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Dimensions of Nurse-Physician Communication

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This is to certify that the doctoral study by

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2017

Abstract

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MS, American University of Beirut, 2011

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Hospital leaders set quality and safety as high priorities in their strategic goals. Improving the quality and safety of patient care requires improving internal processes that have direct implications for patient care. Hospital leaders need to improve health care providers' communication as part of improving quality and safety. The problem addressed in this study was the lack of strategies health care administrators use to guide nurse-physician communication patterns in a university medical center in the Middle East. The purpose of this qualitative case study was to explore communication strategies that health care administrators use to guide nurse-physician communication. Relational coordination informed the conceptual framework of the study. The research question was designed to identify strategies health care administrators use to guide nurse-physician communication patterns. Data were collected and thematically analyzed through semistructured interviews with 5 administrators, 3 nurses, and 3 physicians, and the hospital policy manual. Analysis revealed 4 major themes: nurses' empowerment, nurses and physicians' accountability, multidisciplinary care delivery, and mutual respect. Strategies were identified through the exploration and analysis of the 4 themes. The key findings included that administrators considered holding nurses and physicians accountable for their work to be a key strategy that guides communication, and that effective communication is directly connected to mutual respect among different teams and individuals. The implications for social change include improved patient care and safety, and increased job satisfaction through health care leaders applying the identified strategies to enhance nurse-physician communication.

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Dedication

This work is dedicated to my parents, Malek and Noura.

بتتلج الدني وبتشمّس الدني... ويا لبنان بحبك لتخلص الدني...

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I thank the administration of the data collection site for believing in the importance of research and evidence-based practice. I also thank the study participants for their time. I truly appreciate their input that served as a basis of the study outcomes.

I thank my close friends for being there for me each in their unique way. I thank them for going out of their way in helping me reach my goal. I also thank them for listening to my endless nagging; and continuously encouraging me throughout my journey.

Finally, I thank my family. All that I am or ever hope to be, I owe to my family. I cannot thank you enough for giving me the strength and determination to complete this work.

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Section 1: Foundation of the Study

Quality of patient care is a major element of hospitals' missions and strategic goals (Parand, Dopson, Renz, & Vincent, 2014). Safe, efficient patient care and satisfaction are indicators of a hospital's financial sustainability and growth (Chadha, Singh, & Kalra, 2012). Health care leaders adopt various communication strategies to address patient satisfaction and care and improve financial performance (Weller, Boyd, & Cumin, 2014). Effective communication between multidisciplinary health care team members ensures quality and safety in patient care delivery (Weller et al., 2014). Health care leaders also recognize that communication, a critical element in maintaining quality and safety, has a direct effect on attaining a hospital's mission (Parand et al., 2014). The focus of this study was to explore strategies that guided nurse-physician communication (NPC) patterns within a health care setting.

Background of the Problem

A mission statement serves as a guide to achieving the long-term purpose of a hospital (Leggat & Holmes, 2015). Hospital administrators use strategic planning to direct a hospital's mission attainment by focusing on quality and safety of patient care (Appendix A; Kopaneva & Sias, 2015). These administrators also create the structures and processes that guide employees in fulfilling a mission (Moghimi & Subramaniam, 2013; Rupprecht, Waldrop, & Grawitch, 2013).

While a hospital administrator's concern is strategic, NPC is tactical to support mission achievement. Effective NPC is essential for improving team efficiency and preventing medical errors (Rowlands & Callen, 2013). Although past researchers have emphasized the consequences of NPC breakdowns on quality and safety of patient care, administrators may lack strategies to guide NPC patterns (Marshall, Harrison, &

Flanagan, 2009; Matzke, Houston, Fischer, & Bradshaw, 2014). NPC is a critical factor for hospital administrators to achieve a hospital's mission (Singer & Vogus, 2013).

Problem Statement

Communication errors are the leading causes of adverse medical events compromising quality and safety of patient care (O'Leary et al., 2013; Rabøl, McPhail, Ostergaard, Andersen, & Mogensen, 2012; The Joint Commission, 2012). Medical adverse events have significant financial implications for hospitals (Rolston et al., 2014). In European Union Member States, medical errors occur in 8% to 12% of hospitalizations (World Health Organization, n.d.). In one Greek public hospital, adverse events increased the patients' length of stays by an average of 12 days and their health care costs by an average of €12,000 each (Riga, Vozikis, Pollalis, & Souliotis, 2015). The general business problem is incomplete communication between nurses and physicians results in medical errors leading to excessive hospital medical costs and degraded hospital mission attainment. The specific business problem is some health care administrators lack communication strategies to guide NPC patterns.

Purpose Statement

The purpose of this qualitative, explorative case study was to explore communication strategies health care administrators use to guide NPC patterns. The target population included administrators, physicians, and nurses in a medical center associated with a university in the Middle East. Hospital leaders have the responsibility of achieving quality and safety of patient care and financial performance as guided by their hospital missions (Speziale, 2015). Including nurses

and physicians in the target population, therefore, allowed for scrutiny of clinical communication patterns that administrators monitor.

The social change implication of this study may be improved patient care and hospital experience. Improving clinical communication has the potential to improve patient satisfaction by providing patients with a positive experience at the hospital (Radtke, 2013; Twigg & McCullough, 2014). In addition, health care providers may benefit from a more professional and satisfying work environment (Ajeigbe, McNeese-Smith, Phillips, & Leach, 2014; Blake, Leach, Robbins, Pike, & Needleman, 2013).

Nature of the Study

In this study, I used a qualitative research methodology. Researchers use qualitative methodology to explore phenomena and experiences occurring in a natural setting (Yilmaz, 2013). Qualitative research allows comprehension of experiences and opinions of participants (Zhang & Creswell, 2013). On the other hand, researchers use quantitative studies to validate and confirm existing theories and develop generalizations by quantifying data using a numeric or statistical approach (Yilmaz, 2013). Quantitative research methods are examinations of cause and effect variables (Zhang & Creswell, 2013). Mixed methods research is a combination of the quantitative and qualitative methods (Smith, Sparkes, Phoenix, & Kirkby, 2012). The research goal was to explore participants' views and experiences and not to test hypotheses; therefore, quantitative and mixed research methods were not appropriate for this study.

I used a single case study design based on the objective to obtain a deep understanding of certain experiences of a small group. Case study design allows deep

investigation of a phenomenon within its environment (Crawford, Omer, & Seago, 2012). Researchers use case study research to make evidence-based decisions within a professional practice (Baxter & Jack, 2008). Other qualitative research designs are also available. In ethnography, researchers use observations and interviews to analyze cultures over time (Wägar, 2012). The ethnographic design partially serves the purpose of this study. However, the purpose was not studying a particular group, but rather studying a certain phenomenon within a group. In phenomenology, the researcher describes personal experiences in depth (Moustakas, 1994). However, given the detailed exploration of the phenomenon occurring within a small group of team members, phenomenology would have only partially fulfilled the purpose of the study. Narrative research is fit for studying the lives of participants (Barusch, 2012), but that was outside the purpose of this study. Because I was exploring communication strategies health care administrators use to guide NPC patterns, I selected an exploratory single case study design rather than the other qualitative design options.

Research Question

The research question guiding this study was: What communication strategies do health care administrators use to guide NPC patterns? To explore these communication strategies, I interviewed health care administrators responsible for communication protocols and strategies that guide NPC patterns. I also interviewed nurses and physicians to assess the effects of administrators' strategies on NPC patterns. A semistructured interview technique was applied using open-ended interview questions.

Interview Questions for Administrators

1. What are your strategies for guiding NPC patterns?
2. What are the conditions that promote effective communication strategies?
3. What are the challenges of implementing communication strategies?
4. How do you evaluate the implementation of communication strategies?
5. How do staff relationships affect communication strategies?
6. What additional information about communication strategies would you like to add?

Interview Questions for Nurses

1. How would you describe effective routine communication?
2. What communication guidelines have you received from your manager?
3. What feedback have you received from your manager that suggests that the communication guidelines are effective?
4. What are communication facilitators (i.e., processes or technological advancements) with physicians?
5. What communication challenges or barriers do you experience in working with the physicians?
6. How do you communicate an urgent issue with a physician?
7. What is a scenario or example that happened with you of an effective communication incident and the effect it had on patient care and later communications?
8. What is a scenario or example that happened with you of a miscommunication and what was the effect it had on patient care and later communications?

9. What guidelines would you recommend to administrators in guiding NPC patterns?
10. What additional information would you like to add?

Interview Questions for Physicians

1. How would you describe effective routine communication?
2. What communication guidelines have you received from your manager?
3. What feedback have you received from your manager that suggests that the communication guidelines are effective?
4. What are communication facilitators (i.e., processes or technological advancements) with nurses?
5. What communication challenges or barriers do you experience in working with the nurses?
6. How do you communicate an urgent issue with a nurse?
7. What is a scenario or example that happened with you of an effective communication incident and the effect it had on patient care and later communications?
8. What is a scenario or example that happened with you of a miscommunication and what was the effect it had on patient care and later communications?
9. What guidelines would you recommend to administrators in guiding NPC patterns?
10. What additional information would you like to add?

Conceptual Framework

Relational coordination theory served as the conceptual framework for this research study. Relational coordination is a process in which team members use

communication and relationships interrelatedly to integrate tasks for effective work outcomes and resource utilization (Gittell, Godfrey, & Thistlethwaite, 2013). Relational coordination supports the interrelation communications among groups who perform common tasks at work (Gittell et al., 2013; Hartgerink et al., 2014). Gittell (2000) developed relational coordination as a research companion to organizational studies in 1990. This theory's model emerged from a study designed for improving flight-departure processes, which are complex and involve interrelated tasks that determine success or failure (Gittell, 2000). Gittell advanced the concept of relational coordination to similar interactive task-oriented work environments that involve different disciplines such as patient care (Gittell et al., 2013).

For efficient coordination, relational coordination includes three specific relational dimensions that health care providers need: shared knowledge, common goals, and mutual respect (Havens, Vasey, Gittell, & Lin, 2010). The communication aspects of relational coordination are frequency, timeliness, and accuracy (Havens et al., 2010); proper coordination occurs when the communication takes place for a problem-solving purpose (Figure 1; Havens et al., 2010). In relational coordination, communication ties contribute to proper communication and hence coordination between members. In a health care setting, the frequency and timeliness of communication keep team members updated on the progress of patient care (Havens et al., 2010). In addition, the accuracy of information delivered and received prevents errors and delays (Havens et al., 2010). Therefore, relational coordination served as an appropriate framework for this research.

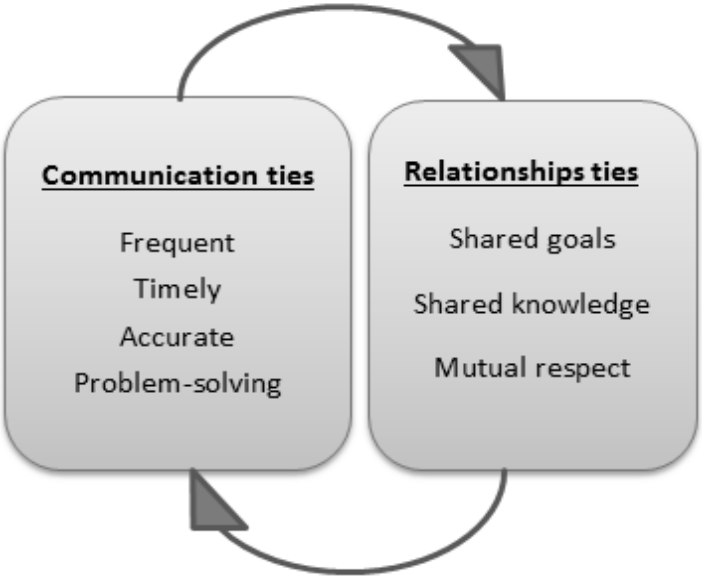

Figure 1. Dimensions of relational coordination. Adapted from "Relational Coordination Among Nurses and other Providers: Impact on the Quality of Patient Care," by D. Havens, J. Vasey, J. Gittell, and W. Lin, 2010, *Journal of Nursing Management*, *18*, p. 927. Reprinted with permission (Appendix B).

Operational Definitions

Handoff: The process of information exchange between two clinicians when a new clinician assumes responsibility for patient care (Cohen, Hiligoss, & Amaral, 2012).

Hawthorne effect: The alteration of the study results due to participants' awareness that they were under study (Fernald, Coombs, DeAlleaume, West, & Parnes, 2012).

Multidisciplinary rounds: Meetings of members from different health care disciplines to discuss patients' medical conditions and set the plan of care (Mercedes, Fairman, Hogan, Thomas, & Slyer, 2015).

Speak-up: To bring problems and possibilities to the attention of those with the ability to take action. Employees speak-up when they become dissatisfied or note a need for improvement (Burris, Detert, & Romney, 2013).

WhatsApp: A smartphone application invented in 2009, used for sending and receiving messages (Wani, Rabah, AlFadil, Dewanjee, & Najmi, 2013).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are concepts that the investigator assumes to be factual but does not verify (Marshall & Rossman, 2014). In this research, I assumed that a communication model might improve NPC and have a positive effect on hospitals' mission accomplishment. Another assumption was that administrators, nurses, and physicians would provide clear, precise, and truthful responses related to their experience regarding the research question. In addition, I assumed that I, as the primary researcher of the study, would be able to comprehend the participants' responses and extract, identify, categorize, and analyze emerging themes.

Limitations

Limitations are potential weaknesses of the research that the investigator cannot manipulate (Marshall & Rossman, 2014). In qualitative case study research, investigators need to receive training (Yin, 2013). A limitation of this study was that this research was the first case study research that I conducted, which I addressed by taking doctoral case study lectures and reading case study books, peer-reviewed articles, and dissertations to prepare for conducting this research study. Another limitation was that the population size was small because I implemented the study in only one hospital. Conducting the study in a single hospital limits the transferability of the findings to a broader population.

Delimitations

Delimitations are the boundaries that guide the study and are within the

control of the researcher (Becker, 2013). The first delimitation of the study was the use of a single case study approach with three physicians, three nurses, and five administrators working at a single medical center. Although I could have gathered various data from other hospitals, it was geographically convenient to include only one medical center. The second delimitation was the use of interviews and archival documents as the means of data gathering, excluding useful information that I could gain through other ways.

Significance of the Study

The needs of the customer now shape the global health care market (Lang, 2012). Health care facilities are more attentive to patient satisfaction as a complimentary quality measure (Fenton, Jerant, Bertakis, & Franks, 2012). In the United States, Medicare and Medicaid reimburse hospitals based on patient satisfaction survey results (Lang, 2012). Similarly, in Lebanon, health care has become a competitive market in which patients' satisfaction, quality indicators, and safety practices affect hospitals' reputations and the patients' choices of their hospitals (Ammo, Abu-Shaheen, Kobrosly, & Al-Tannir, 2014). Therefore, ensuring a hospital's sustainability requires high quality of care, financial performance, and patient satisfaction.

Contribution to Business Practice

This study has several business practice implications. It is of value to people working to improve a hospital's business performance and sustainability through the restructuring of internal operations and processes. This study is also significant because its findings can help hospital administrators attain quality and safety of patient care, which is a major element in a hospital's mission statement.

Communication is central to achieving hospitals' quality of care, patient safety, and financial sustainability (Singer & Vogus, 2013). One of the common causes of errors in hospitals is communication breakdowns (Ezziane, Maruthappu, & Warren, 2012). For example, delegates of the Joint Commission on Accreditation of Health Care Organizations analyzed 474 sentinel events that occurred in the second quarter of 2015 and in which communication failures were major contributing factors (The Joint Commission, 2015). Using error data from the Veterans Health Administration, researchers identified 70% to 80% of root causes of errors as communication-related (Ezziane et al., 2012). Analysis of operating room data in a university hospital in Turkey showed that 59.4% of the medical errors were the result of insufficient staff communication (Ugur, Kara, Yildirim, & Akbal, 2016). These findings suggested that improving NPC and fostering collaboration and improving clinical team efficiency may promote patients' safety and quality of care by decreasing potential errors.

Improving quality of care is also important because it enhances financial performance by decreasing health care costs resulting from medical errors and sentinel events (Fenton et al., 2012). Therefore, hospital leaders should design appropriate structures and processes of communication to achieve efficient business operations and sustainable organizations.

Health care leaders also need patient satisfaction as a complementary measure of quality in health care (Fenton et al., 2012). Patients choose their health care plans and physicians according to the intensity of their satisfaction in previous experiences (Ezziane et al., 2012). Proper NPC may improve team efficiency, ensures

transmission of information to patients in an efficient and timely manner, therefore fostering patient satisfaction.

