continues)

Participant	Codes	Subthemes	Themes
	smartphones at work; establish protocol for effective use of smartphone at work; company policy – smartphone allowed with restrictions		
B3	Provide a safe environment for patients and themselves; surfing the internet; watching videos and movies; scrolling Instagram and other social media sites; taking pictures and videos in clinical areas; delayed critical patient care; smartphones are a part of daily work; making and receiving phone calls; reading and sending emails, and texts; medical calculations; look up medications; taking pictures of a patient to send to provider; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(*table continues)*

Participant	Codes	Subthemes	Themes
	look up information; share and receive information with peers; used to initiate patient conversations; sharing personal information with patients; exposure to personal identifiers; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
B4	Provide a safe environment for patients and themselves; recharging and disconnecting for mental rest; scrolling Instagram and other social media sites; medical calculations; reading and sending emails,	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	and texts; look up medications; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; quick and easy texts to provider or peers; immediate access to family emergency situations; taking pictures of a patient to send to provider; used to initiate patient conversations; nurses lack of attention to patients; patient perception of lack of care; nurse was not approachable to patients; nurse was not approachable to peers and providers; scrolling Instagram and other social media sites; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; potential HIPAA		

(table continues)

Participant	Codes	Subthemes	Themes
	exposure; sending patient information with non-HIPAA compliant software or app; blurred boundaries; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B5	Provide a safe environment for patients and themselves; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; nurses lack of attention to patients; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; provide link to website and	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(*table continues)*

Participant	Codes	Subthemes	Themes
	apps to patient; taking pictures and videos in the clinical setting; surfing the internet; scrolling Instagram and other social media sites; watching movies and videos; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; helps to stay awake during down time; posting patient information on social media; nurse was not approachable to patients; nurse was not approachable to peers and providers; patient perception of lack of care; accepting patient social media friend invitation; not		

(table continues)

Participant	Codes	Subthemes	Themes
	perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B6	Provide a safe environment for patients and themselves; taking a picture of a patient to send to provider; immediate access to family emergency situations; smartphones are a part of daily work; sharing personal information with patients; device app used to enter into patient chart; share and receive information with peers; taking pictures and videos in clinical areas; surfing the internet; accepting patient social media friend invitation; medical	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	calculations; communicate COVID-19 working condition concerns; look up medications; delayed critical patient care; nurses lack of attention to patients; nurse was not approachable to patients; provide link to websites and apps to patients; use search engine to look up information; helps to stay awake during down time; exposure to personal identifiers; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; posting patient information on social media; not perceived as professional; negative patient perception of nurses; company policy; smartphone allowed with restrictions		

(table continues)

Participant	Codes	Subthemes	Themes
B7	Provide a safe environment for patients and themselves; a substitute for a personal computer; provide education and insight to patients; COVID-19 virus exposure on smartphone; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; smartphones are a part of daily work; used to initiate patient conversations; exposure to personal identifiers; provide link to websites and apps to patients; recharging and disconnecting for mental rest; quick and easy texts to providers or peers; immediate access to family emergency situations; nurses lack of attention to patients; delayed patient care;	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	surfing the internet; helps to stay awake during down time; blurred boundaries; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
B8	Provide a safe environment for patients and themselves; COVID-19 virus exposure on smartphone; communicate COVID-19 working condition concerns; effective tool used as a substitute for a personal computer; provide link to website and apps to patient; nurses lack of attention to patients; surfing the internet; scrolling Instagram and other social media sites; smartphones are a part of daily work; used to initiate	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patient conversations; provide education and insight to patients; making and receiving phone calls; helps to stay awake during down time; quick and easy texts to providers; nurses; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; posting patient information on social media; not perceived as professional; establish protocol to effectively use smartphones at work; negative patient perception of nurses; company policy –		

(table continues)

Participant	Codes	Subthemes	Themes
	smartphone not allowed		
B9	Provide a safe environment for patients and themselves; sharing personal information with patients; device app used to enter into patient chart; share and receive information with peers; smartphones are a part of daily work; taking pictures and videos in clinical areas; helps to stay awake during down time; accepting patient social media friend invitation; delayed critical patient care; medical calculations; COVID-19 virus exposure on smartphone; communicate COVID-19 working condition concerns; look up medications; nurses lack of attention to patients; patient perception of lack of care; nurse was not approachable to patients; nurse	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	was not approachable to peers and providers; use search engine to look up information; provide link to websites and apps to patients; share and receive information with peers; exposure to personal identifiers; posting patient information on social media; provide education and insight to patients; watching videos and movies; recharging and disconnecting for mental rest; potential HIPAA exposure; negative patient perception of nurses; not perceived as professional; company policy – smartphone not allowed		
B10	Provide a safe environment for patients and themselves; taking pictures and videos in clinical areas; medical calculations; taking	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours;	Personal attachment to smartphone; distractions based on smartphone*)* use;

(table continues)

Participant	Codes	Subthemes	Themes
	pictures of a patient to send to provider; look up medications; delayed critical patient care; nurses lack of attention to patients; nurse was not approachable to patients; nurse was not approachable to peers and providers; watching videos or movies; use search engine to look up information; scrolling Instagram and other social media sites; share and receive information with peers; effective tool used as a substitute personal computer smartphones are a part of daily work; used to initiate patient conversations; exposure to personal identifiers; provide education and insight to patients; provide link to websites and apps to patients; recharging and disconnecting for	identified positive distractions; possible HIPAA exposure; negative perception of nursing	patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
B11	Provide a safe environment for patients and themselves; provide education and insight to patients; share and receive information with peers; taking picture of a patient to send to provider; effective tool used as a substitute personal computer; smartphones are a part of daily work; device app used to enter into patient chart; surfing the internet; watching videos and movies; helps to stay awake during down time; scrolling Instagram and other social	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	media sites; taking pictures and videos in clinical areas; delayed critical patient care; making and receiving phone calls; reading and sending emails, and texts; medical calculations; look up medications; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; sharing personal information with patients; accepting patient social media friend invitation; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; negative patient perception of nurses; not perceived as professional; establish protocol for effective use of smartphone at work; company		

(table continues)

Participant	Codes	Subthemes	Themes
	policy – smartphone not allowed		
B12	Provide a safe environment for patients and themselves; delayed critical patient care; look up medication; effective tool used as a substitute for a personal computer; surfing the internet; smartphones are a part of daily work; immediate access to family emergency situations; making and receiving phone calls; quick and easy texts to providers; reading and sending emails, and texts; nurses lack of attention to patients; helps to stay awake during down time; nurse was not approachable to patients; nurse was not approachable to peers and providers; taking pictures and videos in the clinical setting; accepting	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patient social media friend invitation; watching movies and videos; use search engine to look up information; provide link to websites and apps to patients; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; negative patient perception of nurses; sending patient information with non-HIPAA compliant software or app; not perceived as professional; establish protocol to effectively use smartphones at work; company policy – smartphone not allowed		
B13	Provide a safe environment for	Safe environment; emails, texts, and	Personal attachment to

(table continues)

Participant	Codes	Subthemes	Themes
	patients and themselves; smartphones are a daily part of work; a substitute for a personal computer; nurses lack of attention to patients; surfing the internet; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; helps to stay awake during down time; nurses taking pictures and videos in the clinical setting; use search engine to look up information; smartphones are a part of daily work; taking pictures of a patient to send to provider; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; used to initiate patient conversations; recharging and disconnecting for	phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	mental rest; potential HIPAA exposure; blurred boundaries; posting patient information on social media; not perceived as professional; patient perception of lack of care; negative patient perception of nurses; establish protocol to effectively use smartphones at work; establish protocol for effective use of smartphone at work; company policy – allowed with restrictions		
B14	Provide a safe environment for patients and themselves; smartphones are a part of daily work; look up medication; reading and sending emails, and texts; watching videos or movies; effective tool used as a substitute for a personal computer; nurse was not approachable to	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	peers and providers; nurse was not approachable to patients; nurses lack of attention to patients; surfing the internet; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; COVID-19 virus exposure on smartphone; exposure to personal identifiers; used to initiate patient conversations; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as		

