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WHAT NURSES SAY: COMMUNICATION BEHAVIORS ASSOCIATED WITH THE COMPETENT NURSING HANDOFF

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ABSTRACT OF DISSERTATION

Anne Claiborne Ray Streeter

The Graduate School

University of Kentucky

2010

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THE COMPETENT NURSING HANDOFF

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ABSTRACT OF DISSERTATION

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A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Communications and Information Studies
at the University of Kentucky

By
Anne Claiborne Ray Streeter

Lexington, Kentucky

Co-Directors: Dr. Nancy Grant Harrington, Professor of Communication
and Dr. Derek R. Lane, Professor of Communication

Lexington, Kentucky

2010

ABSTRACT OF DISSERTATION

WHAT NURSES SAY: COMMUNICATION BEHAVIORS ASSOCIATED WITH
THE COMPETENT NURSING HANDOFF

Communication competence and medical communication competence served as the theoretical framework for this research that seeks to identify specific communication behaviors associated with what nurses say constitute a communicatively competent patient handoff at the nursing change of shift. Data collected from 286 nurses responding to an online modified Medical Communication Competence Scale posted at www.allnurses.com supported the hypotheses that information exchange (information giving, seeking and verifying) and socioemotional communication behaviors are rated more highly in the best patient handoffs than in the worst ones. Research questions found that the incoming nursing role rated behaviors associated with information verifying and socioemotional communication higher than did the outgoing nursing role, and that the worst handoffs were those in which the incoming nursing role gave the lowest ratings for information-giving behaviors. Additional insight into other communication-related characteristics associated with quality handoffs were provided as well, including location, tools/type and environment for the patient handoff at the nursing change of shift. These findings offer a foundation for future research into development of communication-based standardized patient handoff processes and training that ultimately may reduce patient care errors caused by communication failures during the patient handoff at the nursing change of shift.

KEYWORDS: Patient Handoff, Nurse Shift Report, Medical Communication Competence, Information Exchange, Socioemotional Communication

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November 29, 2010

WHAT NURSES SAY: COMMUNICATION BEHAVIORS ASSOCIATED WITH
THE COMPETENT NURSING HANDOFF

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This dissertation is dedicated to the bedside nurses who care for their patients to the best of their ability, doing everything they can to prevent harm and facilitate healing for their patients. The nurses in my life − my mother, my sisters and some of my closest friends and colleagues − have provided me with inspiring examples of nursing excellence. I also dedicate this dissertation to a woman I never knew: my husband's mother, Harriet Jaeger Streeter. She was seeking her doctorate in speech communication when breast cancer took her life at the age of 57. We have much in common, including her son and my beloved husband, Bill.

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Chapter 1: Introduction, Rationale, and Literature Review

A minister once told the story of watching children learning to play baseball. As he watched these youngsters playing their hearts out, he was amazed at how often the coaches and others yelled out this advice: "Hit the ball!" The minister's point was that these kids knew that hitting the ball was the goal; they didn't need to hear that. What they needed was instruction on *how* to hit the ball.

Communication is like that. We know we need to communicate better, but we don't know what that means. In health care, organizations are wrestling with ways to minimize ineffective communication as a way to reduce errors – sometimes deadly – in patient care. What's often missing is specific instruction on what "good" communication entails.

Communication among nurses and other health caregivers has been identified as a key factor in patient safety, particularly during an interaction called the patient handoff – when responsibility for a patient is passed from one caregiver to another. Critical information about the patient is shared during this transfer of responsibility, a process that may occur multiple times along each patient's unique trajectory through the health care setting (Corbin & Strauss, 1988).

In an evaluation of more than 3,800 adverse patient events (called sentinel events), The Joint Commission (TJC) found that 65 percent were caused by communication problems ("Improving hand-off communications," 2006). TJC states that at least half of these communication failures occurred during patient handoffs. Failure may be due to many factors including lack of time, interruptions, lost or forgotten information, or use of confusing language or jargon ("Strategies to Improve Hand-off," 2005), as well as lack of a formal process or tool, use of varying methods, lack of communication between the health care disciplines (e.g., doctors and nurses), and use of one-way transfer of information versus a shared exchange (Perry, 2004).