Implications for Social Change

Quality and safety of patient care is the interest of both the society and hospitals. The study findings add to the existing body of knowledge about improving quality and safety led by communication strategies guiding NPC patterns. Patients have the right to receive safe care in a positive and informative environment (Shekelle et al., 2013). Therefore, improving NPC may contribute to ensuring that members of a community will have access to safe and satisfying patient care.

This study may also have implications for health care workers. Effective communication may improve employee satisfaction through improving team efficiency and fostering a positive work environment (Körner, Wirtz, Bengel, & Göritz, 2015). Therefore, the findings of this study may also contribute to more satisfied health care employees.

The findings of this study may also contribute to social change by decreasing health care expenditures by private and government sectors. With increasing expenditures of the health care industry on information technology systems and courses of treatment, governments have been seeking cost containment strategies (Aiken et al., 2012). Measures taken to decrease health care costs can include decreasing the length of stay of patients, refining the hospital throughput processes, and improving the efficiency of clinical teams (Aiken et al., 2012). Improved communication may decrease hospital expenditures through decreasing adverse event costs. The cost of measurable, potentially preventable adverse medical events exceeded $1 billion in the United States in 2009 (David, Gunnarsson, Waters,

Horblyuk, & Kaplan, 2013). Therefore, the findings of this study may contribute to decreasing societal health care expenditures.

A Review of the Professional and Academic Literature

Some health care administrators lack communication strategies to guide NPC patterns (Joffe et al., 2013). The purpose of this component is to critically analyze and synthesize various sources related to the conceptual framework of this study. The literature review component includes an analysis of research studies that addressed topics of relational coordination, the role of health care leaders, dimensions of health care providers' communication, team effectiveness, implications of communication, and communication strategies. The study included 242 resources, of which 214 (88%) were peer reviewed, and 210 (86.7%) were published in 2012 or later. In addition, the study included seminal sources, statistical websites, books, and non-peer review articles.

To synthesize a comprehensive review of the topic, I used the following keywords to search for peer-reviewed articles: *communication, coordination, hospital missions, hospitals, nurse-physician, patient satisfaction, quality, relational coordination, safety, team effectiveness,* and *communication strategies.* The research databases that I used for this literature search included the following: Academic Search, Business Source Complete, EBSCOhost, Google Scholar, ProQuest, and SAGE. Studies present in the literature related to NPC and team effectiveness may illustrate how communication between health care providers impact quality, safety, team efficiency, and hospital financial performance. Included in the literature review is an analysis and synthesis of the literature about relational coordination, the conceptual framework for this study, and studies that show how relational

coordination contributes to communication and team effectiveness. Also, the literature review includes studies showing the role of the health care managers in setting, implementing, and monitoring hospital missions. Studies related to team effectiveness and implications of communication breakdowns show the characteristics of effective communication in health care teams and how communication failures may jeopardize quality and safety. Studies related to NPC patterns, failures, interventions, and communication during handoff provide an overview of the reasons for communication failure within a health care team and the potential solutions proposed by researchers. Finally, studies related to communication strategies offer an overview of the current NPC strategies proposed by researchers.

Researchers write literature reviews to describe, analyze, and summarize previous research studies on the subject (Cowell, 2012). The purpose of this qualitative, explorative case study was to explore communication strategies that health care administrators use to guide NPC patterns. I organized the literature review as follows:

- relational coordination,
- role of health care leaders in responding to mission statements,
- implications of NPC,
- health care team effectiveness,
- NPC patterns,
- NPC failures,
- communication interventions,
- communication during handoffs,
- communication strategies, and

- summary.

The literature review provides researchers with a foundation related to the topic of health care providers' communication.

Relational Coordination

The focus of this study was to explore communication strategies that health care administrators use to guide NPC patterns. Gitell's relational coordination proposes three dimensions of work coordination relationships and four dimensions of communication among colleagues to create effective organizations (Rundall, Wu, Lewis, Schoenherr, & Shortell, 2015). Health care researchers may use relational coordination to set the basis for effective communication strategies that ensures quality and safety, cost effectiveness, and mission attainment (Rundall et al., 2015).

Patient care is a complex work process that is dependent on several factors (Gittell et al., 2013). Health care providers' communication is a key element of a pattern that includes collaboration and coordination of multidisciplinary clinical care providers (Havens et al., 2010). Interprofessional collaboration is the interaction of health care providers from different professional backgrounds to accomplish different but interdependent patient care related tasks to deliver the highest quality of care (Cramm & Nieboer, 2012; Gittell et al., 2013; Havens et al., 2010). To achieve this, health care organizational structures need high levels of quality communication and performance efficiency (Gittell et al., 2013). Similarly, ineffective relationships can hinder collaboration, communication, and teamwork (Friese & Manojlovich, 2012). Team members can improve their communication by improving relational coordination and interprofessional collaboration and vice versa (Havens et al., 2010).

In essence, relational coordination is a combination of relationships, communication, and mutually supporting coordination (Gittell, 2002). Relationship dimensions are shared knowledge, shared goals, and mutual respect (Gittell et al., 2013). When team members share the same goals regarding patient care, coordination is enhanced (Ainsworth, Pamplin, Rn, Linfoot, & Chung, 2013). Multidisciplinary heath care providers share patient care as an ultimate goal (Ainsworth et al., 2013). Knowing each other's work responsibilities helps team members to see clearly and consider how others work (Ainsworth et al., 2013). In health care, each discipline receives different types of training, leading to a distinctive expertise (Dougherty, 1992), which may prevent team members from having shared knowledge. Finally, members of various disciplines should respect and value others' contribution to the overall work process, which enhances coordination (Havens et al., 2010).

The communication dimensions of relational coordination are frequency, timeliness, accuracy, and the problem-solving nature of communication among team members (Gittell et al., 2013). These four communication dimensions can serve as a cogent NPC model. Frequent communication between team members can help in relationship building and thereby improve team efficiency (Rundall et al., 2015). In highly complex and interrelated work processes, timely communication contributes to achieving work coordination (Rundall et al., 2015). Similarly, communicating accurate or correct information contributes to safety and efficiency of the work process (Rundall et al., 2015).

The problem-solving nature of communication supports team efficiency and goal achievement (Rundall et al., 2015). Teams that have a problem-solving approach when dealing with challenges are more successful than teams that have a blaming

environment (Gittell, Beswick, Goldmann, & Wallack, 2015). Blaming is problematic because it fosters information hiding and prevents team development (Gittell et al., 2015; Havens et al., 2010).

Relational coordination has been integrated into health care team studies (Gittell et al., 2013; Hartgerink et al., 2014). Health care leaders can use relational coordination as a baseline evaluation tool to assess outcomes like quality and team efficiency (Gittell et al., 2013). Gittell et al. (2013) suggested measuring relational coordination by a survey of seven questions that assess timeliness, frequency, accuracy, the problem-solving nature of communication, and quality of the underlying relationship. In addition, applying relational coordination requires changing the bureaucratic structures of health care teams to be relational structures (Gittell et al., 2013).

In a study designed to identify relational coordination predictors among health care providers working with elderly patients, nurses showed higher levels of relational coordination than medical specialists (Hartgerink et al., 2014). In addition, a high level of relational coordination has been correlated with being female (Hartgerink et al., 2014). Higher levels of relational coordination have been correlated with the greater number of disciplines represented in multidisciplinary meetings (Hartgerink et al., 2014). In a separate study, to enhance nurse-resident physician communication, staff nurses developed a nurse-led, unit-specific orientation for the residents based on relational coordination (Benike & Clark, 2015). This 30-minute orientation consisted of discussing opportunities for enhanced communication, reviewing patient satisfaction with overall teamwork in the unit, and discussing unit routines (Benike & Clark, 2015). Nurses and physicians completed a pre- and post-survey based on the

Collaborative Practice Scale and the Interprofessional Collaboration Scale (Benike & Clark, 2015). After 6 months of the implementation of this intervention, study results showed improvement in perceived collaboration (Benike & Clark, 2015).

Another theory that could have been used to frame the research was Aristotle's communication model. Aristotle (as cited in Burns, Bradley, & Weiner, 2012) defined communication as an activity that involves the speaker, the listener, and the message, in which the message is a package of character, emotion, and logic. Communication is conveying an intended message, thought, or idea from one channel to the other, allowing feedback between the channels (Burns et al., 2012). Aristotle (as cited in Jebb, 1909) described the complexities of the communicator and receiver by identifying the three critical elements: ethos, pathos, and logos. Ethos resembles credibility and trustworthiness of the speaker. Pathos is the emotions of the listener, which is empathy with the topic (Jebb, 1909). Logos is the logic of the speaker's ideas (Jebb, 1909). Other aspects that affect communication are the interests and beliefs of the stakeholders. When the stakeholders are both interested in the topic, they will more fully engage in the communication (Jebb, 1909). Likewise, when the communication resonates with the receivers' core values and beliefs, the receivers are more likely to accept and comprehend the communication (Jebb, 1909). However, Aristotle's communication model is too primitive to describe the complexities of the health care setting because it does not provide the attributes of relational coordination such as timeliness, accuracy, frequency, and problem-solving nature of the communication.

Emotional intelligence is a notion that could have also been used as a conceptual framework for this study. Emotional intelligence, a subset of social

intelligence, is the ability to understand and monitor self and people's emotions to direct one's own thinking and behaviors (Mayer & Salovey, 1993). The concept of emotional intelligence indicates how a person assesses and conveys feelings as a problem-solving approach (Mayer & Salovey, 1993). Employees' abilities to deal with stressful situations vary according to their emotional intelligence (Juravich & Babiak, 2015). For instance, two individuals can react to the same situation differently because they have different levels of emotional intelligence.

Researchers have studied emotional intelligence as a means of explaining the differences in team effectiveness and organizational performance (Juravich & Babiak, 2015). At the workplace, employees display their emotions according to the desired rules and regulations of their organizations. Therefore, employees' emotional intelligence affects their communication and performance in their teams. Moreover, administrators can use emotional intelligence as a strategy in which a leader uses modeling as a form of self-control (Juravich & Babiak, 2015). Emotional intelligence could have been used as the framework of this study; however, the focus of this study was on strategies more than emotions. In addition, relational coordination provides communication and relationship ties that are more comprehensive to answer the research question of the study.

Role of Health Care Leaders in Responding to Mission Statements

Hospital mission statements are concise statements set by the hospital boards to describe the purpose and goals of the institution (Babnik, Breznik, Dermol, & Trunk, 2014). Health care managers and policymakers have the important role of fulfilling the hospital's mission while maintaining the hospital's financial viability (Clark, Singer, Kane, & Valentine, 2013). Managers are responsible for setting the

internal structures and processes as part of strategic planning to meet the organizational goals (Clark et al., 2013).

Quality and safety of patient care are major goals of hospital missions (Leggat & Holmes, 2015). Millar, Mannion, Freeman, and Davies (2013) highlighted the importance of prioritizing quality and safety in hospital missions and the active involvement of leadership in quality improvement projects. Hospitals that set quality and safety as high priorities in their strategic goals have higher performance (Prybil, Bardach, & Fardo, 2013). Hospital management commits to quality and safety through setting quality objectives, implementing quality improvement projects, and engaging employees in these projects (Mosadeghrad, Ferdosi, Afshar, & HosseiniNejhad, 2013). Therefore, hospital managers are responsible for attaining high performance through improving quality and safety.

Improving quality and safety of patient care requires improving internal processes that have direct implications for patient care (Brock et al., 2013). Communication between health care providers is one process that hospital leaders need to improve as part of improving quality and safety: Communication failures in hospitals lead to medical errors that jeopardize quality and safety (Brock et al., 2013). In addition, communication failures affect team efficiency and staff satisfaction, which in turn affect quality and safety of patient care (Ajeigbe et al., 2014; Blake et al., 2013). Therefore, hospital leaders have a primary role in improving health care providers' communication processes leading to improving quality and safety and consequently attaining a hospital's mission.

Implications of Nurse-Physician Communication

In the hospital business, quality and safety are major concerns for health care

leaders (James, 2013; O'Leary et al., 2013). Communication breakdowns affect quality and safety (Johnson & Kring, 2012; O'Leary et al., 2013). Hospital administrators make structural and process-related modifications, including improving team communications that promote quality and safety (Brock et al., 2013).

Professional communication helps health care providers in making decisions affecting safety and quality in critical and regular patient care units (Crawford et al., 2012; Johnson & Kring, 2012; O'Leary et al., 2013; Smith, Quan et al., 2012). Researchers identified communication as a primary cause of preventable medical errors in hospitals (Hu et al., 2012). Rolston et al. (2014) identified communication failures as one of the two causes of medical errors. Breakdowns in NPC were the causes for two-thirds of the sentinel events reported by the Joint Commission between 1995 and 2005 (O'Leary, Sehgal, Terrell, & Williams, 2011). Communication failure, and compromising quality and safety, accounted for 91% of the medical errors reported by resident physicians (O'Leary et al., 2013). Over 60% of communication failures in medical ward care affect patient safety, and 10% of those failings result in physical injury (Pannick, Beveridge, Wachter, & Sevdalis, 2014). Therefore, communication among health care providers have a direct impact on quality and safety and consequently on business sustainability.

Nurses and physicians have different perceptions about what affects quality and safety of patient care. In a study of the effect of coordination on nurses and doctors' insights about quality of care, nurses considered conducting *multidisciplinary rounds* with physicians improves interprofessional communication and quality of patient care (McIntosh et al., 2014). Whereas, physicians perceived that conducting multidisciplinary rounds and discussing patient cases with nurses or other health care

professionals does not affect the quality of care (McIntosh et al., 2014). This difference in perception is a result of the differences in worldviews between nurses and physicians requiring a system that encourages team cohesiveness and smooth transfer of communication (Crawford et al., 2012). Nurses perceive patient care as holistic, whereas, physicians are in tune to body functions rather than the overall patient health (Crawford et al., 2012).

Although satisfied hospital staff may provide high quality care (Pinder, Greaves, Aylin, Jarman, & Bottle, 2013), hospital leaders may also need to improve staff satisfaction. Communication and coordination of care between health care providers also ensure team efficiency and effectiveness, which affect staff satisfaction (Rowlands & Callen, 2013). Nurses and physicians who practice teamwork and communicate effectively have higher levels of job satisfaction than those who do not (Ajeigbe et al., 2014; Blake et al., 2013). After the application of a patient-centered nurse-physician rounding system in a tertiary care community hospital, nurses' satisfaction from enhanced rounding and communication by doctors increased substantially (Sharma & Klocke, 2014). Effective communication also improves nurses' self-worth in their teams, work processes, and nurses' satisfaction (Sharma & Klocke, 2014). Therefore, effective communication may improve nurses and physicians' job satisfaction, which contributes to improving quality and safety.

Although it is not directly related to quality and safety, patient satisfaction is one of the business indicators of the organization's success and sustainability (Saman & Kavanagh, 2013). Effective NPC contributes to improved patient satisfaction (Mercedes et al., 2015). Effective communication contributes to the improvement of quality of care, thus increasing patient satisfaction (Atallah, Hamdan-Mansour, Al-

Sayed, & Aboshaiqah, 2013). Therefore, improving communication is central to achieving hospital goals through enhanced patient satisfaction.

Health Care Team Effectiveness

Clinical teams are crucial to comply with the health care organizations' goals in attaining and sustaining quality patient care (Burns et al., 2012). Teamwork and communication are critical requirements for quality and safety (Weaver, Dy, & Rosen, 2014). Quality patient care necessitates that health care providers from multiple disciplines interact and communicate together continuously to plan and execute tasks (Burns et al., 2012). Therefore, hospital administrators need to create an efficient system of communication within health care teams that ensures quality and safety of patient care delivery.

For leaders to ensure quality and safety of patient care delivery, they need to attain health care team effectiveness (Deneckere et al., 2013). To understand health care team effectiveness, it is important to define teams. A team is a group of people collaboratively working together to attain a shared goal (Kilpatrick, Lavoie-Tremblay, Ritchie, & Lamothe, 2014). A team is a group of individuals possessing the same purpose (Burns et al., 2012). In the inpatient setting, a multidisciplinary team is a group of professionals from different disciplines working together for achieving quality patient care (Burns et al., 2012; Taplin, Foster, & Shortell, 2013). Health care institutions require clinical teams not only for providing patient care but also for recognizing and solving problems, conducting performance improvement projects, and attaining a safe practice (Burns et al., 2012).

Many important characteristics influence team effectiveness such as team size, composition, diversity, nature of the work, and the environmental context (Burns et

al., 2012). Often, medical team members frequently change as physicians rotate on different patient units according to a schedule. The shifting nature of health care medical teams affects collegial trust, which is essential to a productive and safe working environment (West & Lyubovnikova, 2013). The relationship between team processes and team effectiveness is positive (Kilpatrick et al., 2014). A process is a sequence of events happening over a period in a certain context (Kilpatrick et al., 2014). Communication is a key team process among other processes like coordination, interaction patterns among members, and decision making (Kilpatrick et al., 2014).