(table continues)

Participant	Codes	Subthemes	Themes
	professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B15	Provide a safe environment for patients and themselves; smartphones are a part of daily work; used to initiate patient conversations; look up medication;; watching videos or movies; a substitute for a personal computer; nurse was not approachable to peers and providers; nurse was not approachable to patients; nurses lack of attention to patients; surfing the internet; provide education and insight to patients; provide link to websites and apps to	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patients; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; blurred boundaries between patient and nurse; use search engine to look up information; share and receive information with peers; COVID-19 virus exposure on smartphone; communicate COVID-19 working conditions concerns; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company policy – smartphone allowed with restrictions		
B16	Provide a safe	Safe environment;	Personal

(table continues)

Participant	Codes	Subthemes	Themes
	environment for patients and themselves; recharging and disconnecting for mental rest; medical calculations; reading and sending emails, and texts; look up medications; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; COVID-19 virus exposure on smartphone; quick and easy texts to provider or peers; immediate access to family emergency situations; nurses lack of attention to patients; patient perception of lack of care; nurse was not approachable to patients; nurse was not approachable to peers and providers; scrolling Instagram and other social media sites; taking pictures and making videos in clinical areas;	emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	exposure to personal identifiers; provide education and insight to patients; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; blurred boundaries; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B17	Provide a safe environment for patients and themselves; effective tool used as a substitute for a personal computer; provide education and insight to patients; COVID-19 virus exposure on smartphone; taking pictures and videos in the clinical setting; taking pictures of a	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	patient to send to provider; use search engine to look up information; share and receive information with peers; smartphones are a part of daily work; used to initiate patient conversations; exposure to personal identifiers; provide link to websites and apps to patients; recharging and disconnecting for mental rest; quick and easy texts to providers or peers; making and receiving phone calls; watching movies and videos; immediate access to family emergency situations; nurses lack of attention to patients; delayed patient care; surfing the internet; helps to stay awake during down time; blurred boundaries; potential HIPAA exposure; not perceived as		

(table continues)

Participant	Codes	Subthemes	Themes
	professional; negative patient perception of nurses; establish protocol for effective use of smartphone at work company policy – smartphone allowed with restrictions		
B18	Provide a safe environment for patients and themselves; smartphones are a part of daily work; nurses lack of attention to patients; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed	Safe environment; identified negative distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
B19	Provide a safe environment for patients and themselves; recharging and disconnecting for mental rest; communicate COVID-19 working conditions concerns; nurses lack of attention to patients; share and receive information with patients; surfing the internet; provide education and insight to patients; taking pictures of a patient to send to provider; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; smartphones are a part of daily work; scrolling Instagram and other social media sites; nurse was not approachable to patients; nurse was not approachable to peers and providers; use search engine to	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	look up information; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; blurred boundaries; negative patient perception of nurses; posting patient information on social media; not perceived as professional; establish protocol to effectively use smartphones at work; establish protocol for effective use of smartphone at work; company policy – smartphone not allowed		
B20	Provide a safe environment for patients and themselves; smartphones are a part of daily work; used to initiate patient conversations; look up medication; watching videos or	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as

(table continues)

Participant	Codes	Subthemes	Themes
	movies; a substitute for a personal computer; nurse was not approachable to peers and providers; nurse was not approachable to patients; nurses lack of attention to patients; surfing the internet; provide education and insight to patients; provide link to websites and apps to patients; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; blurred boundaries between patient and nurse; use search engine to look up information; share and receive information with peers; COVID-19 virus exposure on smartphone; communicate COVID-19 working conditions concerns; exposure to personal	distractions; possible HIPAA exposure; negative perception of nursing	professional

(table continues)

Participant	Codes	Subthemes	Themes
	identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; not perceived as professional; negative patient perception of nurses; company policy – smartphone allowed with restrictions		
B21	Provide a safe environment for patients and themselves; look up medication; a substitute for a personal computer; surfing the internet; used to initiate patient conversations; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; patient perception of lack of care; nurses lack of attention to patients; taking pictures and videos	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	in the clinical setting; use search engine to look up information; share and receive information with peers; smartphones are a part of daily work; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; blurred boundaries; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone not allowed		
B22	Provide a safe environment for patients and themselves; effective tool used as a substitute for a personal computer;	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks

(table continues)

Participant	Codes	Subthemes	Themes
	smartphones are a part of daily work; nurses lack of attention to patients; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; provide link to website and apps to patient; taking pictures and videos in the clinical setting; surfing the internet; scrolling Instagram and other social media sites; watching movies and videos; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; helps to	work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	stay awake during down time; posting patient information on social media; nurse was not approachable to patients; nurse was not approachable to peers and providers; patient perception of lack of care; accepting patient social media friend invitation; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B23	Provide a safe environment for patients and themselves; delayed critical patient care; look up medication; effective tool used as a substitute for a personal computer; surfing the internet; smartphones are a	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	part of daily work; immediate access to family emergency situations; making and receiving phone calls; quick and easy texts to providers; reading and sending emails, and texts; nurses lack of attention to patients; helps to stay awake during down time; nurse was not approachable to patients; nurse was not approachable to peers and providers; taking pictures and videos in the clinical setting; accepting patient social media friend invitation; watching movies and videos; use search engine to look up information; provide link to websites and apps to patients; share and receive information with peers; exposure to personal identifiers; provide education and	perception of nursing	

(table continues)

Participant	Codes	Subthemes	Themes
	insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; negative patient perception of nurses; sending patient information with non-HIPAA compliant software or app; not perceived as professional; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B24	Provide a safe environment for patients and themselves; recharging and disconnecting for mental rest; making and receiving phone calls; smartphones are a part of daily work; COVID-19 virus exposure on smartphone; device app used to enter into patient chart; delayed critical patient care; look up medication;	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	medical calculations; a substitute for a personal computer; surfing the internet; immediate access to family emergency situations; quick and easy texts to providers; helps to stay awake during down time; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; nurse was not approachable to peers and providers; potential HIPAA exposure; accepting patient social media friend invitation; negative patient perception of nurses; not perceived as professional; establish protocol to effectively use smartphones at		

(table continues)

Participant	Codes	Subthemes	Themes
	work; company policy – smartphone allowed with restrictions		
B25	Provide a safe environment for patients and themselves; recharging and disconnecting for mental rest; medical calculations; look up medications; effective tool used as a substitute for a personal computer; smartphones are a part of daily work; device app used to enter into patient chart; COVID-19 virus exposure on smartphone; quick and easy texts to provider or peers; immediate access to family emergency situations; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; share and receive information with peers; exposure to	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	personal identifiers; provide education and insight to patients; helps to stay awake during down time; surfing the internet; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or apps; patient perception of lack of care; negative patient perception of nursing profession; not perceived as professional; establish protocol for effective use of smartphone at work; company policy – smartphone allowed with restrictions		
B26	Provide a safe environment for patients and themselves; surfing the internet; watching videos and movies; scrolling Instagram and other social media sites; taking pictures and videos	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as

(table continues)

Participant	Codes	Subthemes	Themes
	in clinical areas; delayed critical patient care; smartphones are a part of daily work; making and receiving phone calls; reading and sending emails, and texts; medical calculations; look up medications; taking pictures of a patient to send to provider; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; share and receive information with peers; used to initiate patient conversations; sharing personal information with patients; exposure to personal identifiers; provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; not perceived as professional; negative patient	exposure; negative perception of nursing	professional

(table continues)

Participant	Codes	Subthemes	Themes
	perception of nurses; company policy – smartphone allowed with restrictions		
B27	Provide a safe environment for patients and themselves; taking pictures and videos in clinical areas; medical calculations; taking pictures of a patient to send to provider; look up medications; delayed critical patient care; nurses lack of attention to patients; nurse was not approachable to patients; nurse was not approachable to peers and providers; watching videos or movies; use search engine to look up information; scrolling Instagram and other social media sites; share and receive information with peers; effective tool used as a substitute personal computer	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	smartphones are a part of daily work; used to initiate patient conversations; exposure to personal identifiers; provide education and insight to patients; provide link to websites and apps to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone allowed with restrictions		
B28	Provide a safe environment for patients and themselves; provide education and insight to patients; share and receive	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours;	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on