The patient handoff interaction was deemed so critical to patient safety that TJC made patient handoffs the focus of their National Patient Safety Goals for 2006 ("Joint Commission Announces," 2005). TJC called for continued emphasis in subsequent years ("Joint Commission Announces," 2006, 2007, 2008), requiring participating health care organizations to "define, communicate to staff, and implement a process in which information about patient care is communicated consistently" ("Joint Commission

Announces," 2006, n.p.). The requirement did not state how handoffs are to be done ("Improving Handoff Communications," 2006), leaving that to the organization to determine based on the type of handoff (e.g., nursing shift changes, physician transfer, nursing home transfer, unit-to-unit transfer). However, there was a requirement that those involved in a handoff have an opportunity to ask and respond to questions. This requirement underscores the importance of communication behaviors associated with sharing and exchanging of information at this key intersection of a patient's care.

In order to minimize the risk to patients for errors in patient care, it is important to identify communication behaviors that create the optimal or communicatively competent handoff. Those behaviors could then be taught to nurses and other caregivers to help them better "hit the ball," providing tangible means for transferring critical patient care responsibility from one caregiver to another in a timely, accurate and appropriate fashion.

An exhaustive literature search (see Appendix A) revealed little research concerning what specific communication behaviors are associated with a quality or communicatively competent patient handoff. This was true whether the handoff process occurred at the bedside or at a remote location, in groups or in pairs, or used computer-mediated applications (such as automated phone features or computer-based application) or face-to-face procedures.

While there are many types of handoffs in the patient care setting, this research focuses on identifying specific communication behaviors associated with the interpersonal transaction between nurses during the change-of-shift handoff — a key and recurring part of the inpatient hospital stay. Nursing is an important area on which to focus attention. The Institutes of Medicine (IOM) estimated that 54 percent of all health care workers are represented by nearly 3 million licensed nurses (IOM, 2004) who take care of patients in a variety of settings, including hospitals. As the IOM noted, "How well we are cared for by nurses affects our health and sometimes can be a matter of life or death" (p. 2). Nurses provide and coordinate more than 80 percent of a patient's care (Keenan, Tschannen, & Wesley, 2008). Nurses are the one constant in a patient's hospital experience, responsible for monitoring patient status, providing needed therapy, intercepting potential medication errors, coordinating the efforts of other caregivers, and educating patients and families.

In a conversation with Buerhaus (2004), patient safety advocate Lucian Leape noted that nurses were the quickest to understand the need to focus on remedying the systems that cause errors. Leape said that, "Nurses are on the front line and see their own mistakes as well as those of others. No nurse wants to hurt a patient, and no nurse wants to make a mistake" (p. 368). Carroll (2005) noted that quality nursing largely depends on a nurse's "ability to listen to, and hear, the many messages sent to her each day, and on the system-wide resources that support accurate, timely, meaningful communication" (p. 231). However, as important as nurses are to the quality of patient care, and despite evidence indicating that communication quality plays a major role in patient safety, nursing students receive little training in communication skills overall (Chant, Jenkinson, Randle, & Russell, 2002).

Lee and Garvin (2003) noted that information transmission is critical in health care settings, but the pervasive model is one that appears to favor a transfer of information (a one-way monologue) rather than an *exchange* model that encourages two-way discourse. At every patient handoff at the nursing change of shift, decisions are made by the nurses involved about whether to engage in information exchange rather than the one-way transfer of information. The outgoing nurse has latitude in deciding what information is relevant or irrelevant to share with the incoming caregiver as well as how open she/he is to inviting opportunities for questioning or clarification of that information by the incoming nurse; the incoming nurse must decide what information to question and whether the outgoing nurse is open to those questions; and there may be a choice in the media or communication channel used (e.g., voice mail, recorder, computer, PDA, check list, etc.) or location (e.g., bedside versus nurses' station). A critical concern, from a communication perspective, is whether an exchange model of information transmission is valued, or even necessary, in the handoff setting, and if so, what steps are needed to institutionalize this model.

The following review of the literature looks in more detail at the role communication in general, and specifically at the handoff, plays in creating a safe environment for patients in the health care setting. The review includes a summary of findings that provide a better understanding of the complexity of the handoff and the role this event plays in patient safety and quality of care. Also included is a review of research from other high-reliability industries where accurate and comprehensive transfer of

information is critical in preventing injuries or death. Much of what has been implemented in health care is based on the findings from industries such as aviation and space missions. A review of the theoretical frameworks of communication competence and medical communication competence follows. The end result is a foundation for research that will lead to a better understanding of what *specific communication behaviors* constitute a competent nursing handoff at the change of shift report.