The inputs of team effectiveness include organizational context, team design, and team task design (Valentine, Nembhard, & Edmondson, 2014). Also, there are several mediators that promote team effectiveness: communication, corporation, workload sharing, team learning, resources usage, information sharing, team process, and task interactions (Valentine et al., 2014). Hospital leaders aiming to improve team quality outcomes need to rearrange teams to facilitate team processes (Ghorob & Bodenheimer, 2012; Taplin et al., 2013). In addition to the team characteristics, there are five personal values of health care team members: honesty, discipline, creativity, humility, and curiosity (Wynia, Von Kohorn, & Mitchell, 2012). Thus, health care leaders aiming at improving quality of care need to improve health care teams' characteristics and values of team members.

Nurse-Physician Communication Patterns

Communication is a core element of the effectiveness and delivery of quality care by health care teams (Jaca, Viles, Tanco, Mateo, & Santos, 2013; Kummerow, Kensinger, Hart, Mathisen, & Kripalani, 2015). To improve the communication

patterns in health care teams, health care leaders assessed the type, channel, mode, duration, and frequency of communication between health care providers (Manojlovich et al., 2014). Proper communication within the health care team is necessary for improving team effectiveness (Manojlovich et al., 2014).

Communication failures were evident in surgical and medical multidisciplinary teams (Ilan et al., 2012; Nagpal et al., 2012). In a qualitative study of communication patterns in surgical wards, there was an absent or fragmented communication between health care teams (Nagpal et al., 2012). Similarly, Ilan et al. (2012) used three handoff tools to evaluate communication between health care providers in ICU. They found that the recommendation section was completely absent from both nurses and physicians' communication. Also, physicians did not use consistent communication patterns. Elements of the communication tools used appeared repeatedly and randomly (Ilan et al., 2012). Proper multidisciplinary communication requires reexamining of the communication process (Ilan et al., 2012; Nagpal et al., 2012).

Communication studies revealed various communication patterns between multidisciplinary care team (Gotlib-Conn, Reeves, Dainty, Kenaszchuk, & Zwarenstein, 2012; Manojlovich et al., 2014; Patterson et al. 2013). In a study to assess the obstacles and enablers of interprofessional communication, Gotlib-Conn et al. (2012) used semistructured interviews and observation of communication events between nurses and doctors in a multiple case study. Three main themes emerged from data analysis: (a) availability of consultants and physicians on the unit for more efficient communication, (b) physician vs. team-based approaches, and (c) relationship building (Gotlib-Conn et al., 2012). Measuring NPC on medical-surgical

units is important specifically because of the significant variation in disease processes and care delivery on these units, which makes NPC more challenging (Manojlovich et al., 2014). In their study in two 20-bed medicine wards in an academically affiliated United States Department of Veterans Affairs Hospital, nurses and physicians did not share a common body of knowledge (Manojlovich et al., 2014). In contrast, cohesion between physicians and nurses was evident in another study to characterize communication of clinicians in the emergency room (Patterson et al., 2013). Finally, researchers highlighted the various patterns of communication leading to team communication failures.

Nurse-Physician Communication Failures

To achieve safe and effective care delivery, managers need to identify and resolve communication failures within the health care team (Rowlands & Callen, 2013). Many factors cause ineffective communication in health care settings, including the complex nature of the information network, excessive interruptions, the diversity of education that health care providers receive, and the hierarchical nature of conversations (Rowlands & Callen, 2013). The complex nature of health care impedes efficient clinical communication. Managers need to consider many factors in their quest for modeling a system for NPC.

The challenge that managers face in achieving safe and effective health care is whether health care professionals deliver the correct message promptly, to the concerned person, in the right place, for the right purpose (Varpio, Hall, Lingard, & Schryer, 2008). Nurses and physicians interact using several methods and occasions to exchange patient information (Toccafondi et al., 2012). However, nurses and physicians do not try to meet or communicate by phone, which results in

communication breakdowns (O'Leary et al., 2013). In their study, O'Leary et al. (2013) interviewed nurses and physicians over a 1-month period. The study revealed that nurses had known the right physicians 71% of the time, but communicated with them in only half of time. However, physicians had known the right nurses 36% of the time and communicated with them in 62% of the instances (O'Leary et al., 2013). Hence, health care administrators might benefit whether health care providers are attempting to communicate with each other.

In putting patient-centered communication strategies, managers would benefit from nurses and physicians' views. Nurses and physicians have different views about communication (Nathanson et al., 2011). The differing worldviews of doctors and nurses affect team efficiency and patient care (Wilkes, Hoffman, Slavin, & Usatine, 2013). Nurses perceived that physicians did not share decisions with them. Whereas, doctors were not aware of this conflict and did not voice dissatisfaction with nurse collaboration (Nathanson et al., 2011). Physicians and nurses developed their own professional identity, each belonging to their own group. Group identity is explained by social identity theory, which entails that members of the same group favor their group's attributes and perceive them better than others' attributes (Burford, 2012; Weller, 2012). Similarly, in a Canadian ethnographic study, nurses and other health care professionals rarely gave their input during the multidisciplinary rounds. Their responses were limited to briefly stating facts. Physicians often ignored the nurses' questions and opinions related to patient care (Zwarenstein, Rice, Gotlib-Conn, Kenaszchuk, & Reeves, 2013). Finally, managers may benefit from reflecting on the nurses and physicians' opposing views related to NPC.

Nurses and physicians experience interruptions that may impede proper communication (Burns, 2011). These interruptions usually result from poor planning and unclear decision-making processes. Nurses and physicians usually miscommunicate because of three factors: (a) they do not round together resulting in poor planning, (b) they experience frequent interruptions, and (c) and they perform repetitive work (Burns, 2011). Conducting daily rounds collaboratively by the nurses and the physicians does not only improve communication and team efficiency; it also increases patients' satisfaction as nurses and physicians become more active in the team (Rimmerman, 2013). Nurses and physicians rounding together increased nurse and physician satisfaction, improved health care outcomes, and increased patient satisfaction (Rimmerman, 2013).

Communication is part of the nurse-physician collaboration (Nair, Fitzpatrick, McNulty, Click, & Glembocki, 2012), which can be reflected in the relationship components of relational coordination including shared knowledge, shared goals, and mutual respect (Gittell et al., 2013). Collaborative behaviors between nurses and doctors include interacting about patient care and collaboratively taking decisions (Nair et al., 2012). The nurse-physician relationship is also part of their collaboration (Nair et al., 2012). In Nair's study, nurses and physicians did not share the decisions related to the plan of care leading to disruptive communication and planning. Ambiguous specification of responsibilities and lack of continuity in teams working in shifts results in incomplete NPC (Grandoa, Pelegb, Cuggiac, & Glasspoola, 2011). The lack of information about workers' competencies and clarity to determine the workers assigned to the work, result in an inefficient organization of teams and disruptive communication (Grandoa et al., 2011). In addition, medical-surgical units

receive patients with multiple diseases. Nurses communicate with rotating physicians from different medical and surgical specialties, which increases communication channels (Manojlovich et al., 2014). Barriers to communication include hierarchy-based interactions, continuously rotating physicians, conflicting opinions, and previous predispositions (Hollenbeck, Beersma, & Shouten, 2012; Johnson & Kring, 2012; Nair et al., 2012).

Communication Interventions

Communication is more than sending and receiving a message. It is a social process, in which each is affected by his or her history, anticipations, assumptions, and the organizational culture (Ilan et al., 2012). Therefore, structured tools for improving communication might not improve communication if not used within a process respect and attentiveness (Ilan et al., 2012). Communication interventions mentioned in the literature included team training initiatives, standardized communication protocols, and team structure interventions (Salas & Rosen, 2013). Each of these strategies has its value. Nonetheless, they all complement each other (Deneckere et al., 2012). For instance, Bunnell et al. (2013) combined two approaches: teamwork training and team redesign, for specific care communication challenges faced in outpatient oncology. As a result, Bunnell et al. achieved significant improvement in care processes as well as staff and patient reported outcomes.

Physicians and nurses have different perspectives and priorities in patient care (O'Leary, Sehgal, Terrell, & Williams, 2011). What nurses perceive as very urgent, physicians may consider as an interruption to their work. Nurses perceive patient care as holistic, whereas, physicians care about body functions rather than the overall

patient health (Crawford et al., 2012). This difference causes communication gaps between nurses and physicians. In a mixed method study in Canada, nurses and physicians perceived timeframes differently because they prioritized patient care differently (O'Leary et al., 2011). Both nurses and physicians agreed that a patient asking for information from a physician is not an emergency. However, nurses perceived this issue as highly urgent because the patient verbalized dissatisfaction, whereas, physicians thought that the patient could wait for them (Quan et al., 2013).

In their educational curriculum, nurses and doctors do not learn about each other's roles (Weller et al., 2014). Teams that work together should receive communication and other types of training together (Weller et al., 2014). Nurses and physicians have different priorities affecting communication (McCaffrey, Hayes, Cassel, Miller-Reyes, & Donaldson, 2011). For this reason, McCaffrey et al. (2011) conducted communication and collaboration sessions for nurses and medical residents. Communication included collaboration, credibility, compassion, and coordination. Researchers asked nurses and doctors about their perceptions regarding communication with each other before the course. The course included defining roles, defining collaboration, teaching communication skills, and role playing. After 6 months of the course, focus group meetings with nurses and physicians, and unit observations showed a thorough explanation of issues by nurses, sharing thoughts and solutions and both parties, compromise, respect for everyone's position, and discussing solutions with all people involved (McCaffrey et al., 2011). Also, Rosentstein (2012) provided a checklist for improving communications skills in physicians including raising awareness, assessing obstacles, providing communication skills sessions, providing organizational support, and addressing noncompliance

events. The multidirectional approach, suggested by Rosentstein (2012) is crucial for improving communication among physicians and nurses.

In some situations, nurses lack the ability to *speak-up* to other coworkers in positional authority such as managers and physicians, thus jeopardizing patient safety (Sayre, McNeese-Smith, Leach, & Phillips, 2012). Speaking up is crucial for patient safety (Law & Chan, 2015). Hesitancy to speak-up can be one of the contributing factors to communication errors (Okuyama, Wagner, & Bijnen, 2014). Sayre et al. (2012) conducted educational sessions, which increased the nurses' ability to communicate patient safety issues to their managers and other team members. Moreover, speaking up improves the nurses' relationship with coworkers (Law & Chan, 2015).

The SBAR tool. SBAR, an abbreviation for Situation, Background, Assessment, and Recommendation, is a communication approach developed to structure and organize communication among different health care providers (Vardaman et al., 2012). In 2003, Kaiser Permanente introduced SBAR into the health care setting as a tool for arranging nurse-physician interactions in emergencies (Vardaman et al., 2012). Some health care leaders have adopted SBAR to standardize communication to achieve quality and safety.

Representatives of the Joint Commission of Patient Safety recommended using a standardized tool to overcome the challenges to effective communication (Sears, Lewis, Craddock, Flowers, & Bovie, 2014). SBAR tool improved health care providers' communication (De Meester, Verspuy, Monsieurs, & Van Bogaert, 2013; Vardaman et al., 2012). SBAR also enhanced patient safety as perceived by health care providers and improved interdisciplinary teamwork (Sears et al., 2014). De

Meester et al. (2013) conducted a pre and post interventional study in 16 hospital wards with trained intensive care nurses to communicate deteriorating patients' information with physicians using SBAR. Investigators measured the perceptions of nurses about communication and the serious adverse events 9 months before and 9 months after introducing the SBAR tool. After the intervention, nurses perceived that effective communication and coordination increased and the unexplained sentinel events in ICU decreased. Researchers, however, could not conclude that the decline in unexpected deaths resulted solely from the intervention (De Meester et al., 2013). Also, in a longitudinal study to decrease communication-based errors, 70% perceived that SBAR facilitated their communication with other team members (Sears et al., 2014).

In few studies, SBAR was not successful in improving communication (Joffe et al., 2013; Rosenthal, 2013). In a study to improve NPC and decrease nighttime physician paging in a 450-bed hospital in the United States, SBAR insignificantly improved communication (Rosenthal, 2013). However, physicians showed an overall satisfaction with the decreased number of paging they received during the night and nurses were appreciative for SBAR (Rosenthal, 2013). In addition, SBAR solely may not improve NPC (Joffe et al., 2013). In a randomized control simulated trial, nurses used the SBAR tool to communicate with physicians in three cases and handled the other three cases without the SBAR tool. Most of the nurses in SBAR group and the control group communicated the situation cues (SBAR 88%, control 84%, $p = .60$). However, most of the nurses using the SBAR tool did not communicate the background cues (SBAR 14%, control 31%, $p = .08$). In 14% of the cases, nurses communicated improper or incomplete background cue information. Physicians asked

about the background cues in a minority of the situations (SBAR 6%, control 16%, *p* = .39). Therefore, using the SBAR tool did not eliminate the possibility of missing key information during communication and did not improve clinical communication (Joffe et al., 2013).

Beside rounds. Beside and family-centered interdisciplinary rounds improve patient and family satisfaction as well as team communication (Gonzalo, Kuperman, Lehman, & Haidet, 2014a; Rappaport, Ketterer, Nilforoshan, & Sharif, 2012; Rimmerman, 2013). In a 90-day observation of internal medicine team rounds, most activities on physicians' patient care meetings did not occur in the presence of the patient (Stickrath et al., 2013). In a study at the Cleveland Clinic, nurses spent most of their time at the bedside, while physicians gave a maximum of 45 minutes of their time for each patient each day (Rimmerman, 2013). Physician and nurse leaders at Cleveland Clinic believe that joint nurse-physician rounds on the patient improve NPC. Rimmerman (2013) conducted a pilot project at Cleveland Clinic, in which attending physicians in the cardiology services and their teams called each nurse to round with them on their assigned patients. The rounds showed a very positive impact on nurses, physicians, and patients. As a result of this round structure change, nurses felt more empowered and enthusiastic about their work and physicians received fewer phone calls from nurses and patients regarding patient care. This change also influenced patient care positively. Most importantly, this pilot project improved the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAPS) scores significantly, especially those about NPC (Rimmerman, 2013).

Structured interdisciplinary rounds in the intensive care unit improved the efficiency of work and increased the quality of communication between nurses and

physicians (O'Leary et al., 2011). In a cross-sectional observational study of the perceptions of nurses, attending physicians, and house staff physicians, bedside rounds improved NPC and coordination (Gonzalo et al., 2014a). The highest ranking barrier was that nurses had limited time to participate in the bedside rounds (Gonzalo et al., 2014a). The factors associated with high occurrences of bedside rounds were having a senior resident conducting the round and an attending physician with less than 4 years of practice (Gonzalo, Wolpaw, Lehman, & Chuang, 2014b; Gonzalo et al., 2014c).

The use of technology. Communication methods between health care providers within hospital settings have developed historically. Health care providers used face-to-face meetings, telephone conversations, and overhead paging to discuss patient care matters. In the early 1980s, pagers gained popularity, and in the 1990s, hospitals used web-messaging and bidirectional pager communication (Fargen, O'Connor, Raymond, Sporrer, & Friedman, 2012).

The use of pagers is controversial, and according to Fargen et al. (2012) should be revisited. In an observational study, the use of pagers distracted resident physicians and might have contributed to medical errors because 68.3% of the pages residents received during the total observation period were not urgent and happened at a critical time when residents were setting the patient care plan (Fargen et al., 2012). While pagers are controversial, physicians and nurses have discovered a variety of alternative electronic communication devices such as tablets, smartphones, beepers, or two-way radio (McElroy, Ladner, & Holl, 2013).

Researchers had contradictory opinions about the effectiveness of technological systems in health care communications (Cowan, 2013; Johnston et al.,

2015; McElroy et al., 2013; Solvoll, Scholl, & Hartvigsen, 2013; Taylor, Ledford, Palmer, & Abel, 2014). Using technological systems such as smartphones and health information systems enhances communication especially in emergency situations that require immediacy, accuracy, and efficiency (McElroy et al., 2013). In a more recent study, Johnston et al. (2015) evaluated the use of the smartphone application, *WhatsApp*, as a communication means within a multidisciplinary team. WhatsApp represented a safe and efficient means of communication between team members fostering a more flat environment between attending, resident, and intern physicians (Johnston et al., 2015).