(table continues)

Participant	Codes	Subthemes	Themes
	information with peers; taking picture of a patient to send to provider; effective tool used as a substitute personal computer; smartphones are a part of daily work; device app used to enter into patient chart; surfing the internet; watching videos and movies; helps to stay awake during down time; scrolling Instagram and other social media sites; taking pictures and videos in clinical areas; delayed critical patient care; making and receiving phone calls; reading and sending emails, and texts; medical calculations; look up medications; nurses lack of attention to patients; nurse was not approachable to patients; use search engine to look up information; sharing personal information with patients; accepting patient social	identified positive distractions; possible HIPAA exposure; negative perception of nursing	smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	media friend invitation; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; negative patient perception of nurses; not perceived as professional; establish protocol for effective use of smartphone at work;		
B29	Provide a safe environment for patients and themselves; smartphones are a daily part of work; a substitute for a personal computer; nurses lack of attention to patients; surfing the internet; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; helps to stay awake during down time; nurses taking pictures and videos in the	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	clinical setting; use search engine to look up information; smartphones are a part of daily work; taking pictures of a patient to send to provider; share and receive information with peers; exposure to personal identifiers; provide education and insight to patients; used to initiate patient conversations; recharging and disconnecting for mental rest; potential HIPAA exposure; blurred boundaries; posting patient information on social media; not perceived as professional; patient perception of lack of care; negative patient perception of nurses; establish protocol to effectively use smartphones at work; establish protocol for effective use of smartphone at		

(table continues)

Participant	Codes	Subthemes	Themes
	work; company policy – allowed with restrictions		
B30	Provide a safe environment for patients and themselves; smartphones are a part of daily work; helps to stay awake during down time; taking pictures of a patient to send to provider; scrolling Instagram and other social media sites; reading and sending emails, and texts; effective tool used as a substitute for a personal computer; provide link to websites and apps to patients; provide education and insight to patients; communicate COVID-19 working conditions concerns; patient perception of lack of care; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	information with peers; accepting patient social media friend invitation; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone allowed with restrictions		
B31	Provide a safe environment for patients and themselves; smartphones are a part of daily work; look up medication; reading and sending emails, and texts; provide link to websites and apps to patients; use search engine to look up	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	information; provide education and insight to patients; watching videos or movies; effective tool used as a substitute for a personal computer; nurse was not approachable to peers and providers; nurse was not approachable to patients; nurses lack of attention to patients; surfing the internet; making and receiving phone calls; quick and easy texts to providers; nurses taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; COVID-19 virus exposure on smartphone; exposure to personal identifiers; used to initiate patient conversations; provide education and insight to patients;	perception of nursing	

(table continues)

Participant	Codes	Subthemes	Themes
	recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone allowed with restrictions		
B32	Provide a safe environment for patients and themselves; COVID-19 virus exposure on smartphone; communicate COVID-19 working condition concerns; effective tool used as a substitute for a personal computer; provide link to website and apps to patient; nurses lack of attention to patients; surfing	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	the internet; scrolling Instagram and other social media sites; smartphones are a part of daily work; used to initiate patient conversations; provide education and insight to patients; making and receiving phone calls; helps to stay awake during down time; quick and easy texts to providers; nurses; taking pictures and videos in the clinical setting; use search engine to look up information; share and receive information with peers; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; posting patient information on social media; not perceived as professional;		

(table continues)

Participant	Codes	Subthemes	Themes
	establish protocol to effectively use smartphones at work; negative patient perception of nurses; company policy – smartphone not allowed		

Focus Group Interview

Identical focus group interview questions were presented, and the findings resulted in 41 codes, 9 subthemes, and 4 themes emerged from the focus group interview. Forty-one codes emerged from the focus group interview. Only 1 code, which was, taking a picture to send to provider, was excluded. The focus group participants did not discuss taking a picture to send to provider, however, all of the remaining codes were discussed during the 4 participant focus group interview. The 41 codes, 9 subthemes and 4 themes are consistent with the findings of the semi-structured interviews and the open-ended questionnaire. The summary, which is organized by the interview questions for the focus group codes, subthemes, and themes is presented in Table 9, and Table 10 is represented by each participant from C1 to C4.

Themes: Focus Group Interview

Theme 1: Personal attachment to smartphone. The first theme emerged from the interview questions from 4 nurses based on the codes such as a safe environment for themselves and their patients, and to keep in touch with family. Participants indicated that their smartphone enables them give safe care. Participant C1 stated:

"Properly used, a smartphone can be a powerful tool in providing safe, effective patient care."

Nurses felt that the smartphone is a vital tool to help them take a break during their work shift and to help refresh before they go back to their responsibilities. Participant C3 stated:

"I find they give you mini breaks from the 12 hour shift when we do not get the 2, 15 minute breaks we are entitled to in addition to our 30-minute lunch break."

Nurses rely on their smartphone to gather information needed for patients. Participant C2 stated:

> We need to have nurses to be able to have the information that they need for patient education, just so that they can see aware and can be ready to make a decision either for themselves or family members, or whoever they may be out in the street somewhere to help somebody in an emergency situation. I feel like nurses need to be able to get that information and I shouldn't be cited for using my cell phone to get this information for the patient.

Nurses, unlike other parents, wanted to stay connected to their families and remain accessible to texts or calls during their work shift. Participant C3 stated:

> There is a place for them, but it's something that we have to address. They are especially crucial to parents who are working and don't have a sense of security when they are away from their children. If they don't have that cell phone, you can actually see it hit right now. They're so anxious about what's happening to their kids.

Communicating with peers to discuss work related issues was a key component nurses' smartphone use. However, other non-related smartphone use was also employed during work time. Participant C4 stated:

> I really use it just for texting, maybe communicating with my nurses and asking who is coming into work, if they are running late, or if they can do swaps for

shifts. There is some you know, of course, surfing the internet, checking email, text messages, and personal things like that as well.

Theme 2: Distractions based on smartphone use. Both negative and positive distractions were discussed during the focus group interview. The nurses were concerned about the lack of care based on personal smartphone use. Participant C2 stated:

> And, you know, you may have call bells going off. And because there are many apps of what is on their smartphone, they are not responding. Ignoring the call bells minimize the patient needs. And if, I guess, they are not fully invested in patient care at that moment. If they are not using it for work related and more of a personal usage, it can take away from what they're delivering to their patient.

Personal concerns during the work shift can create a distraction for a nurse. A peer observed another nurse who had personal issues that carried over into the clinical setting. Participant C1 stated:

"One time a coworker was going through a divorce and she was on her phone all day. The office manager allowed this for a few days, but patients began to complain that she wasn't paying attention."

Participant C4 was concerned about personal smartphone use that detracted nurses from patient care. Participant C4 explained:

> Colleagues being pre-occupied on their phones and not responding to their patients or completing patient-related tasks. One CNA lost her job for spending the majority of her time on her cell phone instead of completing tasks. Additionally, worked with someone who would "disappear" quite frequently and I

would find him in the storage room using his phone. This could be dangerous in a hospital setting where a collaborative team effort is essential to providing safe patient-centered care. When someone is distracted, not responsive, or absent from the floor because they are using their mobile device, this can lead to patient harm.

Theme 3: Patient privacy risks based on the smartphone. Nurses felt that, for the most part, they were careful regarding their social media posts and patient privacy. Participant C2 stated:

I've definitely seen a lot of uplifting posts that tell inspiring patient stories, keeping in mind privacy and HIPAA. In the same way nurses are humans and we go home and vent and share our days, we generally don't do so in a stupid way such as "Mr. James Smith in room 231 whose birthday is 1/1/91 and has a port a cath did xyz today...", we typically take great care to maintain privacy while allowing ourselves to share and feel. We're not robots. Sharing our experiences while being smart is healthy and needed.