Literature Review

The important role of nursing in preventing errors in patient care has been detailed in the Institute of Medicine's (IOM) comprehensive reports on *To Err is Human: Building a Safer Health System* (2000) and *Keeping Patients Safe: Transforming the Work Environment of Nurses* (2004). In to *Err is Human,* the IOM noted that improving communication systems and lapses in information will reduce medical errors. Errors are the "failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" (p. 4). As many as 98,000 patients in 2000 died as a result of medical error (IOM, 2001). The cost to the United States of preventable errors that result in adverse events is estimated to be between $17-29 billion (IOM, 2000).

In the IOM's *Crossing the Quality Chasm* (2001), six goals for improvement in patient care were identified, calling for health care to be safe, effective, patient-centered, timely, efficient and equitable. In a discussion on safety, the IOM noted that:

> To be safe, care must be seamless – supporting the ability of interdependent people and technologies to perform as a unified whole, especially at points of transition between and among caregivers, across sites of care, and through time. It is in inadequate handoffs that safety often fails first. Specifically, in a safe system, information is not lost, inaccessible, or forgotten in transitions. (p. 45)

When a patient is transferred or handed off from one caregiver or facility to another, information about the patient is communicated by the outgoing health professional to the incoming staff. It is this patient handoff that is of concern as it occurs within the context of a very complex health care system, between very different individuals, who are increasingly under pressures caused by caring for sicker patients with fewer health care resources. Such a setting opens the door to miscommunication that can have a serious impact on patient care.

TJC annually issues its National Patient Safety Goals that apply to more than 15,000 Joint Commission-accredited and certified health care organizations and programs. Achieving these goals and related requirements is a condition of continuing accreditation or certification for accreditation. In a news release ("Joint Commission Announces," 2005), Commission President Dennis S. O'Leary, M.D., said that the goals extend the Commission's "commitment to focusing attention on the greatest opportunities for improving patient safety" (n.p.). The integration of the requirements into the internal systems of each accredited or certified organization is intended to "avoid unnecessary patient disabilities and loss of life" (n.p.). The standards include as a goal improving the effectiveness of communication among caregivers as, "Ineffective communication is the most frequently cited category of root causes of sentinel events" ("Joint Commission 2006 National Patient Safety Goals Implementation Expectations," 2005). As part of this goal, TJC required that organizations have a standardized approach to handoff communications, "including an opportunity to ask and respond to questions" ("Improving Handoff Communications," 2006, p. 9). TJC noted that standardization promotes consistency and suggested that a standardized approach address specific handoff situations, whom to involve in the communication, the type of information to be communicated, the use of check lists such as SBAR (Situation-Background-Assessment-Recommendation) and use of print or electronic information. The handoff information could include a report on the patient's current condition; the care, treatment and services planned for the patient; and any recent or anticipated changes.

In a telephone interview, R. Croteau, M.D. (personal communication, June 9, 2005), executive director for patient safety initiatives for TJC, explained the patient handoff standard and requirements for implementation were based on 10 years of TJC review of the root causes for sentinel events that have been reported by health care organizations. Sentinel events are defined as an "unexpected occurrence or variation involving death or serious physical or psychological injury or the risk thereof" (IOM, 2004, p. 93). TJC requires accredited organizations to conduct a root-cause analysis of sentinel events and prepare an action plan to prevent such occurrences from happening again. The review of sentinel events assists in formulating the annual release of priority goals for implementation. The review of 3,811 root-cause analyses completed during 1995-2004 found that communication problems caused more than 65 percent of sentinel

events, with 73 percent resulting in deaths ("Sentinel Event Statistics," 2006). At least half of the communication problems happened during the handoff.

Other research on handoffs also found that communication failure was a major contributing factor in adverse patient care events (Bates & Gamanda, 2003). Over 12,000 root-cause analyses of adverse events conducted by the Veteran Administration National Patient Safety Center identified communication failures in 70-80 percent of the incidents (Falzette, Carmack, Robinson, Murphy, & Dunn, 2007). Communication failure was a contributing factor in 14 percent of 419 patient incidents that occurred in the recovery room after surgery (Kluger & Bullock, 2002).

Patient handoffs are also addressed in the IOM's recommendations from the Committee on the Work Environment for Nurses and Patient Safety (2004). The recommendation is for health care organizations to provide nursing leadership the tools necessary to design a work environment and care process that will lead to reduced errors, including those errors associated with patient transfers and other types of patient handoffs.