Technological systems may also have a disadvantage in health care communications. In a study by Solvoll et al. (2013), using smartphones increased interruptions of physicians' work. Also, using a Computerized Physician Order Entry had a risk of reducing NPC and affects the operational workflow (Cowan, 2013). Similarly, in another study, introducing an electronic medical record reduced face-to-face NPC and decreased the overall agreement about the care plan between health care professionals (Taylor et al., 2014).

Skills building training. The correlation between clinical communication and quality and safety of patient care necessitates training of professional providers on team communication (Schmutz & Manser, 2013). Teamwork training improves clinical outcomes (Schmutz & Manser, 2013). However, clinical students do not sufficiently learn how to work in interprofessional teams (Kolbe, Grande, & Spahn, 2015; Salas & Rosen, 2013). The Institute of Medicine in the United States and the Royal Commission in Canada recommended interdisciplinary team training as a core competency for all health professions (Schmitt, Gilbert, Brandt, & Weinstein, 2013).

Pfaff, Baxter, Jack, and Ploeg (2014) highlighted the gaps in leadership and communication education and stressed the importance of educating the nurses about their and other health care professionals' roles for better communication and collaboration.

In another study, interdisciplinary simulation team training using scenarios promoted collaboration between nurses and physicians (Maxson et al., 2011). Over time, team members sustained improvement in the decision-making process and doctors showed more understanding of the role of nurses in patient care (Maxson et al., 2011). Recently, Brock et al. (2013) used a communication training model, Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS), to improve the attitudes and knowledge of students regarding interprofessional communication. Brock et al. trained medical, nursing, and pharmacy students on team communication in a 4-hour didactic and simulation sessions. The students completed pre and post assessments that showed significant difference in attitudes toward team communication ($p < .001$), motivation ($p < .001$), usefulness of training ($p < .001$) and self-efficacy ($p = .005$) (Brock et al., 2013).

Communication During Handoffs

Failures in communication also include miscommunication at handoffs (Payne, Stein, Leong, & Dressler, 2012). Clinicians from different disciplines and different shifts alternate to assume patient care responsibility. Therefore, a proper and efficient handoff is important to maintain continuity and effectiveness of patient care (Cohen et al., 2012).

Most communication failures occur at handoff affecting quality and safety of care (Cohen et al., 2012). Handoff communication breakdowns are associated with

28% of surgical errors and 20% to 24% of malpractice claims (Cohen et al., 2012). Errors are mainly the result of omitting critical information during handoffs. As residents' working hours decreased, the frequency of handoffs and consequently the risk of errors increased (DeRienzo et al., 2012).

Resident handoff tools contributed to improving quality and safety of patient care (Agarwal et al., 2012). Starmer et al. (2013) designed and implemented a standardized communication and handoff training protocol at two general inpatient pediatric units at Boston Children's Hospital. As a result of the intervention, there was a decrease in medical errors and avoidable adverse incidents (Starmer et al., 2013). Starmer et al. (2014) implemented the same intervention in nine other hospitals, which decreased adverse events by 30% and medical errors by 23% (Starmer et al., 2014).

In a prospective observational clinical study, Agarwal et al. (2012) studied the effectiveness of a structured handoff from the operating room to the pediatric cardiac intensive care unit. Agrawal et al. evaluated verbal handoff and structured handoff using two anonymous surveys over a 3-year period. Structured handoff decreased the loss of information during handoff. In addition, it improved patient outcomes and decreased postoperative complications during the first 24 hours postoperatively (Agarwal et al., 2012). Resident handoff tools improve quality and safety of patient care through decreasing medical error and postoperative complications (Agarwal et al., 2012).

Nurse-to-nurse handoffs were also the concern of nursing researchers. Omitting important information related to medication and plan of care are gaps in nursing handoffs that negatively affected patient outcomes (Klim, Kelly, Kerr, Wood,

& McCann, 2013). Researchers focused on the practicality of the nursing handoff. They created several written and verbal handoff tools; SBAR, bedside handoff, and taped handoff (Staggers & Blaz, 2012). A standardized bedside nurse-to-nurse handoff was created and evaluated at Mayo Clinic (Maxson, Derby, Wrobleski, & Foss, 2012). After the intervention, patients were more knowledgeable about their care plan and nurses' perceptions about each other's accountability improved. The handoff experiment also improved medication reconciliation, and ability to communicate immediately with physicians (Maxson et al., 2012).

After the implementation of standardized handoff tools, 23 children's hospitals in the United States realized a 17.9% decrease in errors related to handoffs (Bigham et al., 2014). Similarly, in an observational study of handoff instances between physicians and nurses, the observed parameters were verbal interactions, the content of the communication, and the composition of the care plan (McMullan, Parush, & Momthan, 2015). The patients' status and plan of care categories had the highest proportion of interaction. Nurses asked most questions, and physicians consequently gave most responses, which is indicative of multidisciplinary verbal interaction that can decrease the loss of information during handoffs. The study informs the nurse-physician and handoff literature. However, the *Hawthorne effect* might have proactively influenced the nurses and physicians' interactions (McMullan et al., 2015).

In a study of the communication between pre-hospital and hospital providers, handoff communication between hospital staff statistically significantly improved during the transfer of a pediatric patient from the pre-hospital to the emergency department (Dojmi Di Delupis et al., 2014). The study involved handoff training for

pre-hospital and emergency department nurses including classroom lectures and simulation exercises. One of the study's limitations was that communication observations were conducted in simulation scenarios rather than in the actual field (Dojmi Di Delupis et al., 2014).

Communication Strategies

Hospitals are striving to achieve safe, effective, timely, and patient-centered care. To achieve these goals, hospital leaders have implemented strategies to improve clinical communication and coordination such as technology-based or quality improvement strategies (Kim et al., 2012). Representatives of the University of Michigan have applied a strategy in which a physician director and nurse manager partner to manage a clinical patient unit. The physician and nurse worked to encourage an environment to promote patient care delivery and the best patient experience. This strategy contributed to enhancing communication and collaborative behaviors among frontline health care providers. The physician director and the nurse manager would measure the effectiveness of clinical communication by assessing safety and engagement or staff (Kim et al., 2012). Six hospitals in the United States have adopted the unit level leadership model, which improved NPC, patient satisfaction, and staff turnover rates (Kim et al., 2014). In addition, the attending nurse model facilitates collaboration among nurses as well as between nurses and physicians through actively participating in interdisciplinary rounds and interprofessional dialogue (Fulmer et al., 2014). Like attending physicians, the attending nurse helps the staff nurses to stay up-to-date in clinical practice, studies related to clinical conditions, and advancements in safety, quality, and technology. In addition, the staff nurses observe attending nurses as peers with attending physicians

in developing the plan of care. The model was successful as it provided the opportunity for nurses to observe the physicians as colleagues, which improved their communication regarding patient care issues (Fulmer et al., 2014).

There is a difference between the status-based communication model and the team-centered communication model (Matzke et al., 2014). The status-based communication model was the norm of the nurse and physician's interactions, promoting the hierarchical relationship between team members, where the physicians used the other-directed strategies when speaking and nurses used the self-directed queries when speaking. The model discouraged criticism and reduced teamwork between team members (Matzke et al., 2014). Team-centered communication, which does not negate social, economic, or experience based differences between team members is an alternate model. Team-centered communication fosters the team rather than the individual based approach (Matzke et al., 2014). Similarly, nurses may have a role as professional communication facilitators (Ghiyasvandian, Zakerimoghadam, & Peyravi, 2014). Nurses should have a significant role in mediating and facilitating professional communication including communication among health care providers and health care providers and the patient. This role contributes to the nurses' professional accountability as well as effective communication (Ghiyasvandian et al., 2014).

Summary

Improving quality and safety of patient care requires improving internal processes that have direct implications for patient care. Nurse and physician communication is one process that hospital leaders might improve as part of improving quality and safety. Nurses and physicians interact with each other on a

regular basis. In a complex health care environment, providers use one or more communication means in every interaction (DeKay, 2012) to include verbal, written, body expressions, or electronic forms (Rabøl et al., 2012).

Several interventions and tools exist to improve NPC. These include the SBAR tool, interdisciplinary bedside rounds, technological systems, and skills building training. Also, some hospital leaders have adapted strategies to enhance NPC, such as the physician director and nurse manager model, the attending nurse model, and the team-centered communication model.

Relational coordination, the study framework, is a combination of relationships, communication, and mutually supporting coordination along dimensions of frequency, timeliness, accuracy, and the problem-solving nature of communication among team members (Gittell et al., 2013). The premise of relational coordination is that the quality of communication and relationships determines the effectiveness of coordination among team members (Cramm & Nieboer, 2012; Hartgerink et al., 2014). In addition, a review of historical and current academic literature around communication dimensions, communication failure and interventions, communication strategies, and relational coordination provided background to support this study. Through restructuring internal operations and processes, administrators might better attain quality and safety of patient care, which is a major element of a hospital's mission.

Transition

In Section 1, I discussed the administrators' role in achieving a hospital's mission and how effective NPC contributes to mission achievement. The specific business problem was some health care administrators lack communication strategies

to guide NPC patterns. Therefore, the purpose of this qualitative, explorative case study was to explore communication strategies health care administrators use to guide NPC patterns. The social implications of this study include providing patients with safe care, improving employee satisfaction, and decreasing health care expenditures (Aiken et al., 2012; Körner et al., 2015; Shekelle et al., 2013). Finally, a review of historical and current academic literature highlighted critical elements in understanding the factors related to NPC, patient safety and care, and managers' roles for hospital mission achievement.

The purpose of Section 2 is to support the chosen qualitative, case study methodology and define parameters for rigor. Section 2 includes a selection of participants, ethical considerations, and data acquisition and analysis. Section 3 includes a discussion of the data, analysis of the findings, and insights for future research.

Section 2: The Project

In Section 1, I introduced the business problem of the study and other background material. Section 2 includes a discussion of the various elements in the research process and in-depth descriptions of the proposed study method, design, and sample. I also discuss the data collection and data analysis process. This section also includes a discussion about ethical research, reliability, and validity.

Purpose Statement

The purpose of this qualitative, explorative case study was to explore communication strategies health care administrators use to guide NPC patterns. The target population included administrators, physicians, and nurses in a medical center associated with a university in the Middle East. Hospital leaders have the responsibility of achieving quality and safety of patient care and financial performance as guided by their hospital missions (Speziale, 2015). Including nurses and physicians in the target population therefore allowed for scrutiny of clinical communication patterns that administrators monitor.

The social change implication of this study may be improved patient care and hospital experience. Improving clinical communication has the potential to improve patient satisfaction by providing patients with a positive experience at the hospital (Radtke, 2013; Twigg & McCullough, 2014). In addition, health care providers may benefit from a more professional and satisfying work environment (Ajeigbe, McNeese-Smith, Phillips, & Leach, 2014; Blake, Leach, Robbins, Pike, & Needleman, 2013).

Role of the Researcher

In qualitative case study research, the primary investigator sets the study protocol (Yin, 2013). I was the main investigator in this study. My role included: (a) analyzing the current literature surrounding communication strategies health care administrators use to guide NPC patterns; (b) constructing interview questions related to the topic; (c) conducting interviews; (d) transcribing, coding, and analyzing the data; (e) presenting emergent themes; and (f) recommending actions and further research.

Qualitative researchers, in relation to their membership to the group under study, may be: (a) peripheral member researchers, (b) active member researchers, and (c) complete member investigators (Adler & Adler, 1987). I did not belong to the participants' group nor participate in group members' core activities. Therefore, I was a peripheral member researcher.

I adhered to the Belmont Report protocol, in accordance with the requirement that in human subject research, investigators must protect participants through abiding by ethical research principles (Gibson, Benson, & Brand, 2013). The Belmont Report includes three components: (a) beneficence, (b) justice, and (c) respect for persons (Greaney et al., 2012). Beneficence is identifying and minimizing potential risks of the study. Justice is the fair distribution of risks and benefits and treating all participants equally (Greaney et al., 2012). Respect is giving potential participants autonomy to decide whether to participate in the study or not (Greaney et al., 2012). Emanuel (2013) recommended asking the participants to sign a written consent containing all the risks and benefits of participation. Therefore, I prepared an informed consent form for all participants to read before participating in the study.

A good investigator is a good listener, adaptive, flexible, and unbiased (Yin, 2013). It is important to treat data without bias to guarantee that the study conclusions are valid and reliable (Denzin, 2012). Using more than one source of evidence mitigates the chances of bias that may happen when the investigator depends on one source of data (Denzin, 2012). To alleviate personal bias, I, therefore, used two sources of data: semistructured interviews and analysis of available hospital policies and procedures related to communication of patient care.

I developed an interview protocol to organize the interviews (Appendix C). An interview protocol is a procedural guide that includes the list of questions that the researcher will use with all the interviewees, the script for what to say before and after the interview, and a script for obtaining informed consent (Jacob & Furgerson, 2012). By using an interview protocol, a researcher can measure participants' insights and views (Marshall & Rossman, 2014). An interview protocol also serves as a checklist of or guide to the information that the researcher needs to collect; using the same guide helps in maximizing the reliability and validity of the interviews (Jacob & Furgerson, 2012; Marshall & Rossman, 2014).

Participants

I enlisted administrators, nurses, and physicians to participate in the study interviews. Including these multiple types of participants was important because multiple data sources help in establishing a deep assessment and exploration of the case within its context (Creswell, Hanson, Plano, & Morales, 2007). Qualitative researchers select participants based on the phenomenon under study (Moustakas, 1994). Qualitative researchers purposefully select the study participants that best help them investigate the research question (Yin, 2013). The eligibility criteria for this

study's respondents included conditions intended ensure participants have the necessary knowledge and experience to provide data to answer the research question. These criteria for the administrators included: (a) being currently employed by the targeted medical center, (b) being knowledgeable of or have experience with communication strategies health care administrators use to guide NPC patterns, and (c) occupying one of the following positions: chief executive officer, medical director, nursing director, nurse manager, or associate medical director of operations.

The eligibility criteria for nurses included being: (a) currently employed by the targeted medical center, (b) employed for a minimum of 1 year as a registered nurse on an inpatient unit at the targeted medical center, and (c) knowledgeable of or have experience with communication strategies health care administrators use to guide NPC patterns. The eligibility criteria for physicians included being: (a) currently employed by the targeted medical center, (b) employed for a minimum of 3 years as physician on inpatient unit at the targeted medical center, and (c) knowledgeable of or have experience with communication strategies health care administrators use to guide NPC patterns. The selection of administrators, nurses, and physicians who were experienced in NPC led to rich data for analysis.

Researchers have an obligation to protect human rights (Raudonis, 1992). Researchers must take several steps not to cross ethical boundaries (Gibson et al., 2013). To begin this research, approvals from the research site and Walden's Institutional Review Boards (IRB) were secured (Walden University's IRB approval #: 09-26-16-0304112). I first obtained the hospital IRB approval and then incorporated that permission in an e-mail to Walden University's IRB. These approvals authorized me to begin the recruiting process. I sent e-mails to

administrators, nurses, and physicians including invitations to participate in the interviews with a brief description of the study purpose and procedure (Appendices D, E, & F) and a copy of the informed consent form.

Sending invitations by e-mail assists potential participants in exercising their rights to be autonomous in accepting or refusing participation (Orb, Eisenhauer, & Wynaden, 2001). I therefore presented the medical center and Walden's IRB approvals to the hospital's human resources department as an authorization to request the names and contact details of the administrators I intended to interview. I sent the preselected administrators e-mail invitations to participate in the interviews (Appendix D). In coordination with the hospital's IRB office and its human resources and information technology departments, I sent invitation e-mails to a sample of the nurses and physicians' population (Appendices E & F).

Instituting an effective working relationship with the interviewees is crucial for valid data collection (Yin, 2013) It is important to establish trust and respect between researchers and participants (Holloway & Wheeler, 2013) because this trust-based relationship contributes to building integrity with participants (Culver, Gilbert, & Sparkes, 2012). To achieve this step, I exhibited a professional demeanor. I dressed and acted in a professional and courteous manner to make the participants comfortable. Before starting the interview, I introduced myself and explained the expectations and desired outcomes of the study. I also asked the respondents whether they had any questions or concerns before starting the interview. I used neutral body language and did not communicate any judgmental comments or gestures during the interviews. This step aligned with Bloomer, Cross, Endacott, O'Connor, and Moss's

(2012) recommendation that a researcher maintain a neutral role during an interview so as to not to bias interviewee responses.

Research Method and Design

Researchers use quantitative, qualitative, and mixed methodologies in designing their research (O'Leary, 2013). Each research method is viable for certain types of investigations and has its strengths and weaknesses (O'Leary, 2013). For the purpose of this study, I chose a qualitative methodology and explorative case study design.