The use of the smartphone camera in the clinical setting can be a concern for the nurse, if it exposes patient identifiers. Participant C3 stated:

“Nurses should not take pictures of patients with nurses, or pictures taken by family or family friends.”

The education and training dedicated to HIPAA rules and regulations was an important factor for nurses. Participant C1 reiterated HIPAA education and stated:

I think most places on earth have given enough education to their nurses so that they know that they're not to take pictures of patients without their consent. And if

> that is what their consent you must still make sure that it is not on your personal cell phone.

Theme 4: Nursing not perceived as professional. Nurses felt that their profession was vital to the health care community, and a few nurses who do not behave professionally, can tarnish the patient experience. Participant C4 provided insight to the concern of lack of professionalism by her peers, and stated:

> It's not professional, there's a lot of people who don't have the best smartphone habits and it just has a bad, even bad morale for nurses, I'm sure from the management perspective. it's annoying if it's not a family emergency. So from the nursing standpoint, it's just not really a good work habit. And even nurses don't generally don't like it, because it's just like this isn't a very, we want to work in a really professional place to where we feel like we're high level clinicians. I've seen patients complaining that their discharge and care where postponed due to staff playing on their phone all day!

Participant C3 provided an explanation of the human factor that must be present during nurse interactions with patients. Participant C3 cautions the use of the smartphone when it detracts from patient care and stated:

> I don't think that people are bad. I think it's just such an addictive thing. I think it's so difficult for people not to look at their phone. And it's, in our wonderful capitalistic society, I think that, people have been sold into this idea that they constantly have to get news, and they constantly have to get texts, and they constantly have to be connected to electronics and then you miss the human

component, you miss looking at somebody in their eyes, because it dehumanizes the patient, that's my opinion, that's how I feel there's a connection. Really, your whole mind and body should be focused on the human, and, the other humans you're taking care of. And when you have a diversion, that's telling you it's okay. I think it makes people really apathetic.

The quotes from the focus group interview provided answered to the research question. The codes include multiple mentions during the focus group discussion and not from a single response from only one participant. The summary, which is organized by the interview questions for the focus group codes, subthemes, and themes is presented in Table 9, and Table 10 is represented by each participant from C1 to C4.

Table 9

Questions – Focus Group Interview

Interview Questions	Codes	Subthemes	Themes
Describe how you use your smartphone in the workplace.	Provide a safe environment for patients and themselves Helps to stay aware during down time Medical calculations Look up medications Quick and easy texts to providers Share and receive information with peers Effective tool used as a substitute for a personal computer Enter patient information into chart Reading and sending emails and texts Immediate access to family emergency situations	Safe environment Emails, texts, and phone calls Identified positive distractions	Personal attachment to smartphone Distractions based on smartphone use

(table continues)

Interview Questions	Codes	Subthemes	Themes
Based on your perception, why is personal smartphone use by nurses in the clinical setting, a concern in the workplace?	COVID-19 exposure Lack of attention to patients Delayed critical patient care Ignoring others while using smartphone Nurse was not approachable to patients Exposure to personal identifiers Taking pictures and making videos in the clinical setting Posting patient information on social media Not perceived as professional	COVID-19 concerns Identified negative distractions Possible HIPAA exposure	Personal attachment to smartphone Distractions based on smartphone use Patient privacy risks based on smartphone use Nursing not perceived as professional
How would you describe your perception of the use of the personal smartphone as a distraction from patient care?	COVID-19 virus exposure on smartphone Lack of attention to patients Delayed critical patient care Nurse was not approachable to	COVID-19 concerns Identified negative distractions Social media use during working hours Possible HIPAA exposure	Personal attachment to smartphone Distractions based on smartphone use

(table continues)

Interview Questions	Codes	Subthemes	Themes
	peers and providers		Patient privacy risks based on smartphone use
	Nurse was not approachable to patients		
	Lack of attention to patients		
	Delayed critical patient care		
	Surfing the internet		
	Watching videos and movies		
	Scrolling Instagram and other social media sites		
	Exposure to personal identifiers		
	Taking pictures and making videos in clinical area		
	Posting patient information on social media		

(table continues)

Interview Questions	Codes	Subthemes	Themes
How does your personal smartphone use influence your interactions with patients and their families?	Provide a safe environment for patient healing Conduct medical calculations Look up medications Quick and easy texts to provider or peers Provide link to websites Use search engine to look up information Provide education and insight to patients	Safe environment Emails, texts and phone calls Patient education	Personal attachment to smartphone
How have you witnessed colleagues' personal smartphone use during patient care?	Provide a safe environment for patient healing Recharging and disconnecting for mental rest Conduct medical calculations Look up medications Taking picture of a patient to send to provider Immediate access to family	Safe environment Emails, texts, and phone calls Patient education Identified negative distractions Social media use during work hours Possible HIPAA exposure	Personal attachment to smartphone Distractions based on smartphone use Patient privacy risks based on smartphone use

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Provide a link to websites		
	Use search engine to look up medications		
	Provide education and insight to patients		
	Lack of attention to patients		
	Delayed critical patient care		
	Nurse was not approachable to patients		
	Surfing the internet		
	Watching videos and movies		
	Scrolling Instagram and other social media sites		
	Taking pictures and making videos		
	Helps to stay awake during down time		
	Share and receive information with peers		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Exposure to personal identifiers		
Tell me about the negative influences of personal smartphone use that you or your colleagues experienced.	COVID-19 exposure on smartphone Lack of attention to patients Delayed critical patient care Nurse was not approachable to patients Surfing the internet Watching videos and movies Scrolling Instagram and other social media sites Exposure to personal identifiers Blurred boundaries between patient and nurse Taking pictures and making videos in the clinical setting Posting patient information on social media	COVID-19 concerns Identified negative distractions Social media use during work hours Possible HIPAA exposure Negative perception of nursing	Personal attachment to smartphone Distractions based on smartphone use Nursing not perceived as professional

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Not perceived as a professional		
	Accepting social media friend invitation		
	Sending patient information with non HIPAA compliant software		
Tell me about the positive influences of personal smartphone use that you or your colleagues experienced.	Provide a safe environment for patient healing	Safe environment	Personal attachment to smartphone
	Provide a safe environment for themselves	Emails, texts, and phone calls	Distractions based on smartphone
	Provide link to websites and apps to patients	Patient education	
	Use search engine to look up information	Identified positive distractions	
	Provide education and insight to patients		
	Recharging and disconnecting for mental rest		
	Communicate COVID-19 working condition concerns		
	Conduct medical calculations		

(table continues)

Interview Questions	Codes	Subthemes	Themes
	Look up medications		
	Effective tool used as a substitute personal computer		
	Quick and easy texts to provider or peers		
	Share and receive information with peers		
	Sharing personal information with patients		
	Used to initiate patient conversations		
What are your concerns, with the use of personal smartphones, regarding patient privacy?	Exposure to personal identifiers	Possible HIPAA exposure	Patient privacy risks based on smartphone use
	Blurred boundaries	Blurred boundaries	
	Potential for HIPAA exposure		
	Taking pictures and making videos in the clinical areas		
	Posting patient information on social media		

(table continues)

Interview Questions	Codes	Subthemes	Themes
What activities have you witnessed that may have HIPAA implications based on personal smartphone use in the workplace?	Exposure to personal identifiers Blurred boundaries between patient and nurse Potential for HIPAA exposure Taking pictures and making videos in clinical areas Posting patient information on social media Accepting social media friend invitation Sending patient information with non-HIPAA compliant software or apps	Possible HIPAA exposure Blurred boundaries	Patient privacy risks based on smartphone use
Describe your experiences or witness to colleagues' social media posts or pictures that focus on patient's outcomes or health care or relationships.	Exposure to patient identifiers Taking pictures and making videos in clinical areas Posting patient information on social media	Possible HIPAA exposure Blurred boundaries	Patient privacy risks based on smartphone use

(table continues)

Interview Questions	Codes	Subthemes	Themes
Can you explain if you ever witnessed one of your colleague's experience distractions that caused any negative patient interaction or negative medical consequence because of personal smartphone use while at work?	COVID-19 virus exposure on smartphone Lack of attention to patients Delayed critical patient care Nurse was not approachable to peers and providers Nurse was not approachable to patients	COVID-19 concerns Identified negative distractions	Personal attachment to smartphone Distractions based on smartphone use
What is your company policy regarding personal smartphone use while at work?	Based on company policy, smartphone is not allowed Based on company policy, smartphone must be set to silent	Negative perception of nursing	Nursing not perceived as professional
What other information would you like to add that relates to this research?	Effective tool used as a substitute personal computer Smartphones are a part of daily life Establish protocol to effectively use smartphone at work	Safe environment Identified positive distractions Negative perception of nursing	Personal attachment to smartphone Distractions based on smartphone use Nursing not perceived as professional

Table 10

Participants' – Focus Group Interview

Participant	Codes	Subthemes	Themes
C1	Provide a safe environment for patients and themselves; taking pictures and videos in the clinical setting; smartphones are a part of daily work; nurses lack of attention to patients; provide education and insight to patients; making and receiving phone calls; reading and sending emails, and texts; quick and easy texts to providers; provide link to website and apps to patient; surfing the internet; scrolling Instagram and other social media sites; watching movies and videos; use search engine to look up information; share and receive information with peers; exposure	Safe environment; emails, texts, and phone calls; patient education; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; helps to stay awake during down time; posting patient information on social media; nurse was not approachable to patients; nurse was not approachable to peers and providers; patient perception of lack of care; accepting patient social media friend invitation; not perceived as professional; negative patient perception of nurses; establish protocol to effectively use smartphones at work; company policy – smartphone		

(table continues)

Participant	Codes	Subthemes	Themes
	allowed with restrictions		
C2	Provide a safe environment for patients and themselves; smartphones are a part of daily work; helps to stay awake during down time; taking pictures of a patient to send to provider; scrolling Instagram and other social media sites; reading and sending emails, and texts; effective tool used as a substitute for a personal computer; provide link to websites and apps to patients; provide education and insight to patients; COVID-19 virus exposure on smartphone; concerns; patient perception of lack of care; nurses lack of attention to patients; taking pictures and videos in the clinical setting; use search engine to look up	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	information; share and receive information with peers; accepting patient social media friend invitation; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; sending patient information with non-HIPAA compliant software or app; not perceived as professional; negative patient perception of nurses; company policy – smartphone not allowed		
C3	Provide a safe environment for patients and themselves; taking a picture of a patient to send to provider; immediate access to family emergency situations; smartphones are a part of daily	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	work; sharing personal information with patients; device app used to enter into patient chart; share and receive information with peers; taking pictures and videos in clinical areas; surfing the internet; accepting patient social media friend invitation; medical calculations; communicate COVID-19 working condition concerns; look up medications; delayed critical patient care; nurses lack of attention to patients; nurse was not approachable to patients; provide link to websites and apps to patients; use search engine to look up information; helps to stay awake during down time; exposure to personal identifiers;	exposure; negative perception of nursing	

(table continues)

Participant	Codes	Subthemes	Themes
	provide education and insight to patients; recharging and disconnecting for mental rest; potential HIPAA exposure; posting patient information on social media; not perceived as professional; negative patient perception of nurses; company policy – smartphone allowed with restrictions		
C4	Provide a safe environment for patients and themselves; communicate COVID-19 working conditions concerns; nurses lack of attention to patients; share and receive information with patients; surfing the internet; provide education and insight to patients; making and receiving phone calls; quick and easy texts to	Safe environment; emails, texts, and phone calls; patient education; COVID-19 concerns; identified negative distractions; social media use during work hours; identified positive distractions; possible HIPAA exposure; negative perception of nursing	Personal attachment to smartphone; distractions based on smartphone use; patient privacy risks based on smartphone use; nursing not perceived as professional

(table continues)

Participant	Codes	Subthemes	Themes
	providers; nurses taking pictures and videos in the clinical setting; smartphones are a part of daily work; scrolling Instagram and other social media sites; nurse was not approachable to patients; nurse was not approachable to peers and providers; use search engine to look up information; exposure to personal identifiers; recharging and disconnecting for mental rest; potential HIPAA exposure; blurred boundaries; negative patient perception of nurses; posting patient information on social media; not perceived as professional; establish protocol to effectively use smartphones at work; establish protocol for effective use of		

(table continues)

Participant	Codes	Subthemes	Themes
	smartphone at work; company policy – smartphone allowed with restrictions		

Summary

In this chapter, I presented the results of the thematic analysis of the three data sources, semi-structured interviews, the open-ended questionnaire, and the focus group interview. The results of this single case study with embedded units (Yin, 2017) answered the central research question: What are the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses?

Based on the findings of this single case study with embedded units, a total of 42 codes, and 9 subthemes emerged, encompassing the 4 themes grounded in the distraction-conflict theory (Baron, 1986; Min, 2017) conceptual framework. The participants in this study identified commonalities that were presented in all 3 data sources. The lived experiences of the nurses were similar regardless if they were employed in a hospital, clinic, home health care, or any other health care focused location.

In Chapter 5, I presented the interpretation of the findings, described the limitations of the study, and provided recommendations for future research. I concluded the chapter with the implications of my findings on social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to describe the perceptions of nurses regarding distracted patient care in their clinical workplace due to personal smartphone use by nurses. A single case study design with embedded units (Yin, 2017) was used to gain a deeper understanding of the perceptions of the nurse regarding distracted patient care while participating in personal social media or other smartphone-related activities on their mobile devices. Three sources of data were used throughout this study. The semi-structured interviews began on March 18, 2021 and were completed on March 26, 2021. The focus group interview took place on March 26, 2021 and the open-ended questionnaires were completed from March 18, 2021 and ended on April 2, 2021. All three data sources were collected and compared throughout the entire data collection process. A total of 42 codes emerged, which were comprised of 9 subthemes, and 4 themes that were grounded in the distraction-conflict theory conceptual framework.

Interpretation of Findings

The findings of this single case study with embedded units confirmed and described the perceptions of nurses who use their smartphone at work. In this section, I presented and reviewed the findings in the coding that emerged from the data analysis and confirmed that personal smartphone use can be perceived as a positive or negative distraction if used during work. I provided evidence from the semi-structured interviews, focus group interview and the open-ended questionnaire to support how the study's findings either confirmed, disconfirmed the existing knowledge.

Findings and Coding

Provide a safe environment for healing for their patients. Nurses' various responsibilities include, but are not limited to, recording medical history and symptoms, monitoring patient health, providing medication and treatment, patient safety, support to patients' families, and assist physicians. In addition, the study revealed that the disruption may garner positive perceptions of nurses. For example, 11% of distractions or interruptions may have potentially assisted the nurse or steered to outcomes that improved patient comfort, safety, condition, or accuracy (Hopkinson & Wiegand, 2017). The nurse's ability to communicate with a colleague to exchange information, either face-to-face or through their smartphone or other devices, was viewed as a positive distraction (Bautista & Lin, 2016; Berg et al., 2016).

In this study, Participant B17 validated the expectation of a nurse and stated:

> I have been working in a dementia care unit and sometimes used my iPhone to do videoconferences with power-of-attorneys, and designated family members with residents. We have an appointment scheduled for the unit iPad and iPhone, but sometimes everything is in use, or a resident wasn't communicative earlier in the day. Some family members like to be able to say goodnight to their loved ones at bedtime after the on-unit electronics have been locked up (I don't have access to them on night shift.).

Provide a safe environment for themselves. Participant B19's quote was representative of the comments regarding the need to take a mental break. Participant B19's commented:

> Being able to recharge and stay sane during a long 12-hour shift. Sometimes you neither get an actual break, nor do you need to go into the break room for 15-20 minutes. Sometimes you just need to watch a funny 3-minute video with a coworker, then get back to work. Productivity is not defined by long, continuous 6 hour-long stretches of work broken up by a lunch break. It's healthy to have down time, and it's necessary. Having a phone or access to "leisure" activities is absolutely necessary to keeping employees and by extension patients, happy.