Research Method

The purpose of this qualitative, explorative case study was to explore strategies administrators use to guide NPC patterns. For this purpose, I used a qualitative methodology to study the participants' experiences, beliefs, and viewpoints related to this topic. The qualitative approach allows investigators to understand participants' insights and views (Montero-Marín et al., 2013). Researchers have previously used qualitative methodologies to examine similar topics to my study. For example, Manojlovich et al. (2014) used multiple qualitative methods to study communication patterns between nurses and physicians on medical-surgical units. Zwarenstein et al. (2013) also utilized qualitative methods to study the collaboration between nurses and physicians in a general medicine ward.

Researchers use quantitative methods to examine hypotheses and test relationships between variables (Frels & Onweugbuzie, 2013). In quantitative research, the researcher sets a hypothesis and quantifies the results through surveys to investigate if the preconceived null hypothesis is right or wrong (Frels & Onweugbuzie, 2013). The intent of this study was not testing a hypothesis, but rather

exploring patterns of a phenomenon. Therefore, a quantitative methodology did not meet the purpose of this study. In mixed methods, researchers combine both quantitative and qualitative methods within a study (O'Leary, 2013). Researchers use mixed methods to support quantified data with qualitative cases. Mixed method research provides a profound insight into the topic (O'Leary, 2013). However, the purpose of this study was to explore a research phenomenon and not to support quantified data through qualitative research. Therefore, mixed methods research did not serve the intent of this study in this case.

Research Design

To answer the research question, I used an exploratory single case study design. Qualitative designs include ethnography, phenomenology, narrative, and case study designs (Wägar, 2012). Ethnography is studying specific cultures longitudinally using mainly interviews and observations (Wägar, 2012). An ethnographic study was not appropriate for this study because of implementation constraints related to time and resources.

Phenomenology is used for research questions that focus on describing personal experiences about a phenomenon (Creswell et al., 2007). Phenomenological researchers interpret data related to individuals' experiences and use them in making recommendations for action and future research (Moustakas, 1994). The study can benefit from personal experiences' data collection. However, phenomenology was not the best option for this study because a detailed insight into the experiences of individuals working for one institution was needed. The narrative research design consists of studying the lives of the participants through reporting their personal experiences (Barusch, 2012). Narrative research did not support the goal of this

research, as my purpose was not to study the lives of the participants, but a certain phenomenon occurring in a certain context.

An exploratory single case study design was the most appropriate for answering the research question. Case study research designs enlighten professional practice. Researchers rely on case studies as a method for making evidence-informed policies (Baxter & Jack, 2008). Researchers use case study design when answering questions about a process in a phenomenon (Yin, 2013). In case study research, investigators intensely explore participants' practices and behaviors in a real context (Yin, 2013). Yin (2013) described three discrete categories of case studies: descriptive, explanatory, or exploratory.

The aim of my study was not to examine the correlation between variables or events. The goal of my study was rather to explore a phenomenon with indistinctive processes. In descriptive case study research, the researcher focuses on propositions about a phenomenon and inspects them during the procedure of the research. In explanatory case studies, the researcher explains the causal relationships used to develop a theory (Yin, 2013). In exploratory case study, the researcher investigates a certain phenomenon when there are minimal previous studies on the topic (Yin, 2013). Therefore, exploratory single case study design was suitable for the study.

There are other types of case study designs such as the historical and intrinsic designs (Creswell et al., 2007). Historical case study research is used to interpret the historical events (Hancock & Algozzine, 2011). Researchers use intrinsic research to understand specific situations (Baxter & Jack, 2008). Intrinsic research design does not support generalization of findings (Stake, 1995). I chose the exploratory design to explore a phenomenon with indistinctive processes and outcomes.

I did not need to conduct additional interviews with nurses and physicians to reach data saturation. Data saturation occurs when researchers are not able to acquire new emerging themes from data collection (O'Reilly & Parker, 2012). In purposive sampling, the sample size is determined by the data saturation milestone (Guest, 2006). Member checking also assists in achieving data saturation and ensuring an information-rich case (Marshall & Rossman, 2014). Marshall and Rossman (2014) stated that additional interviews might be required to assure that the researcher achieves data saturation, but data saturation was achieved without this.

Population and Sampling

This study needed specific and diverse participants whose work experience provided information that serve the purpose of the research. Using a purposive sample helps in collecting informative and diverse information contributing to critical data analysis (Montero-Marín et al., 2013). Investigators use their judgment to select participants in purposive sampling (Sangestani & Khatiban, 2013). Purposive sampling allows the researcher to choose the participants who best serve the purpose of the research (Smith, Colombi, & Wirthlin, 2013). Therefore, purposive sampling was appropriate.

The sample consisted of 11 participants: five administrators, three physicians, and three nurses employed at an academic medical center in the Middle East. In qualitative case study research, the sample size is the number of interviews, observations, or events for collecting exemplary information-rich-cases (Sandelowski, 1995). Qualitative data are the subjective opinions of the interviewees (Dworkin, 2012). Qualitative data collected from a purposive sample depend on the participants' experiences and the researchers' critical analysis, rather than on the sample size

(Marshall, Cardon, Poddar, & Fontenot, 2013). However, researchers generally prefer to use a small sample in exploratory interviews (Dworkin, 2012). For example, Rowlands and Callen (2013) conducted semistructured interviews with 22 members of a multidisciplinary cancer care team to explore communication patterns between multidisciplinary health care providers, participants included nurses and physicians, dietitians, pharmacists, psychologists, and social workers. Based on Dworkin (2012) and the purpose of my study, I deemed a sample size of 11 to be appropriate to answer the research question.

Researchers achieve data saturation when they cannot find new emerging themes from the collected data (Fusch & Ness, 2015; O'Reilly & Parker, 2012). If new themes still emerge, investigators might need to add interviews to reach saturation (Marshall & Rossman, 2014). I did not need to interview more administrators, nurses, or physicians because saturation was achieved.

I conducted interviews with administrators, physicians, and nurses. It was important to interview hospital administrators because they are responsible for designing, implementing, and monitoring proper communication processes to ensure quality patient care (Ajeigbe et al., 2014). Furthermore, nurses and physicians are key stakeholders in clinical communication (Limpahan, Baier, Gravenstein, Liebmann, & Gardner, 2013). Interviews should be conducted in a private place to avoid distractions (Turner, 2010). To extract honest and comprehensive responses from participants, similar qualitative studies used private settings to conduct interviews (Grelotti et al., 2013; Yang, 2013). To ensure confidentiality and respondent comfort, interviews with each of the administrators, nurses, and physicians took place in a private office.

Ethical Research

I conducted the research after receiving approvals from the Walden University IRB (approval #: 09-26-16-0304112) and the IRB of the institution at which I conducted the study. I worked to obtain the hospital IRB approval and then submitted the approval paper with the application form to obtain Walden University's IRB approval. The Walden University IRB requires researchers to complete a certificate of ethical research compliance before approving the research. I therefore completed the National Institutes of Health training course *Protecting Human Research Participants* prior to gathering data.

Researchers must take several steps to maintain ethics in research by protecting the research subjects (Gibson et al., 2013). Participants must be informed about the research risks and benefits before consenting to participate (Hancock & Algozzine, 2011). The informed consent procedure is important to ensure that the participants are clearly informed of the purpose and procedure of the study (Festinger, Dugosh, Marlowe, & Clements, 2013). After obtaining the Walden and hospitals' IRB approvals, I sent e-mail invitations (Appendix D) with an attached informed consent form to the administrators after obtaining their names and contact numbers from the human resources department.

I coordinated with the interested administrators to set the interview date and place as per their preference. Because there were several nurse managers, I recruited the first manager to respond to my e-mail. The information technology department and the hospital IRB provided me with a sample of 30 physicians and 30 nurses who meet the eligibility criteria and are considered potential interview participants. I coordinated with the information technology department to send e-mail invitations

(Appendices E & F) with an attached informed consent form to the sample of nurses and physicians. E-mailing the invitation to participate provided the participants with ample time to consider participating in the study and ask for any clarifications. After reviewing the study procedures, interested participants contacted me by e-mail. I coordinated with the first three interested nurses and physicians to set the interview date and place as per the participants' preferences. At the time of data collection, the participants read a printed copy of the informed consent form and verbally agreed to participate in the proposed research. By providing participants the chance to read and consent ahead of time of the interview, potential participants did not feel obliged to take part of the research.

No participants wished to withdraw from the study. Researchers must respect participants' autonomy in withdrawing from the proposed study (Cohen, 2013). Thorpe (2014) respected the research participants' choices to withdraw from the study and did not try to convince them to reconsider their decision. If any of the participants wanted to withdraw from the study, I would not have transcribed any of their interviews. I would also have removed the records (e.g., audio recordings, USB, notes) related to the withdrawing participants.

I did not provide incentives for participation in the study. Providing incentives for potential participants to take part of a study is prevalent (Blumenthal-Barby & Burroughs 2012). Researchers use incentives to improve the response rate to surveys (Bonevski et al., 2014; London, Borasky, & Bhan, 2012). However, as this study depended on collecting data from the preselected participants; I did not provide any incentives for participation.

It is crucial to abide by ethical boundaries to conduct research (Gibson et al., 2013). Participants would act normally or give truthful answers if they know that they will not be identified (Ivey, 2012). To protect the participants' confidentiality, researchers do not disclose any of the participants' names (Pollock, 2012). To maintain the privacy and confidentiality of the participants and the institution, I kept the research data on a locked computer and the hard copies in a locked drawer in my office. I will retain the electronic and printed data for 5 years and then delete it. I did not mention the institution and study participants' names in the published paper.

I used a code for each participant during the interviews. Utilization of the codes keeps the participants' identity anonymous and is helpful in categorizing the data (Yin, 2013). The administrators who are involved in the interviews were assigned research codes starting from I-A-01. The nurses participating in the interviews were assigned research codes starting from I-N-01. The physicians participating in the interviews were assigned research codes starting from I-P-01. I deleted any mentioned names in the transcriptions and referred to them by their titles. I also stored electronic information on a locked computer and hard copies in a locked drawer. Keeping participants' information confidential ensures building a trust-based relationship with the interviewees.

Data Collection Instruments

I was the main research instrument. In qualitative research, researchers depend on their flexibility in collecting and analyzing scientific data (Lincoln & Guba, 1985). I used semistructured interviews in the data collection process while applying the interview protocol (Appendix C).

As recommended by Marshall and Rossman (2014), I used open-ended questions in semistructured interviews to gain insight into each respondent's experience regarding administrators' strategies for guiding NPC patterns. Qualitative research addresses the lived perceptions and experiences of the participants about the phenomenon under study (Miles & Huberman, 1994; Moustakas, 1994). I used the same protocol in every interview, which enhanced the reliability, consistency, and validity of the interview data (Jacob & Furgerson, 2012; Marshall & Rossman, 2014).

To achieve methodological triangulation, I asked for permission to access the hospital's policy manual, which is available to employees, so I could analyze the hospital's policies and procedures. Combining two or more data sources allows for data validation, increases reliability and credibility (Snyder, 2012; Yin, 2013), and assists in identifying relevant themes (Langen et al., 2014). I searched the hospital policy manual for policies relevant to patient care communication strategies. I retrieved, analyzed, and combined the information from the relevant polices with the interview data.

I asked interviewees to check the analyzed data to ensure that the identified themes appeared accurate and credible. Member checking is a process in which the selected participants check the accuracy of the interpretation of the information they provide (Marshall & Rossman, 2014). Investigators allow interviewees to member check the collected and analyzed data to give participants a chance to modify their opinions or add new insights to the research (Baxter & Jack, 2008). Member checking also assists in ensuring trustworthiness in qualitative research (Guba & Lincoln, 1994). Although member checking is sometimes impractical when the analysis is a synthesis of all the collected data (Morse, 2015), I shared my interpretation of the

interviews with the respondents by e-mail to check whether the themes were accurate and credible. None of the respondents recommended changes or additions.

Data Collection Technique

Choosing the appropriate data collection technique ensures valid and reliable data (Frels & Onwuegbuzie, 2013). The primary data collection technique for this study was semistructured interviews. I also analyzed hospital policies and procedures related to communication of patient care as a secondary technique to achieve methodological triangulation. Qualitative researchers use multiple data sources to achieve methodological triangulation (Denzin, 2012). Using at least two sources of evidence in qualitative research, such as interviews and archival documents helps in reducing bias (Perkmann & Schildt, 2015) and validating the data (Canales, 2015).

I conducted semistructured interviews with five administrators, three nurses, and three physicians. Gotlib-Conn, Kenaszchuk, Dainty, Zwarenstein, and Reeves (2014) used semistructured interviews along with observations and surveys to assess communication patterns in medicine wards. Semistructured in-depth interviews are effective for gaining insight into respondents' experiences (Marshall & Rossman, 2014). Semistructured interviews involve predetermined questions with flexibility for the researcher to seek clarification and ask follow-up questions whenever needed (Doody & Noonan, 2013). While adhering to the interview protocol, I rephrased the questions and asked follow-up questions to elicit more comprehensive answers.

I recorded each interview after receiving permission from the respondents in the consent form. Recording interviews helps ensure accurate data for transcription and analysis (Al-Yateem, 2012). I transcribed each recording after each interview. I then reviewed the transcribed text while listening to the recording again. Recording

the interview helps capture missing data and confirm the interview responses (Chenail, 2011; Rabionet, 2011).

I used member checking to ensure the validity of data and accurate clarification of the participants' insights. Member checking assists in ensuring reliability and validity of the data collection process (Guba & Lincoln, 1994; Koelsch, 2013). Member checking helps the researcher to check, explain, or expand the interview data (Harper & Cole, 2012). I sent the interview data interpretation to the respondents by e-mail after the analysis phase to verify thematic accuracy and credibility. None of the respondents had changes or additions.

Data Organization Technique

Data organization assists the researcher in understanding data, answering the research question (Basurto & Speer, 2012; Garcia-Mila, Marti, Gilabert, & Castells, 2014), and increasing the study rigor (Houghton, Casey, Shaw, & Murphy, 2013). Unlike other research methodologies, in case study research, investigators need to continuously organize their data (Hancock & Algozzine, 2011). To organize my data storage, retrieval, and analysis, I transcribed the interviews and stored each transcript in a Microsoft Word document. I removed participant identifiable information and uploaded each document into QSR NVivo. Computer software assists in transcribing, organizing, journaling, and analyzing research data (Gibson, Webb, & Lehn, 2014; Myers & Lampropoulou, 2013). I stored the interview recordings, transcripts, and archival documents in labeled folders.

I used a notebook to record interview data. I also recorded the participants' responses. Recording the participants' responses helps in coding and organizing the data during data analysis (Gelshorn, 2012; Tessier, 2012). I also used the interview

notes in a research log throughout the data collection process. A researcher uses a research log to help identify thematic data (Wagstaff, Hanton, & Fletcher, 2013) and ensure study rigor (Yin, 2013). In addition, using a research log contributes to refecting on challenges the researcher may face (Georgiou, Marks, Braithwaite, & Westbrook, 2013).

I kept the transcribed data in a password-protected laptop and retained hard copies in a locked cabinet at my office. When conducting studies on human subjects, researchers must protect the participants' privacy and confidentiality (Wolf, Patel, Williams, Austin, & Dame, 2013). McDermid, Peters, Jackson, and Daly (2014) argued that collecting data from peers and colleagues requires aggressive confidentiality measures. I used codes to identify the participants and transcripts. According to Muddyman, Smee, Griffin, and Kaye (2013), using unique identifiers ensures that researchers will not disclose participants' identity in the study. I will store these data in both electronic and paper format in a safe place solely accessible by me for 5 years. I will retain the electronic and printed data for 5 years.

Data Analysis

Choosing the best data analysis process is crucial for enhancing the study rigor (Basurto & Speer, 2012; Houghton et al., 2013). Rigor is established by organizing and converting raw data into themes (Tracy, 2012). Data analysis includes identifying themes from the collected data (Yin, 2013).

I transcribed the recordings and transferred the notes using Microsoft Word. After data collection and transcript review, I uploaded, organized, and analyzed the data using QSR NVivo. The aim of data analysis is to evaluate the themes and patterns that emerge during the data collection (Yin, 2013). QSR NVivo, like other

qualitative data analysis software, is used for data collection, management, and analysis (Woods, Paulus, Atkins, & Macklin, 2015). Scholars use QSR NVivo to organize data for in-depth evaluation of emergent themes and triangulation of data (Edwards-Jones, 2014).

Methodological triangulation helps researchers identify themes from different sources, which improves the integrity of conclusions (Denzin, 2012). Triangulation involves examining several types of data to achieve a comprehensive understanding of the phenomenon (Guion, Diehl, & McDonald, 2013). Triangulation is achieved through using several data sources, data collection methods, data collectors, data collection points, or theories (Denzin & Lincoln, 2011). I used methodological triangulation to identify themes across two data sources: interviews and interpretation of communication-related hospital policies and procedures. Methodological triangulation helped in assessing, interpreting, and making conclusions from the collected information.