Taking pictures and videos. Nurses were aware of HIPAA concerns, however, nurses also found the benefit of taking pictures and videos in the clinical setting. Participant B17 stated:

> I see some personnel spending time on social media, texting friends (in the middle of the night!) phone calls, watching movies while on the clock. Loss of focus on patient care. I have also seen personnel (even physicians, in a few cases) use their smartphones to take pictures of unusual lesions, etc. [Note: the company I've been with for a while doesn't have any in-house smartphones to use for documenting skin lesions, falls, etc. I have strongly suggested this so there is no HIPAA problem.].

Scrolling Instagram and other social media sites, and social media use. Not one of the 54 participants indicated that they participated in internet surfing while in the clinical setting; however, 20 participants stated that they witnessed other nurses use their personal smartphone to participate in random internet searches and other internet activities. Participant P3's quote is representative of the nurse's witness to the activities:

"Some colleagues are sitting at the nurses' station on social media and laughing."

Participant B16 stated that she witnessed nurses participate in social media or other internet activities during work time and said:

> It may be significant, but it varies from person to person. I find the older nurses are able to work a shift without the phone in their hand very much, or they observe the rules that personal electronics may only be used on breaks. The younger generations seem not to be able to go for long without looking at their device (and this is on night shift, where we do have a lot to do.).

Reference tool to retrieve information, positive distraction. All of the participants stated that a positive use of their personal smartphone was to retrieve information regarding patient care. The nurses indicated multiple reasons for their personal mobile device use during their work hours, which included the ability to retrieve information, and provide a safe environment for their patients 'and themselves. Most nurses were responsible for multiple patients simultaneously and use their smartphones to perform their tasks in an efficient and faster manner. The nurse can call or text a physician to receive information instead of locating them within the hospital. Access to their smartphone also enabled the staff nurse to quickly retrieve relevant information regarding medications. Participant P9 stated:

> For one, it helps me research medication that I'm not familiar with, I could easily go to Medscape, and Google what this medication is and the interaction and adverse reaction also helps me. It helped me so I could use it as a translator, get the app up and they could help me to communicate with someone that speaks a

different language from me. And also I teach a lot of patients if they do not know how to use their phone so if I can show them like an app or even a video on something or like if you're not understanding when you go home. You could watch this video it could probably help you to understand how to do a procedure or understand your disease process even more.

They were not focusing on the patient. Participant P8 explained the consequences of not focusing on the patient and stated:

How does it make a patient feel when they're on the call late, and they need something, and they cannot help themselves? I work in a burn ICU and we have six sick patients, and they literally cannot do anything for themselves. So when they are relying on someone who is on their phone, or on a phone call that's personal, or they have their earbuds in and they're not listening out, that can be huge and can be extremely disheartening. These people are already in very, very vulnerable situations. How can they trust that you're going to be meeting their needs? I can only imagine how that that would feel to be on the call and a patient's needs are not being met and the reason why is because your nurse is busy on her phone.

Communicate COVID-19 related concerns to peers, positive distraction.

Participant P14 stated her concerns about work conditions during COVID-19 and stated:

Even though nurses are striking during a pandemic, we're doing so for good reason. You know, a lot of people just thought that we were just doing it because

> we wanted to get more money or because we just didn't want to go to work. And it's like, no, we actually have really big issues that we want to address. So we use social media as a platform for us. I think we were able to gain a lot of support with that.

Negative distraction. According to Wu et al. (2018), job distractions that result from smartphone-related activities negatively impacts performance. The nurses who are compelled to place some attention on the smartphone activities and some attention on the completion of the primary task at work may compromise their work efforts. When the nurse to focuses their attention on both activities, the distraction causes an increase in time to complete the primary task. In addition, the distraction of the smartphone activity and the primary task results in lesser efforts or thinking for the primary task. Also, switching from smartphone activities to work creates significant memory disruption, which weakens work performance. The resulting distracted job performance may negatively affect patient care or contribute to errors that affect patient outcomes (Cho & Lee, 2016; Wu et al., 2018).

Participant P10's response explained the negative impact of distractions that led to a negative patient event. Participant P10 stated:

> Some of our patient care assistants or nursing assistants, they are assigned the role of a sitter when patients are high risk for falls or hurting themselves or others. So I've seen some of the sitters, get a little lax in their job where they just pull out their phone, or they're watching television with the patient or whatever, and patients have fallen, while having a sitter in the room. Patients have gotten, sharp

> devices while having a sitter in the room or gotten all the way to the bag and pulled out, one of their previous prescriptions like, a narcotic or something. So if we're not paying attention to everything the patient's doing and actually doing their job and being distracted on our phones, then it can lead to adverse patient outcomes.

Unfortunately, negative safety events, due to smartphone distractions can lead to a potential preventable patient death. Participant B22 stated:

> I have carried this heavy burden of that women's death due to the nurse's negligence for 7 years until your questionnaire. Thank you for creating this opportunity to express this negative consequence of personal cell phone use by nurses to open up necessary dialogue and ultimately eliminate any present and future hazardous and traumatic mistakes. This is certainly an extremely delicate, dangerous and possibly deadly practice.

Possible HIPAA exposure. Nurses may not be fully aware of the regulatory agencies, federal, state and local laws and nursing licensure board rules and regulations regarding social networking, and the consequences of violating the Health Insurance Portability and Accountability Act (HIPAA) and Patient Health Information (PHI). (Mariano et al., 2018; Snoots & Wands, 2016).

Participant C1's statement is representative of the comments and confirmed the findings. Participant C1 stated:

> I would say the biggest thing would be HIPAA. I have heard stories of people that are taking pictures on the floor or at their hospitals or did something where they

didn't think it was going to be a big deal. And then it turns out there were patient identifiers and then, it's a big deal.

Exposure to patient identifiers. Participant P5 discussed the caution that must be taken to avoid patient identifiers and stated:

I definitely think it's really easy to snap a picture or video. And it may or may not be well-intentioned, but, I can think of an example from years ago, and another organization that I worked at, where there was a nurse down in the ER, took a picture of a trauma patient, and that picture got circulated. So I think that's definitely a concern. I know there are some protections for the physicians with taking pictures because we are a teaching organization. Within the consent for treatment, the patients consent to photographs being taken for educational purposes. So I think people just have to be cognizant of where they're at, I guess on the spectrum of when it's appropriate, and when it's not.

Participant B16 added insight to the concept of patient identifiers and stated:

I have worked on units where family members were taking photos of staffers, rooms, etc. I have observed a physician occasionally use their personal smartphone to document something rare/unusual, like a skin lesion, on a patient. I suppose this doesn't necessarily violate HIPAA if the patient's body and/or face are unidentifiable, but the photo taken will still have time and location information in the metadata for the file. (A lot of people don't know this.).

Participant B14 stated, “I don't think anyone would support having their privacy violated in such a way where they are at their most vulnerable state.”

COVID-19 virus exposure on smartphone. Open-ended questionnaire Participant B24 stated:

"Breach of patient privacy, and infection control risk (use of phone in isolation rooms)."

Participant P12's quote describes the COVID-19 virus exposure on equipment and brought into sterile rooms.

> I try not to use my phone much at work just because of the environment. The fact that you know that COVID can be left on your phone if you use it while treating patients. And this is something that you will be bringing back home. So the less that I have it on me, the better for me.

Establish protocol for the effective use of the smartphone at work. Nurses felt that health care employers should establish rules that provide guidelines for nurses to use their smartphone. Participant P4 stated:

> I just feel like a lot of institutions or hospitals or hospital systems should really implement a more serious social media at work, or phone use policies. That's just my opinion. Even though I am a millennial, I feel like there should be stricter policies on who, when you can use your phone because when I first started as a nurse, it was unacceptable to have your cell phone on the floor. And my husband understood that and it was what it was. But I feel like we should go back a little more towards that where it's a little more unacceptable to have it so you can focus on your patient care, you can document quickly, you can get out on time, decrease your overtime, so I feel like it'll have lots more implications.

Limitations of the Study

Limitations refer to the uncontrollable features of a study that are likely to affect the outcome (Flick, 2014). The comparison and evidence established the construct of trustworthiness was a continual interaction, absorption, and reflection that the qualitative researcher conducted as it related to data collection, analysis, and the interpretation processes (Nowell et al., 2017; Stewart & Gapp, 2017).

I realized two of the three study limitations described in Chapter 1. A total of 54 nurses participated in the semi-structured interviews, the open-ended questionnaire, and the focus group interview. The results may not be representative of other health care providers and may be specific to nursing. Second, the personal smartphone use of the nurses may vary, and may not be representative of the different nursing populations. The collection of similar information from each study participant does not pose a problem with credibility, as each nurse is considered unique with viable information and perspectives (Patton, 2014). The study results confirmed the pre-codes and permitted the comparison of the pre-code with the actual code. Third, the participants may not respond to some of the questions, which is their right to consider the question intrusive or unpleasant.

The lack of response could impact the study findings. All semi-structured and focus group participants answered all of the interview questions. The open-ended questionnaire required a response for all of the questions. Two nurses wrote “none”, or “n/a” for a minor portion, question 13, which queried if the nurse had any other information they would like to add that relates to this research. The omission created a

lack of response. The researcher ensured that triangulation of various data sources was utilized to increase the trustworthiness of the data collected (Fusch & Ness, 2015; Yin, 2017). The use of methodological triangulation of data increased validity and reliability and supported the overall trustworthiness of the study.

Recommendations

This research provided insights into the perceptions of nurses who use their personal smartphone in the clinical setting. Findings reveal that nurses generally use their smartphones to get through difficult personal times, the need to support or check-in to see if everything is being taken care of at home, take a mental break during their shift, and retrieve information for patients' families. During the COVID-19 pandemic, nurses expanded the level of communication to ensure their family's safety, which was also verbalized by the night shift nurses who missed their family while caring for patients. The adoption of Baron's distraction-conflict theory (1986) and Min's (2017) updated extension of distraction-conflict theory provided insight in the evaluation of personal smartphone use as a technology that may distract nurses from their primary tasks in the clinical setting.

The findings and recommendations that resulted from this research may be helpful to leaders, managers and human resources departments in health care organizations. The perceptions and insight of the nurses provide a professional application that may contribute to the formation of strategies, education, and policies that affect positive social change that heighten the awareness of distracted heath care (DeWane et al., 2019; O'Connor et al., 2016).

On the basis of this study's strengths and limitations, future research should be encouraged to validate these findings, using the appropriate qualitative inquiry or replicating this study implementing qualitative research models that address the nurses' perceptions regarding their smartphone use in the workplace.

Methodological Recommendation: Qualitative Replication

I collected the data for my research participants from the career-focused website LinkedIn. I searched and reviewed registered nurse profiles within the United States with active LinkedIn accounts that met the inclusion criteria. The identified criteria of the participants included active employment as a registered or licensed nurse in a workplace that allows their duties to engage in direct patient care. Advanced Practice Nurse Practitioners were included in the scope of the registered nurse. The digital age has allowed social media platforms such as LinkedIn to become standard practice as a recruitment tool for human research (Gelinas et al., 2017; Salmons, 2018). I utilized thematic analysis to examine the data collected from semi-structured interviews, open-ended questionnaires, and a focus group to identify and record principal themes revealed from participants' perceptions (Braun & Clarke, 2016; Castleberry & Nolen, 2018).

The researcher's choice to incorporate individual and focus group interviews was aligned with single case study research with embedded units and will contribute to the original purpose of the study's conceptual framework. The questionnaire with open-ended questions was sent to nurses who did not participate in the focus group or semi-structured interviews. I utilized thematic analysis to examine the data collected from semi-structured interviews, an open-ended questionnaire, and a focus group to identify

and record the principal themes revealed from participants' perceptions (Braun & Clarke, 2016; Castleberry & Nolen, 2018).

Recommendations for Future Research

The use of the qualitative research method in future studies is encouraged. It would be suitable to develop additional in-depth questions to increase the understanding of the perceptions of nurses who use their smartphone at work. I collected the data for my research from participants who work and live in the United States. All regions of the country, including the Northeast, South, West, Southwest, and Midwest were represented. Based on geological differences, this study can be replicated and localized within a specific hospital or clinic. In addition, the localized focus can also include outpatient clinics, rehab, home health care, or ambulatory facilities for data analysis comparison. The comparison of various themes would be reported separately from multiple sources, and comparing the findings with the theoretical proposition would emerge from the analysis generated from the data (Castleberry & Nolen, 2018; Yin, 2017). Additional research may result from this study's outcome to describe the localized perceptions of nurses' personal smartphone use at work. The comparison of findings from similar studies would assist in the validation of the study. During the comparison of the findings, the divergence or discrepant cases are the patterns or explanation data may emerge from the data analysis (Lincoln & Guba, 1985; Walsh et al., 2015).

Implications

The results of this study potentially affect positive social change on individual, corporate, and policy levels. The findings of this empirical study may advance the

knowledge on this significant topic in patient care management. The findings of this study may also contribute to positive social change by guiding nursing management that define policies and practices that may minimize distracted patient care based on nurses' smartphone use.

This study is important because it addresses a problem that is specific to nurses' perceptions of their use of the smartphone at work. The study extends the knowledge-based empirical evidence specific to the nurses' perception and the explanation related to the distraction-conflict theory's (Baron, 1986) premise that the use of the smartphone conflicts with their primary patient-facing task (Min, 2017).

Positive Social Change

Individual level. This study confirms that most of the staff nurses held a positive viewpoint regarding personal mobile phones at work because the device was considered useful technology. The nurses indicated multiple reasons for the benefit of their personal mobile devices during their work hours. Most of the nurses were responsible for multiple patients simultaneously, and they use their smartphone to perform their tasks in an efficient and quicker manner. The nurse can call or text a physician to receive information instead of locating them within the hospital. Access to their smartphone also enables the nurse to retrieve relevant information regarding medications quickly. In a more somber task, the staff nurse can contact the relatives of a patient who was unable to receive visitors based on COVID-19 restrictions.

Other nurses viewed using their smartphones to maintain their professional image when the staff nurse did not know the answer to a patient or relative's question. For

example, assuming a patient asked about their condition and the significance of the lab values or medication interaction, the nurse can excuse themselves from the bedside and conduct a search on the internet. The use of the smartphone has become a daily routine and is normal and is used openly throughout the hospital (Bautista & Lin, 2017; Pucciarelli et al., 2019).

Corporate level. Nurses witnessed coworkers and management's response to their peers' use of their personal smartphone use. According to McBride and LeVasseur (2017), smartphone use was perceived as unprofessional behavior and portrayed the nurse as not providing the best care for their patients. The smartphone use was the priority, not the patient. Patients' perceptions indicate that the nurse is drawn to the social media activity on their smartphone instead of providing care, sharing information, and actively participating in the treatment plan. The consequence of the nurses' smartphone use while at the bedside may also negatively impact patient openness and engagement. Moreover, excessive use of the smartphone, at the bedside may inhibit the opportunity for face-to-face interaction and impair social skills development that enables positive rapport and sensitivity (Mariano et al., 2018; McBride & LeVasseur, 2017).

According to Jandaghi et al. (2015), distracted nursing emerged as a theme from the leaders. The nurse leaders described the lack of focus on the patient during bedside care and the inability to self-regulate their smartphone use, which was perceived as rude and distracting. In addition, patient privacy and safety concerns were also raised. The use of the smartphone at work may contribute to breaches of confidential health information in the form of pictures taken and posted on Facebook or other social media applications

(Wang et al., 2019). The smartphone was also considered a vehicle for infection transmission and the source of equipment interference.