I coded and categorized the data by sources such as interviews and archived hospital documents. Information coding and categorization allows for efficient arrangement of data (Basurto & Speer, 2012). Data coding helps in organizing, comparing, and analyzing the collected data for extraction of meaningful themes (Gale, Heath, Cameron, Rashid, & Redwood, 2013). Bishop and Lexchin (2013) recommended gathering information into themes during data analysis.

After sorting and categorizing the coded data, I worked to identify themes using QSR NVivo. The emergent themes included the following categories: (a) frequency of communication, (b) timeliness of communication, (c) accuracy of communication, and (d) the problem-solving nature of communication. These themes

represent components of successful NPC based on the relational coordination model used to frame the study. The themes provided an explanation of how effective strategies guide NPC patterns. Relational coordination is a process in which team members use communication and relationships to integrate tasks (Gittell et al., 2013). Relational coordination is a network of communication and relationship ties among work groups involved in the same work processes (Gittell et al., 2013; Hartgerink et al., 2014). The frequency and timeliness of the communication keep participants updated on patient care. Also, the accuracy of information and the problem-solving approach of the communication prevent errors and delays (Gittell et al., 2013; Havens et al., 2010).

The study approach, design, and process contribute to the reliability and validity of the results (Lewis, 2015). Based on the emerging data trends from the interviews and the archived hospital documents, I captured themes and compared them with recent publications about the topic, following the relational coordination model. Recent studies (Hartgerink et al., 2014; Havens et al., 2010) indicated communication models based on clinical communication themes include the type of nurse-physician interactions, the context of interaction, the content of interaction, and the relationship between communicators (Figure 2).

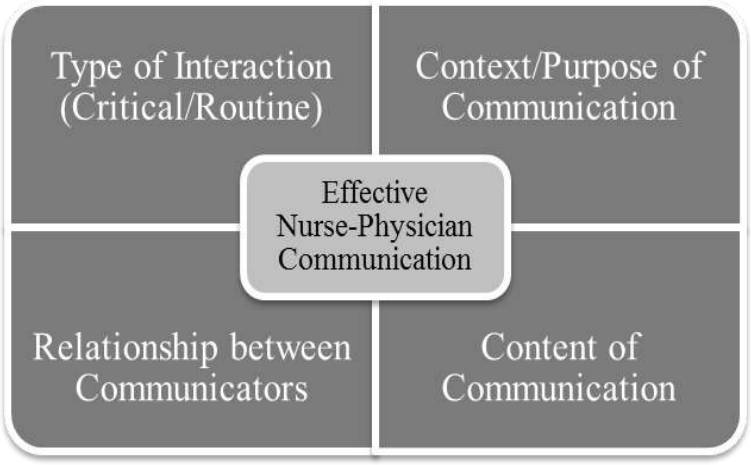

Figure 2. Pillars of effective Nurse-Physician Communication.

Reliability and Validity

Evaluation of qualitative research rigor is important yet controversial. Choosing a suitable data collection method ensures the accuracy of data and study conclusions (Frels & Onwuegbuzie, 2013). It also promotes the reliability and validity of the study (Lougee, Johnston, & Thomson, 2013). By guaranteeing the study rigor, the researcher can ensure trust in the research and its findings. This concept is referred to as trustworthiness of the study (Elo et al., 2014).

Reliability

The change in the context and the participants, as well as the passage of time, will prevent qualitative research from being repeated. Furthermore, qualitative data analysis constantly changes. Dependability is the extent to which a study can be repeated, and variations within the study understood (Lougee et al., 2013). Researchers must consider the constant changes in the circumstances of the research (Guba & Lincoln, 1994). Dependability is one of the criteria for judging the reliability and trustworthiness of qualitative research (Marshall & Rossman, 2014). Dependability is achieved using member checking and triangulation (Guba &

Lincoln, 1994). Interviewees checked the analyzed data to ensure accurate explanation of the information they provided. Following each interview, I reviewed and interpreted the interview transcripts, and I asked each interviewee to review the synthesis and check whether the information was accurate or if any additional information was needed. I used methodological triangulation to identify themes across two data sources: interviews and archival documents. Triangulation helps in assessing, interpreting, and making conclusions from the information collected and consequently guaranteeing reliability. Another way of achieving reliability of the data collection instruments is using an interview protocol that serves as a secondary instrument throughout the interviews with all participants (Perkins, Burton, Dray, & Elcock, 2013). I used the same protocol in all interviews to ensure that the interviews were reliable.

Validity

Personal bias and inconsistent processes threaten the internal validity of the study. These issues can reduce the confirmability and credibility of the study. Confirmability is the extent of which the results are reflective of actual data retrieved versus researcher bias and is determined by the extent of which participants trust the study findings (Cope, 2014). Confirmability is one of the criteria that determined the internal validity of the study. Credibility is guaranteed by member checking and triangulation where the study participants accurately assess and validate the retrieved data (Guba & Lincoln, 1994; Lougee et al., 2013).

Although case study methodology depends heavily on the context and the time of the study, transferability of the study is one criterion for judging external validity (Marshall & Rossman, 2014). Transferability is the degree to which the findings can

be transferred to other settings or applied with other participants (Guba & Lincoln, 1994; Lougee et al., 2013). Transferability is dependent on the study's credibility, which is guaranteed by member checking and triangulation (Lougee et al., 2013).

Methodological triangulation is established by combining two or more information sources (Denzin & Lincoln, 2011). Triangulation helps in confirming findings, providing complete data, and increasing study validity (Bekhet & Zauszniewski, 2012). In this study, I incorporated interviews and hospital policies and procedures interpretation to alleviate the chances of bias.

Theoretical data saturation occurs when no new themes can be retrieved from the data regarding the phenomenon being investigated (Ando, Cousins, & Young, 2014). Marshall and Rossman (2014) stated that researchers might require additional data to achieve saturation. Therefore, reaching a point where there is a lack of new data themes is crucial to ensure that the researcher has covered the research topic comprehensively, and hence ensure study validity. Data saturation occurs when no new data or themes appear (O'Reilly & Parker, 2012). As data saturation occurs, the researcher reaches the same results when the study is replicated (O'Reilly & Parker, 2012). Therefore, I ensured that data saturation existed before completing my exploration of NPC. Conducting additional interviews was not needed.

Transition and Summary

In Section 2, I discussed my role as a researcher and the purposive sampling strategy. I also outlined the use of qualitative case study research as the appropriate design and method. Then, I explained the utilization of semistructured interviews and archival document analysis as the two data collection techniques that improved the study rigor. I discussed using the QSR NVivo and Microsoft Word in data

organization and analysis to extract NPC themes based on the relational coordination model. For reliability and validity, I summarized the methods for ensuring rigor in the study. Section 3 includes data findings with my interpretations, analysis, and presentation of key themes. I related my findings to the relational coordination model that conceptually frames the study and current literature to provide the (a) study conclusions, (b) application to professional practice, (c) implications for social change, and (d) personal recommendations.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative, explorative single case study was to explore communication strategies health care administrators use to guide NPC patterns. The study data were collected using semistructured interviews with administrators, nurses, and physicians at a medical center in the Middle East. Open-ended interview questions permitted addressing the research question through an in-depth exploration of the participants' views and experiences (Montero-Marín et al., 2013). The hospital policy manual served as a secondary data source. The findings showed several different strategies that health care administrators at the study site used to guide NPC patterns to promote quality and safety of patient care. In addition, the findings included the effectiveness of these strategies.

After I transcribed the interviews, methodological triangulation assisted in analyzing and extracting different themes from the two data sources. Four core themes emerged from analyzing the interview data and the communication-related hospital policies. The derived themes were: (a) nurses' empowerment, (b) nurses and physicians' accountability, (c) multidisciplinary care delivery, and (d) mutual respect. These themes pertained to the different strategies hospital administrators use to guide NPC patterns.

Presentation of the Findings

The research question of the study was: What communication strategies do health care administrators use to guide NPC patterns? Each group of participants responded to a different but aligned set of interview questions based on the respondents' unique roles in the medical facility. Based on the research question,

analysis of the participants' responses, and the hospital's communication policies via QSR NVivo revealed 12 subthemes. I further grouped the subthemes into four main themes depending on their occurrence and relevance to the main themes. Exploration of the themes and subthemes resulted in extracting strategies hospital administrators used to guide NPC patterns. The findings correlated with the study's conceptual framework, relational coordination, and previous literature on the topic.

Theme 1: Nurses' Empowerment

The first main theme was nurses' empowerment. This theme is the parent of four subthemes that emerged from participants' responses. Table 1 shows the frequency and percentages of occurrence of the four subthemes in the administrators, nurses, and physicians' responses. The exploration and analysis of the subthemes helped identify strategies administrators use to guide NPC patterns.

Table 1

Frequency and Percentages of the Four Subcategories Under Nurses' Empowerment Theme

Nurses' empowerment	*n*	Frequency of occurrence
Nurses' knowledge and experience	17	26.2%
Hierarchical relationships	15	23.1%
Physician communication preferences	13	20.0%
Nurses' workload	11	16.9%

The five interviewed administrators at the selected medical center agreed that empowering nurses is a major prerequisite for guiding effective communication and collaboration among health care team members. Regan, Laschinger, and Wong (2015) found that structural empowerment of nurses is a significant predictor of interprofessional communication and collaboration. The nurses' empowerment theme

appeared across all administrators' responses. Interview data analysis validated that nurses' empowerment was one of the administrators' major concerns. However, administrators and nurses had different views about nurses' empowerment. For example, administrator I-A-01 noted "Nurses are encouraged to say their opinions openly more than the doctors. Doctors sometimes think that we listen to the nurses more than we listen to them. Nurses are very empowered at this hospital."

None of the interviewed physicians commented on nurses' empowerment in their responses. However, the nurses themselves did not feel empowered. For instance, nurse I-N-01 noted:

> Sometimes, the doctors blame the nurses for wrong decisions that the physicians make. In one incident, the hospitalist checked the creatinine level with the nurse and decided to send the patient to imaging. When the hospitalist was blamed for sending the patient, she said that the nurse sent the patient without consulting her.

Administrators were able to support the theme by providing examples of nurses' empowerment. Administrator I-A-05 noted, "there was a patient's case in which the medical team agreed with the patient's family members that the patient would not be resuscitated if his condition deteriorated. However, there was no written document that verified that the family members agreed on the decision. This put the hospital under legal liabilities. The nurse secured the document by communicating the issue to the primary physician and the hospital administration. This incident prevented a foreseen error and helped the nurse in maintaining a good relationship with the doctor." Some studies in the literature confirm this finding. For example, Law and Chan (2015) mentioned that nurses' empowerment improves nurses' relationship with

coworkers. Okuyama et al. (2014) also noted that prohibiting nurses from openly expressing their opinions is one of the contributing factors to communication errors.

As a result of the interview data analysis, four subthemes related to nurses' empowerment emerged. These subthemes were nurses' knowledge and experience, hierarchical relationships, physician communication preference, and nurses' workload. Exploration and analysis of the subthemes revealed the strategies that administrators used to guide NPC patterns. I also explored the effectiveness of the existing strategies and recommended new strategies based on the participants' responses and evidence-based studies.

Nurses' knowledge and experience. The first subtheme underlying nurses' empowerment was nurses' knowledge and experience. Administrator respondents suggested that deficiencies in nurses' knowledge and experience was a major barrier to nurses' empowerment and subsequently effective communication. Administrators' interview data analysis verified that nurses cannot be empowered if they are not knowledgeable. Therefore, administrators strived to enhance nurses' knowledge and experience as a strategy to guide NPC.

Enhancing nurses' knowledge and experience is directly associated with relational coordination. Shared knowledge is one the three elements that constitutes relationships in relational coordination (Gittell et al., 2013). It is essential that nurses and physicians share the same knowledge and experience to communicate effectively. This was supported by administrator I-A-02's statement that "having shared knowledge with the physicians regarding patient cases is a requirement for nurses' empowerment and effective communication." Administrator I-A-03 also noted:

> Knowledge of nurses is very important. If the nurses are not knowledgeable or are negligent, physicians will not seek their opinion. If nurses feel that their opinion is not heard, they will not give it. The nurse will end up, carrying a wrong order because she doesn't feel knowledgeable and confident enough to communicate her opinion. This will cause errors and patient harm.

The hospital administrators acknowledged that their nurses were not as knowledgeable and experienced as many of their physicians. Therefore, they recognized the need for enhancing nurses' knowledge and experience as a strategy to improve team communication. To achieve this strategy, the hospital administrators took several actions. These actions included setting criteria for recruiting knowledgeable and experienced nurses, engaging nurses in continuing education programs, and introducing the role of the advanced practice nurse to educate nurses about the standards of care. Administrator I-A-02 discussed standardizing nurses' recruitment criteria and educating already recruited nurses as measures to enhance nurses' knowledge and experience, noting:

> We believe that enhancing the knowledge and experience of our nurses will improve communication among the health care providers. However, not all nurses in [redacted] graduate with the same level of knowledge. Also, we need experienced nurses in some wards. Therefore, we have set criteria for recruiting knowledgeable and experienced nurses only. In addition, we are doing our best to give all nurses the same education. We have prepared continuous education programs in coordination with our physicians for our nurses.

As administrator I-A-03 noted, the administration introduced an advanced practice nurse to educate their nurses about standards of care and continuously evaluate their knowledge, and set the manuals of standards of care in coordination with the doctors. The advanced practice nurse ensures the quality of health care delivery by enhancing the knowledge and practice of registered nurses (Sun et al., 2015). Hiring an advanced practice nurse is intended to give nurses and physicians shared guidelines about standards of patient care.

Contrary to the administrators' perceptions about the importance of nurses' knowledge and experience in improving team communication, nurses' interview responses did not reflect this strategy. The nurses in this study did not recognize knowledge and experience as either a challenge or a facilitator to achieving effective communication, and none of the nurses' responses included this strategy. On the other hand, physicians identified the deficiency in nurses' experience as a barrier to communication. For example, physician I-P-02 stated:

> We also have a lot of junior nurses. With experience, the nurses would know how to judge the situation better. The approach of the junior nurses is different from the approach of senior nurses. I remember one case where a senior nurse was able to save a patient's life because she knew how to judge the situation and communicate effectively with the doctors.

This finding of the importance of nurses' knowledge and experience in improving team communication is supported by that in recent studies. This finding was similar to Sayre et al.'s (2012) finding that giving educational sessions to nurses increased their ability to communicate patient safety issues to their managers and other team members. Kuokkanen et al. (2014) similarly found that nurses with higher

educational levels can better express themselves and express higher empowerment levels. Boamah and Laschinger (2015) also suggested that giving the nurses the opportunity to grow academically and professionally is essential for work efficiency. Therefore, enhancing nurses' knowledge and experience is an effective strategy in guiding NPC.

Hierarchical relationships. The second subtheme that fell under nurses' empowerment was hierarchical relationships. Hierarchy-based interactions are barriers to communication (Hollenbeck et al., 2012; Johnson & Kring, 2012; Nair et al., 2012; Rowlands & Callen, 2013). Interview data analysis revealed that the hospital administrators acknowledged the historically existent hierarchical relationships between nurses and physicians. Therefore, the administrators adopted the team-centered communication as a strategy to overcome the hierarchies and improve communication within the health care teams. Administrator I-A-01 stressed the importance of transforming the dialog from a status-based communication to a team-centered communication. Administrator I-A-03 also emphasized:

> Nurses and physicians should perceive each other as partners in health care. Nurses and physicians are both equally essential contributors to patient care delivery. When nurses and physicians use team-centered communication and eliminate hierarchical relationships, communication will more easily flow.

Administrators engaged nurses and physicians in meetings to promote team-centered communication and eliminate the hierarchical interactions among team members. In the joint meetings, nurses and physicians' representatives discussed possible team-centered approaches for patient related conversations. Administrator I-A-05 also stated:

> Our nurses and physicians participated in meetings and discussed approaches in which they can communicate with each other as equal partners of the health care team. The aim of these meetings is to transform the nurses and physicians' conversations from giving and receiving of orders to an interactive discussion of patients' cases and care plans.

Although the administrators had adopted the team-centered communication strategy, nurses considered that hierarchical interactions still exist. Analysis of nurses' responses reflected the status-based communication model that was mentioned by Matzke et al. (2014) as discouraging constructive criticism, reducing teamwork, and promoting hierarchical relationships between team members. In addition, all interviewed nurses considered the existent hierarchical relationships as a major challenge that impeded effective communication with physicians. For example, nurse I-N-01 noted:

> Communication affects our work. There are always communication issues with the doctors. However, we as nurses, do not argue with the doctor. The nurse has to understand the character of the doctor. The physicians do not understand the workload of the nurse. The physician comes in and wants to finish his task at the moment. Sometimes the physician is angry. The nurse needs to be flexible with the physician.

Although hierarchical relationships impede effective communication (Matzke et al., 2014) and the hospital administrators in this study had adopted the team-centered communication approach to guide nurse-physician interactions, the physicians in this study did not comment on hierarchical interactions when asked about the challenges or facilitators of communication. This finding suggests the need

for a more dynamic method of implementing and promoting the team-centered communication model. As physicians are not aware of the problem, administrators may consider promoting team-centered communication through awareness campaigns and communication skills sessions. Rosentstein (2012) suggested a multidirectional approach to improving physicians' communication skills such as communication skills sessions, raising awareness, and addressing noncompliance events.

Physicians' communication preferences. The third emergent subtheme under nurses' empowerment was physicians' communication preferences. This subtheme was mainly extracted from nurses and physicians' responses. Nurses emphasized that communicating routine messages with the physicians is dependent on the physicians' communication preferences. For example, nurse I-N-03 stated "there is no rule for communicating a routine message. It depends upon the doctor. Each doctor has his way of dealing with the nurses." Nurse I-N-02 noted:

> Each doctor has his way of communicating with us. We got used to their various preferences. Some doctors want us to call them at night to tell them about their patients. Other doctors prefer that we keep the information till the morning.

The physicians' responses validated this subtheme. Physicians revealed that the doctors had individualized trends of communication with nurses. Physician I-P-02 said "I prefer that the nurses communicate every detail of the patient's updates with me even if in the middle of the night," whereas physician I-P-03 said, "if it is not important, I prefer that they wait until the morning to talk to me." Quan et al. (2013) argued that nurses and physicians may perceive the levels of urgency of situations differently. Both nurses and physicians agreed that a patient asking for information

from a physician is not an emergency. However, nurses perceived this issue as highly urgent because the patient verbalized dissatisfaction, whereas, physicians thought that the patient could wait for them (Quan et al., 2013). The many physicians' different communication preferences and the difference in perceiving the levels of urgency between nurses and physicians may cause communication breakdowns.

As noted in nurses and physicians' comments, nurses need to follow the various preferences of the doctors regarding the methods, timings, and reasons of the communication. Administrators did not mention any strategies that guide such regular communications between nurses and physicians. The lack of strategies that guide routine communication can reduce the nurses' efficiency. Nurse I-N-03 mentioned, "the fact that we have to think how and when each doctor prefers to be contacted is overwhelming to us as nurses." The various physician preferences and the absence of specific guidelines to structure communication cause ambiguity. The data related to this subtheme is suggestive of the need for structuring routine communication through setting specific guidelines.

Nurses' workload. Nurses' workload is the fourth subtheme underlying nurses' empowerment. Administrators recognized the need to regulate workload to improve nurses' communication with other health care providers. Therefore, they adopted adjusting nurses' workload as a strategy to guide NPC. Administrator I-A-03 considered that adjusting nurses' workload is very important for improving efficiency and maintaining healthy relationships with other team members. Administrator I-A-03 stated that the administrators were setting staffing plans to adjust workload and consequently improve the nurses' ability to communicate patient-related information efficiently with other health care providers. The need for adjusting nurses' workload

was confirmed by the nurses' responses as they considered that their heavy workload affected their ability to communicate efficiently. They also related some miscommunications to the fact that physicians sometimes do not realize the extensive work of nurses. For example, nurse I-N-01 noted:

> Communication affects our work. However, it is not always good communication with the physicians. It depends on the workload. Sometimes, we are overwhelmed and do not have time to do our work. Physicians do not understand the workload of the nurse. Physicians want to finish their tasks at the moment. Nurses need to be flexible with the physician regardless of their workload.

Administrator I-A-05 stated that communicating effectively can also lead to workload adjustment by decreasing double work resulting from miscommunications. This finding confirms discoveries in the literature. A 2016 study showed that nurses' having an appropriate workload improved team efficiency and communication (Green, Darbyshire, Adams, & Jackson, 2016). Other studies also covered how effective communication improved nurses' job conditions including workload (Ajeigbe et al., 2014; Blake et al., 2013; Rimmerman, 2013; Sharma & Klocke, 2014). On the other hand, the physician respondents in this study did not mention adjusting nurses' workload as a strategy to improve communication. None of the doctors mentioned nurses' workload as a major factor in achieving effective team communication.

Theme 2: Nurses and Physicians' Accountability

The second main theme was nurses and physicians' accountability. This theme is the parent of three subthemes that emerged from analysis of interview data and

medical center's policy manual. The three subthemes were communication policies, error reporting system, and patient-centered care. Table 2 shows the frequency and percentages of occurrence of the three subthemes in the administrators, nurses, and physicians' responses.

Table 2

Frequency and Percentages of the Three Subcategories Under Nurses and Physicians' Accountability Theme

Nurses and physicians' accountability	*n*	Frequency of occurrence
Communication policies	22	40.7%
Error reporting system	19	35.2%
Patient-centered care	13	24.1%

Nurses and physicians' accountability emerged as a major theme in the analysis of the interview data. Analysis of the hospital policy manual supported the nurses and physicians' accountability theme. Administrators considered that holding nurses and physicians accountable for their work is a key strategy that guides their communication. This discovery supported the existing literature as many studies in various settings concluded that NPC affects the quality of care and patient safety (Crawford et al., 2012; James, 2013; Johnson & Kring, 2012; O'Leary et al., 2013). As health care team members are held accountable for patient safety, they are responsible for patient-related communications. Therefore, nurses and physicians are responsible for the messages they communicate to each other, whether verbal or written, to ensure quality of care and patient safety.

Communication policies. As a result of the subtheme underlying nurses and physicians' accountability, setting communication policies was a recognized strategy. As the medical center was accredited by the Joint Commission on Accreditation, the

administrators had set specific communication policies such as handoff procedures, writing progress notes, writing medical orders, and communicating urgent issues. The administrators considered that setting clear expectations for the staff would ensure their accountability. For example, administrator I-A-03 noted:

> When we set specific roles and put clear expectations from both nurses and physicians, we will hold them accountable for what they say and for their actions. For example, we have clearly delineated the physical assessment, the medical order, and the consent form done by physicians. What is the time frame for them to include that in the chart? Same story applies to nurses and other health care providers. These are all formal types of communication that are clearly delineated through policies.

Setting communication policies relates to relational coordination through three dimensions: timeliness, accuracy, and shared goals (Gittell et al., 2013). In a multifaceted work environment, such as inpatient care, timely and accurate communication contributes to achieving safety and efficiency of the work process (Rundall et al., 2015). Timeliness and accuracy of the communication were evident topics in the communication policies in the hospital's policy manual. For example, the integrated care plan is a written form of communicating patient information. Health care providers should complete the integrated care plan within the first 24 hours of patient admission.

Although administrators set policies to guide specific communications, nurses and physicians considered that communicating accurate and timely messages does not always happen. Nurses considered that physicians sometimes communicate inaccurate information that may cause medical errors. Nurse I-N-03 stated "doctors might give

us a wrong message. They do not give us the name of the patient. They give us the room number, which might cause errors." Similarly, physicians blame the nurses for failing to deliver accurate and timely messages. Physician I-P-02 noted:

> Something happened at the night. The nurse considered it as unimportant and didn't inform me. But, I need to know about the updates in a timely manner. Another thing, the messages should be accurate. For example, 80% is 80%, not normal or abnormal. Vague messages can result in errors.

Incorporating communication standards within the hospital policies is essential. Setting standardized communication protocols was one of the communication interventions mentioned in the literature (Salas & Rosen, 2013). Ambiguous specification of responsibilities results in incomplete NPC (Grandoa et al., 2011). Although hospital administrators set communication policies to structure specific communications, nurses and physicians' inputs suggest a need for reevaluating staffs' compliance to these policies. Moreover, administrators may benefit from applying SBAR. SBAR is a tool for structuring communication in which communicators have to describe the situation, background, assessment, and recommendation (Sears et al., 2014; Vardaman et al., 2012). SBAR may help in overcoming challenges of accuracy and timeliness described by the nurses and physicians. Therefore, administrators may consider integrating SBAR within the policy manual.

Error reporting system. Under the nurses and physicians' accountability, administrators acknowledged that error reporting systems were essential. The strategy currently in use is the Occurrence Variance Reporting (OVR) system. The literature supported the use of error reporting systems. Hohenstein (2016) identified the root

causes of errors through implementing an error reporting system in Germany. Causes of errors were all related to a failure in communication in some way (Hohenstein, 2016). Zaheer, Ginsburg, Chuang, and Grace (2015) noted that ease in reporting an error improves communication. Similarly, the hospital administrators considered that implementing a proper error reporting system improves communication by identifying the causes of communication failures and working to eliminate them. As administrator I-A-05 noted:

> We have the OVR system. The nurse or the physician can report mistakes to us through the OVR. The error reporting system can help us identify the causes of the errors, so we work on them in our performance improvement projects. Most of the errors are communication-related. When we identify the reason for communication failure, we can work to prevent it for the next time.

The relational coordination model includes the problem-solving approach as an element of communication (Tietbohl et al., 2015). Implementation of an error reporting system is a means of solving a problem. Therefore, this strategy correlates with relational coordination. In addition, nurses verified the application of this strategy in their responses. Nurse I-N-02 mentioned that all the health care providers in the hospital can use the OVR system to report errors and incidents related to patient care. Nurse I-N-01 recognized the importance of the OVR system as a method of identifying and preventing future occurrences of miscommunications. Physicians were also aware of the system. Physician I-P-02 used the system to report a medical error caused by miscommunication of patient information. Nurses and physicians' verification of the system proves the proper implementation and effectiveness of setting the error reporting system as a strategy to guide communication.

Patient-centered care. The third subtheme underlying nurses and physicians' accountability is patient-centered care. When team members share the same goals, coordination is enhanced (Ainsworth et al., 2013). Patient-centered care is related to relational coordination as having a shared goal is one of the major elements in achieving efficient communication and coordination of care (Gittell et al., 2013). Specifically, multidisciplinary heath care providers share patient care as an ultimate goal (Ainsworth et al., 2013). Patient-centered care did not appear directly in the nurses and physicians' responses. However, administrators adopted the patient-centered care model by which health care providers work collaboratively for patient care as a strategy to guide NPC. Administrator I-A-01 stated "we have adopted the patient-centered care model to guide communication patterns among health care team members. We believe that the patient is the purpose and center of communications of our professionals." Administrator I-A-03 also noted:

> If nurses and physicians are joined by a common goal (patient care), both assume their responsibilities and accountabilities as per the professional role, and both have respect for the other stakeholders as essential contributors in the health care team, communication will flow easily.

Although administrators have adopted patient-centered care as a strategy to improve NPC, none of the nurses or physicians' comments included patient-centered care as a strategy. Therefore, this strategy may need to be reevaluated and reinforced by the administrators.

Theme 3: Multidisciplinary Care Delivery

The third main theme was multidisciplinary care delivery. Multidisciplinary care delivery is a parent theme of three subthemes: multidisciplinary rounds,

integrated medical records, and multidisciplinary meetings. These three subthemes also related to the strategies in use.

The hospital administrators used multidisciplinary care delivery to achieve effective communication in patient care. Many studies in the literature support this finding. Multidisciplinary health care providers' communication is a key element for collaboration and coordination of care (Havens et al., 2010). Levels of relational coordination were positively correlated with the number of disciplines represented in multidisciplinary teams and meetings (Hartgerink et al., 2014). Gittel (2002) explained that having shared knowledge improves communication. Therefore, the multidisciplinary care delivery theme is supported by relational coordination as the three subthemes guarantee knowledge sharing among health care team members. Table 3 shows the frequency and percentages of occurrence of the three subthemes in the administrators, nurses, and physicians' responses.

Table 3

Frequency and Percentages of the Three Subcategories Under Multidisciplinary Care Delivery Theme

Multidisciplinary care delivery	*n*	% of the frequency of occurrence
Multidisciplinary rounds	18	37.5%
Multidisciplinary meetings	18	37.5%
Integrated medical record	12	25.0%

Multidisciplinary rounds. The first subtheme underlying multidisciplinary care delivery was multidisciplinary rounds. As they recognized its necessity, administrators implemented multidisciplinary rounds or combined nurse-physician patient rounds as a strategy to guide communication patterns. In a study about the effect of coordination on nurses and doctors' insights about quality of care, multidisciplinary rounds improved interprofessional communication and quality of patient care (McIntosh et al., 2014). Rimmerman (2013) found that conducting daily rounds collaboratively by the nurses and the physicians improves communication and team efficiency, and increases patients' satisfaction. One of the administrators considered that conducting multidisciplinary rounds on patients who have a prolonged stay in the hospital, unclear plan of care, or multiple consultants is essential for improving patient outcomes. Interviewed nurses and physicians also had similar inputs regarding multidisciplinary rounds. However, nurses and physicians face structural and process-related challenges in implementing the rounds effectively. For instance, nurse I-N-01 noted:

> By policy, when the doctor is here, the nurse should accompany the doctor so the nurse would know the plan of care on the patient. But, sometimes, all the

doctors come at the same time, and the nurse can be with one physician at a time.

These challenges support the finding of a previous study. Gonzalo et al. (2014a) found that the highest-ranking barrier for communication was that nurses had limited time to participate in the bedside rounds. Structuring of the rounds to ensure the participation of the nurses is essential for effectively implementing this strategy.

Physicians also commented on the importance of the multidisciplinary rounds. Physician I-P-02 considered that nurses' presence in the patient care rounds is essential for improving communication and quality of care. However, two studies found conflicting outcomes. McIntosh et al. (2014) found that physicians perceived that conducting multidisciplinary rounds and discussing patient cases with nurses or other health care professionals does not affect the quality of care (McIntosh et al., 2014). Similarly, in a Canadian ethnographic study, physicians often ignored the nurses' questions and opinions related to patient care (Zwarenstein et al., 2013).

Multidisciplinary meetings. Multidisciplinary meetings was the second thematic subcategory under multidisciplinary care delivery. Administrators discussed this subtheme as a method to improve NPC and subsequently patient care. Administrator I-A-04 insisted on the importance of the multidisciplinary meetings in enhancing communication. Multidisciplinary meetings are conducted on the patients who have a prolonged stay in the hospital, have an unclear plan of care, or have multiple consultants. Nurses usually call for such meetings. The meetings include physicians, consultants, nurses, pharmacists, physiotherapists, and other concerned health care providers. The purpose of these meetings is to discuss the plan of care of specific patients. Nurse I-N-01 mentioned that the multidisciplinary meetings help in

understanding the patient's plan of care. She added that attending such meetings helped her in communicating more efficiently with other health care providers and with the patients. Physician I-P-02 noted "conducting multidisciplinary meetings helps me in gaining the comprehensive opinions of all the involved health caregivers."

The strategy of multidisciplinary meetings supports the body of literature. In a study about cancer care decision making, multidisciplinary meetings improved communication and assisted in effective decision making (Dew et al., 2014). Sharma et al. (2016) found that multidisciplinary meetings can contribute to positive health care outcomes through enhancing health care team communication.

Integrated medical record. In addition to the multidisciplinary rounds and meetings, integrated medical record emerged as a third subtheme under multidisciplinary care delivery. Hospital administrators introduced the integrated medical record as a strategy to improve multidisciplinary communication. This strategy stipulates that nurses and physicians along with other involved health care providers document the patient's assessment and plan of care on the same multidisciplinary sheet. Administrator I-A-02 noted the following:

> Both physicians and nurses have to care about patient safety. They both have to write the care plan for the patient from the nursing and medical point of view on the same medical record, so they be in concordance with each other.

The integrated medical record guarantees that members of the health care team are acquainted with the updates on the case by reading each other's notes. Administrators acknowledged that physicians' compliance with documentation is a major challenge for implementing this strategy. Administrator I-A-04 noted that

physicians often skip the documentation step. Nurse I-N-01 also had the same input. Physicians did not comment on the integrated medical record. However, one of the physicians stated that he prefers verbal communication as he does not have time to document on the patients' medical record. Keenan, Yakel, Dunn Lopez, Tschannen, and Ford (2013) suggested that in addition to shared medical records, standardizing the format and content of documentation to ensure transfer of accurate and thorough patient information. Analysis of interview data is suggestive that administrators may need to find effective means of execution of the integrated medical record strategy to ensure physicians' compliance and information accuracy.