A comment stated by a nursing leader highlighted the dangerous correlation between texting and driving. Using the smartphone and calculating and dispensing medication places the patient in a possible hazardous yet avoidable situation (Brandt et al., 2016). Leaders must consider the need to remain open to the needs of the nurse and their use of the smartphone while balancing and providing guidance to avoid the negative implications, for example, a distraction from the patient care.

Policy level. Creating fair and equitable personal smartphone use policies that incorporate the practical application of the enforcement is an important factor that will contribute to positive social change regarding nurses' personal smartphone use in the workplace. Participant B17's statement summarized the sentiment of policy creation. Participant B17 stated:

"I think that any health care facility that is truly interested in providing optimal patient care should establish a protocol for effectively utilizing smartphones in their workplace environment."

Health care organizations should have policies that integrate guidelines for social media use and include consequences for misconduct and, also provide an outlet to report misconduct. The National Labor Relations Board (NLRB) suggests that the social media policy language is clear and provides employees with examples of acceptable and excluded behaviors, and how the policy will be applied. Similarly, important is the disciplinary enforcement of the policy, which should be applied uniformly and

consistently. The language should include definitive consequences, such as progressive discipline (i.e., the definition of the levels of discipline and the rationale that may lead to further punishment) or the types of violations that are deemed severe enough for a first offense termination (Green, 2017; O'Connor et al., 2016).

The results and recommendations that emerged from this research will prove helpful to leaders and managers, and human resources departments in health care organizations. Including the perceptions and insight of the nurses will provide a professional application that may contribute to the formation of strategies, education, and policies that affect positive social change that heighten the awareness of distracted heath care.

Conclusions

Personal smartphone use, and participation in social networking, is prevalent and has dramatically changed the line between professional, personal, and private boundaries (Scruth et al., 2015; Wang et al., 2019). Smartphones are a popular and, in many instances, a necessary tool. Smartphones have created a cultural shift that generated instantaneous information access (Beauregard et al., 2017; Vearrier et al., 2018). As a result, non-work linked to social media use during expected productive work hours has an affect in the workplace (Stoney, 2015).

There is minimum qualitative research focused on exploring nurses' perceptions of their personal smartphone use smartphone at work. According to McBride (2015), there is a gap in the literature on data-based studies documenting the problematic use of mobile devices in the health care workplace among nurses. Based on the nature of

quantitative research, the results of previous studies captured general themes; however, the results of this single case study captured the context and details that supported the themes.

Nursing practices, specifically the perception of distracted patient care while participating in non-work activities on their mobile device during work, allowed the researcher to explore the issues from different perspectives. The findings of this empirical study included the rich contextual data that supports the reasons why nurses use their personal smartphones at work. This research study will enlist the engagement of future researchers to develop new questions and approaches that will guide and interpret the perceptions of nurses' personal smartphone use in the workplace.

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Appendix A: Interview Protocol

Participant No: _____
Nursing Degree: _____
Do you work in a health care facility with direct patient care responsibilities, i.e., hospital, medical center, nursing home, private practice, school, traveler, etc.?

_____
Do you use a smartphone or other personal mobile device (i.e., tablet, smart watch, e-reader, etc.)?

_____

To Interviewee:

"The interview is recorded on tape for the best possible data. Is this okay? I can turn off the tape recorder along the way if you wish."

"Have you read the information I sent in the email? Have you signed the Informed Consent Form to participate in this study?"

"The title of this research project is *Perceptions of Nurse's Personal Smartphone Use at Work*. The convenience of the smartphone and other mobile personal devices have become an integral part of the nurses' daily lives. The use of the smartphone and other handheld devices used for personal intentions while at work may have both positive and negative effects on the nurse-patient interaction. The purpose of this study is to explore the perceptions of nurse's personal smartphone use in their clinical setting. Meeting the purpose of this study may inform and provide insight into nursing perception practices, specifically, while using a personal mobile device during work."

"Do you wish to ask any questions regarding the study or this procedure before we proceed?"

Interview Questions:

1. Describe how you use your personal smartphone in the workplace.
2. Based on your perception, why is personal smartphone use by nurses in the clinical setting, a concern in the workplace?
3. How would you describe your perception of the use of the personal smartphone as a distraction from patient care?
4. How does your personal smartphone use influence your interactions with patients and their families?
5. How have you witnessed colleagues' personal smartphone use during patient care?
6. Tell me about the negative influences of personal smartphone use that you or your colleagues experienced.
7. Tell me about the positive influences of personal smartphone use that you or your colleagues experienced.
8. What are your concerns, with the use of personal smartphones, regarding patient privacy?
9. What activities have you witnessed that may have HIPAA implications based on personal smartphone use in the workplace?
10. Describe your experiences or witness to colleagues' social media posts or pictures that focus on patient's outcomes or health care or relationships.
11. Can you explain if you ever witnessed one of your colleague's experience distractions that caused any negative patient interaction or negative medical consequence because of personal smartphone use while at work?

12. What is your company policy regarding personal smartphone use while at work?

13. What other information would you like to add that relates to this research?

Prompts to facilitate conversations around the facts:

"Can you give me an example of that?"

"Please tell me more about that."

Thank you for your participation.

Appendix B: Questionnaire Interview Protocol

Perceptions of Nurse's Personal Smartphone Use at Work

The following demographic questions will provide basic (not identifying) information. Thank you. *Required

1. Gender *

Mark only one oval.

- Male
- Female
- Prefer not to Other:

_____

2. Ethnicity/Race *

_____

3. Age *

Mark only one oval.

- Under 21
- 21 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 – 64
- 65+

4. Geographic Location, i.e., Northeast, Southwest, Midwest, Southeast, Northwest, etc., United States, England, Ireland, India, etc. *

_____

5. Years of Experience as a Registered Nurse, APRN, Licensed Practical Nurse, etc. *

_____

6. Workplace, i.e., hospital or medical center, private practice, senior citizen facility, school, etc. *

_____

Questionnaire begins. Thank you for your participation and responses. All answers are confidential and anonymous.
Perceptions of Nurse's Personal Smartphone Use at Work

7. Describe how you use your personal smartphone in the workplace? *

8. Based on your perception, why is personal smartphone by nurses in the clinical setting a concern in the workplace? *

9. How would you describe your perception of the use of the personal smartphone as a distraction from patient care? *

10. How does your personal smartphone use influence your interactions with patients and their families? *

11. How have you witnessed colleagues' personal smartphone use during patient care? *

12. Tell me about the negative influences of the personal smartphone use that you or your colleagues experienced. *

13. Tell me about the positive influences of personal smartphone use that you or your colleagues experienced. *

14. What are your concerns, with the use of personal smartphones, regarding patient privacy? *

15. What activities have you witnessed that may have HIPAA implications based on personal smartphone use in the workplace? *

16. Describe your experiences or witness to colleagues' social media posts or pictures that focus on patient's outcomes or health care or relationships. *

17. Can you explain if you ever witnessed one of your colleague's experience distractions that caused any negative patient interaction or negative medical consequence because of personal smartphone use while at work? *

18. What is your company policy regarding personal smartphone use while at work? *

19. What other information would you like to add that relates to this research?

Thank you for participating!

Appendix C: Recruitment Letter

Solicitation Letter to Obtain Study Participants

Hello, my name is Esperanza Criscuolo, and I am currently a PhD student with Walden University. I am conducting a study about the perceptions of nurse's personal smartphone use at work. I would like to solicit your participation in this study. The purpose of this study is to explore the perceptions of nurse's personal smartphone use in the clinical setting. Given your background and expertise, I am certain your experiences would be a great contribution to this study, which is why I am soliciting your participation. Possible findings presented in this study may help managers and policy-makers understand the perceptions of nurse's use of the smartphone at work. From a social change perspective, this study may result in a deeper understanding of nurse's perceptions and insights that may contribute to the formulation of strategies, education and policies that affect positive social change.

If you are interested in being a participant in this study, please review the attached informed consent form and indicate your consent to participate in this research study by replying to this email with the words, "I consent." If you would like to request additional information, you may reply to xxxxxxx.

Thank you for your time and in advance for your anticipated consideration.

Respectfully,
Esperanza Criscuolo