Theme 4: Mutual Respect

The final main theme extracted by data analysis was mutual respect. The administrators agreed that having a culture of mutual respect promotes effective communication. Analysis of administrators' responses revealed that effective communication correlates with mutual respect among different teams and individuals. For example, administrator I-A-03 noted:

> If there is no respect for each other as professionals, communication will not flow effectively. If we respect each other as partners that we have equal contributions and that we are joint for a common goal (without having a personal agenda or we want to remove this item from our to-do list and throw it on another department).

Mutual respect among team members is one of the components of relational coordination (Gittell et al., 2013). Fostering a culture of mutual respect is a concept that has been studied historically and thought to improve communication among coworkers (Havens et al., 2010). Modern health care delivery systems depend on

multidisciplinary teams rather than individuals (Weller et al., 2014). Team members should respect and trust each other to provide and receive accurate patient related information within the team (Weller et al., 2014). As suggested in relational coordination, members of various disciplines should respect and value other's contribution to the overall work process, which enhances coordination (Havens et al., 2010). Ilan et al. (2012) also noted that structured tools for improving communication might not improve communication if not used within a process of respect and attentiveness. This finding was confirmed by its prevalent appearance within the nurses and physicians' responses. Both nurses and physicians considered that having a mutual respect is essential.

Hospital administrators recognized mutual respect as one of the critical elements of the team dynamics. Therefore, as a strategy to foster mutual respect, administrators enhanced staff relationships through engaging employees in friendly dinners and extracurricular activities. Administrator I-A-05 stated "the hospital administration is aware of the importance of fostering respect among our employees. We try to enhance staff relationships by inviting our staff to dinners and extracurricular activities." Administrator I-A-01 also stated:

> We try to engage our staff in multiple activities, so they get to know each other. When staff get to know each other closely, they would with no doubt, have more respect for each other. These activities help in setting a friendly tone in staff communication.

Although administrators had adopted the strategy of enhancing staff relationships to foster mutual respect, nurses had concerns that some physicians may not model a respectful behavior. For example, nurse I-N-03 noted:

> Respect is the most important thing. Some doctors are disrespectful. We get used to them. We speak-up to our manager later on, but we do not answer the doctor on the spot.

The disrespectful attitude of some physicians described by the nurses confirms previously reviewed studies in which nurses perceived that physicians did not value their professional input about patient care. The physicians' dismissive behavior caused nurses to experience a lack of trust and respect (Tang, Chan, Zhou, & Liaw, 2013). Despite the experience of some nurse respondents, physicians considered that mutual respect is essential to communication. For instance, physician I-P-03 considered that having respect for oneself and other individuals is a prerequisite to communication. As a result of data analysis, administrators may need to implement other strategies that foster mutual respect such as applying disciplinary measures to individuals who behave disrespectfully.

Applications to Professional Practice

This study is significant to health care business practices in several ways. The study's objective was to explore communication strategies health care administrators use to guide NPC patterns. The findings of this study revealed the views and experiences of administrators, nurses, and physicians in one medical center regarding health care teams' communication. Four main themes emerged as a result of data analysis. The themes were: (a) nurses' empowerment, (b) nurses and physicians' accountability, (c) multidisciplinary care delivery, and (d) mutual respect. Health care leaders might benefit from the findings of the study by implementing strategies to improve health care teams' communication.

Effective communication among health care providers improves quality of care, patients' safety, and financial sustainability (Singer & Vogus, 2013). Researchers identified communication failure as a primary cause of preventable medical errors in hospitals (Hu et al., 2012). Rolston et al. (2014) identified communication failure as one of the two causes of medical errors. Proper communication may also foster patient satisfaction through improving team efficiency and ensuring prompt and efficient transmission of information to patients (Fenton et al., 2012). Hospital leaders seek strategies to guide effective communication patterns among health care providers (Kim et al., 2012). Publishing the results of this study might provide managers information about the strategies in guiding NPC patterns and the challenges they may face in implementing these strategies.

Learning how to enhance communication is a priority for today's health care leaders. Historically, literature revealed many barriers to effective health care team communication (Hollenbeck et al., 2012). To improve communication and consequently enhance quality and safety of patient care, health care leaders need to adopt an approach that addresses multiple factors such as staff training and education, team processes, and organizational culture (Weller et al., 2014). The literature offers abundant strategies that health care managers may use to guide communication including communication models, technological advancements, implementation of education tools, skills trainings, and multidisciplinary approaches (De Meester et al., 2013; Fargen et al., 2012; Gonzalo et al., 2014a; Schmutz & Manser, 2013; Vardaman et al., 2012). In this study, I found similar results related to nurses' knowledge and experience, joint accountability, team-centered communication, communication training sessions, multidisciplinary care delivery, and mutual respect.

The results of this study can inform strategies and challenges for enhancing health care team communication. Therefore, based on this study's findings, health care managers and policymakers may identify strategies that guide effective communication, allowing them to (a) implement the strategies applicable to their organizations, (b) review their policies and procedures to integrate these strategies, and (c) identify the challenges of implementing effective communication strategies at their organizations.

Implications for Social Change

Quality and safety of patient care is the concern of both hospital leaders and members of the society. Patients have the right to receive safe care in a positive and informative environment (Shekelle et al., 2013). Effective communication patterns enhance quality of patient care. Improving health care communication patterns contributes to ensuring that members of a community will have access to safe patient care. Conclusions of this study add to the existing body of knowledge about improving quality and safety led by communication strategies guiding NPC patterns. In addition, effective communication may improve employee satisfaction through improving team efficiency and fostering a positive work environment (Körner et al., 2015). Therefore, the conclusions of this study may also contribute to the satisfaction of health care professionals.

The cost of measurable, potentially preventable adverse medical events exceeded $1 billion in the United States in 2009 (David et al., 2013). With growing costs of information technology systems and courses of treatment, governments have been seeking cost containment strategies (Aiken et al., 2012). Health care leaders have been taking many measures to reduce health care costs such as decreasing

sentinel events and medical errors, decreasing patients' length of stay, refining hospital's throughput processes, and improving efficiency of clinical teams (Aiken et al., 2012). The findings of this study may be of value to the society by contributing to reducing the expenses of private and governmental health care institutions. Improved communication may decrease hospital expenditures through decreasing adverse event costs. Therefore, the findings of this proposed study may contribute to decreasing societal health care expenditures.

Recommendations for Action

Health care leaders may consider implementing new or evaluating existing strategies to guide effective NPC within their hospitals. Hospital managers need to adopt communication strategies to improve quality of care, patient safety, and patient and staff satisfaction. As the findings of the study inform strategies to improve communication patterns, hospital managers seeking to improve communication patterns may benefit from the conclusions of this study.

This study's targets are hospital directors, chief executive officers, nursing directors, and operational managers. As the main investigator of the study, I discussed four main strategies, including subcategories that can be implemented to enhance effective NPC. The four main themes; (a) nurses' empowerment, (b) nurses and physicians' accountability, (c) multidisciplinary care delivery, and (d) mutual respect are included in subject literature. Hospital leaders may also benefit from addressing the challenges the study participants faced in implementing these strategies and look for alternative ways to overcome these challenges. The findings may also inform the administrators of the hospital where the study was conducted about the effectiveness of their selected strategies to improve communication.

As this study includes strategies to improve NPC, it is important to disseminate the conclusions to health care leaders including the community partners. I will disseminate the study findings to the community partners through e-mail. I will seek opportunities to publish study findings in the literature and conferences related to NPC.

Recommendations for Further Research

This research was a qualitative, explorative case study, conducted in a single medical center. Other medical centers may have differing challenges and variables linked to effective communication. Therefore, it is essential to conduct the research in different hospitals to gain comprehensive insight into the topic. Furthermore, the study was done in a single institution; the study's sample size was limited to five administrators, three nurses, and three physicians. As the result of the small sample, the study results may not be accepted as applicable to all nurse and physician populations. Future studies are recommended to include a larger sample size.

The study explored various strategies to guide NPC. Health care leaders may be interested to implement one or more of these strategies. Therefore, further research may be recommended to profoundly explore the practicality and effectiveness of each of the strategies.

It is worthy to mention that the study was conducted in a for-profit medical center in the Middle East. Given that the study results include cultural modification recommendations, the conclusions of the study may not be applicable to not-for-profit organizations. As a result, I recommend repeating the study in not-for-profit hospitals to gain a comprehensive insight about the topic.

Reflections

Given hospitals' continuous pursuit to decrease health care costs (Aiken et al., 2012), and the proven effects of communication breakdowns that diminish quality care and patient safety (James, 2013; O'Leary et al., 2013), this study may be important to health care leaders. Administrators need to be informed about strategies that guide communication patterns in hospitals. Accordingly, administrators may apply the lessons learned from this study to modify strategies that might apply to their organizations.

To me, the DBA doctoral study process was enriching overall, in which I learned how to plan, conduct, and analyze a research study and support each step through evidence-based literature. Conducting this study added to my experience and knowledge in conducting case study research. My previous knowledge on the topic suggested NPC might be a sensitive topic for discussion with health care providers. However, the participants were receptive and had a positive attitude towards the study. They verbalized their interest in improving communication patterns by incorporating the research outcomes. The selected hospital administrators and staff's positive attitude reflects a healthy culture in which members accept deficiencies and embrace change.

The research was conducted in a 170-bed medical center. Perhaps, conducting the same study in a larger scale hospital may reveal other themes that could not appear on a small scale. Despite this fact, conducting this study added to my knowledge on the participants' perceptions of the topic. Respondents gave ample information regarding the topic and supported their perceptions with various real-life examples. Throughout the interviews, I kept neutral body language and did not use

judgmental comments. Recording the interviews helped me to remove any personal bias that might have been imposed on the respondents during the interviews.

The study findings added to my knowledge on strategies to guide NPC patterns. As I collected, analyzed, and interpreted the data, I gained new understanding of the approaches, the perceived challenges, and the evaluation of the communication strategies. Hospital administrators may benefit from this study to adopt communication strategies and shape them according to their institutional needs.

Conclusion

Quality and safety of patient care constitute main components of a hospital's mission statement (Leggat & Holmes, 2015). Hospital administrators set strategies and create structures and processes to guide employees in fulfilling the components of the mission (Kopaneva & Sias, 2015). Effective NPC is essential for improving team efficiency and preventing medical errors (Rowlands & Callen, 2013). This research study provides four main strategies that administrators use to guide NPC. The concluded strategies were: (a) nurses' empowerment, (b) nurses and physicians' accountability, (c) multidisciplinary care delivery, and (d) mutual respect. These strategies may guide administrators in setting structures and process to achieve effective communication, improve quality care, and ultimately attain hospital missions.

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Appendix A: Example Mission Statement

The following mission statement is provided to illustrate the importance of patient care and safety to organizational purpose and mission.

The mission of The Johns Hopkins Hospital is to improve the health of our community and the world by setting the standard of excellence in patient care. Specifically, we aim:

- To be the world's preeminent health care institution
- To provide the highest quality care and service for all people in the prevention, diagnosis and treatment of human illness
- To operate cooperatively and interdependently with the faculty of The Johns Hopkins University to support education in the health professions and research development into the causes and treatment of human illness
- To be the leading health care institution in the application of discovery
- To attract and support physicians and other health care professionals of the highest character and greatest skill
- To provide facilities and amenities that promote the highest quality care, afford solace and enhance the surrounding community.

Appendix B: Permission to Use Relational Coordination Model Figure

Dimensions of Relational Coordination Inbox x

Rachel Hamdan <rachel.hamdan@waldenu.edu> 12/26/14

to dhavens

Dear Dr. Havens,

I am a doctorate students at Walden University and I am working of my dissertation "Dimensions of Nurse-Physicians Communication". I am interested to use the figure "Dimensions of Relational Coordination" found in the article "Relational coordination among nurses and other providers: impact on the quality of patient care". I would like to ask for permission to use it.

Regards,

Rachel Hamdan RN, MSN
Doctorate of Business Administration Student
Walden University
Student ID: A00304112

Havens, Donna Sullivan <dhavens@email.unc.edu> 12/26/14

to me

Of course, I trust that you will cite appropriately.
Best wishes,
Donna Havens

Donna Sullivan Havens, PhD, RN, FAAN
Interim Dean
Professor, Healthcare Systems & Outcomes
School of Nursing
University of North Carolina at Chapel Hill
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Appendix C: Interview Protocol

The purpose of the interview is to explore communication strategies health care administrators use to guide NPC patterns in a health care setting. Five administrators, three physicians, and three nurses will be interviewed. Each participant will be asked the same questions as per the protocol below:

1. I will introduce myself to the participant as a doctoral student at the School of Management at Walden University and explain the purpose and time of the interview.
2. I will give a copy of the consent form to the participant to read prior to the interview process. Once agreement is done, the participant will retain a copy.
3. I will remind the participant that the interview will be audio-recorded. The interview will start with the following background information:
    a. Educational background
    b. Title/position
    c. Years of experience
4. The research questions will follow. I will start the interview with question #1 and follow through to the final question.
5. I will end the interview and inform the participant that I will contact him/her for member checking.
    a. I will interpret the interview data and share the interpretation with the respondents by e-mail.
    b. If any of the respondents have changes or additions, they will respond to me by e-mail.
    c. I will contact them by phone to clarify the information to be changed or added.
6. I will thank the interviewee for participating, stop the audio recording.
7. I will confirm the participant has my contact information for follow-up questions and concerns.

Appendix D: E-mail Invitation – Administrators

Invitation to Participate in a Research Study

[redacted]

Principal Investigator: Rachel Hamdan, RN, MSN

Dear Ms., Mr., or Dr. _____,

I am inviting you to participate in a research study entitled "Dimensions of Nurse-Physician Communication". The study is part of my doctoral requirement. I am a doctoral student at the School of Management at Walden University. The purpose of the study is to explore communication strategies health care administrators use to guide nurse-physician communication patterns.

You will be asked to participate in an interview to give your opinion about communication strategies health care administrators use to guide nurse-physician communication patterns. You are invited because we are targeting administrators, nurses, and physicians working at [redacted]. You are eligible for this study because you occupy one of the following positions: chief executive officer, medical director, nursing director, nurse manager, or associate medical director of operations.

The estimated time of the interview is 30-45 minutes. Please read the attached consent form and consider whether you want to be involved in this study. If you are interested to participate or have any question about this study, you may contact me (Phone number: +961 3 803293, e-mail address: rachel.hamdan@waldenu.edu) by phone or e-mail. I will contact you to arrange the date and place of the interview as per your preference. Please note that the first nurse manager to show interest in participating will be recruited for the study.

Appendix E: E-mail Invitation – Nurses

Invitation to Participate in a Research Study

[redacted]

Principal Investigator: Rachel Hamdan, RN, MSN

I am inviting you to participate in a research study entitled "Dimensions of Nurse-Physician Communication". The study is part of my doctoral requirement. I am a doctoral student at the School of Management at Walden University. The purpose of the study is to explore communication strategies health care administrators use to guide nurse-physician communication patterns.

You will be asked to participate in an interview to give your opinion about communication strategies health care administrators use to guide nurse-physician communication patterns. You are invited because we are targeting administrators, nurses, and physicians working at [redacted]. You are eligible for this study if you are currently employed by [redacted].and have a minimum of 1 year experience as a registered nurse on a medical-surgical unit.

The estimated time of the interview is 30-45 minutes. Please read the attached consent form and consider whether you want to be involved in this study. If you are interested to participate or have any question about this study, you may contact me (Phone number: [redacted], e-mail address: [redacted]) by phone or e-mail. I will contact you to arrange the date and place of the interview as per your preference. Please note that the first three nurses to show interest in participating will be recruited for the study.

Appendix F: E-mail Invitation – Physicians

Invitation to Participate in a Research Study

[redacted]

Principal Investigator: Rachel Hamdan, RN, MSN

I am inviting you to participate in a research study entitled "Dimensions of Nurse-Physician Communication". The study is part of my doctoral requirement. I am a doctoral student at the School of Management at Walden University. The purpose of the study is to explore communication strategies health care administrators use to guide nurse-physician communication patterns.

You will be asked to participate in an interview to give your opinion about nurse-physician communication patterns. You are invited because we are targeting administrators, nurses, and physicians working at [redacted]. You are eligible for this study if you are currently employed by [redacted] and have a minimum of 3-year experience as a physician on a medical-surgical unit.

The estimated time of the interview is 30-45 minutes. Please read the attached consent form and consider whether you want to be involved in this study. If you are interested to participate or have any question about this study, you may contact me (Phone number: [redacted], e-mail address: [redacted]) by phone or e-mail. I will contact you to arrange the date and place of the interview as per your preference. Please note that the first three physicians to show interest in participating will be recruited for the study.