Nurses are at the core of patient care with key interactions required between nurse and patient, nurse and nurse, and nurse and physician and other caregivers. Communication is critical to these relationships and is dependent largely on the "nurse's ability to listen, assimilate, interpret, discriminate, gather, and share information in constantly changing systems made up of many disciplines and hierarchies" (Manning, 2006, p. 268).

Anthony and Preuss (2002) explored the role of nurses in the flow of clinical information and the inherent opportunities for information flow "breakdowns." Such breakdowns may be caused by decay of the information as situations rapidly change, with a need for new, more current information, such as a patient's vital signs, to be collected and conveyed; confusion about the salience or importance of the information needed to make important patient care decisions; and the funneling, or progressive loss, of information in the handoff of patients among multiple caregivers. The decay of patient information and the salience of that information provide the context in which information funneling occurs. The complexity of the hospital system contributes to the progressive funneling and loss of critical information. Other contributing factors include the many

health care providers involved in a patient's care, sicker patients, staffing ratios and shorter hospital stays. Informational funneling may ultimately lead to adverse patient outcomes.

Standardization as required by TJC may compound the funneling process through the use of check lists and worksheets that focus on the patient information from the previous shift: Newer information from the most recent shift is passed from one nurse to the other at the handoff while important details from the past may be omitted. Lomas (1990) cautioned that conformity to standards may be confused for high levels of performance. Berwick (1989) noted that minimal standards may lead to minimal quality care that is judged to be acceptable based on minimal norms. Thus it is important to identify communication behaviors that facilitate an open, thorough exchange of information that will reduce the chances of a breakdown in the accurate, appropriate and timely flow of patient information from one caregiver to another.

Comparisons With Other High-reliability Industries

Much of what is known about handoffs in the patient care setting is based on what has been learned in other similar high-reliability industries (i.e., aviation, nuclear power plants and shuttle space missions). In their report *Silence Kills*, Maxfield, Grenny, McMillan, Patterson, and Switzler (2005) compared the expertise, dedication and intelligence of health care providers with the NASA employees who, despite their combined efforts, were unable to prevent the deaths of seven astronauts on the Columbia Shuttle Mission STS-107. Contributing to the deaths was a culture that failed to support effective communication of safety information, as well as the inability of staff to voice differing opinions.

In their analysis of communication at the change of shift or handoff during space shuttle missions, Patterson and Woods (2001) found that failure to share information, or forgetting or misunderstanding information, led to staff having an incorrect or incomplete view of the state of the system; being unaware of important data; being ill-prepared to anticipate changes or perform certain tasks; and making unneeded changes in activities, goals, plans, decisions or priorities. Twenty-one handoff strategies identified from this research were further analyzed in an ethnographic study of handoffs in four high-reliability settings: NASA Johnson Space Center in Texas, two Canadian nuclear power generation plants, a railroad dispatch center, and an ambulance dispatch center (Patterson,

Roth, Woods, Chow, & Gomes, 2004). The strategies were categorized as those that improve handoff update efficiency and effectiveness, increase access to data, improve coordination with others, enable error detection and recovery, and delay transfer of responsibility during critical activities.

Patterson et al. (2004) took the observations of these critical settings and discussed the implications for the health care-related handoff, cautioning that there are important differences between health care and the other settings. In health care, there are many types of patient handoffs; there is a wide range of tools used to support the handoffs (e.g., automated phone/voice mail and electronic medical records); and technology used to capture and display historical information often needs to be supplemented with other information beyond what is available electronically. The authors suggested ways to improve the health-care handoff based on lessons learned from the high-reliability industries, including modifying audio-taped report to include a face-to-face check out to allow the incoming nurse a chance to ask questions or clarify information. The handoff process also could include a "forcing factor" (p. 131) to support a face-to-face transfer of responsibility, such as exchanging beepers, phones, etc. Making sure nurses have access to the electronic medical records and other information needed would make the handoff process more efficient and accurate.

Much can also be learned from the aviation industry's focus on the role of communication during times of crisis. In his analysis of the Tenerife air disaster, Weick (1990) concluded that loss of communication accuracy as a result of hierarchical distortion – one-way transfer of information with no chance to check for accuracy or understanding – contributed to the rapid diffusion of many small errors that left the system vulnerable to crisis. He suggested that communication is needed to "detect false hypotheses" (p. 583) that tend to surface at times of crisis, and that "crises tend to create vertical communication structures when, in fact, lateral structures are often more appropriate for detection and diagnosis of the crisis" (p. 583). False hypotheses – incorrect premises or assumptions – can be ferreted out through open discussion, verification and redundancy. False hypotheses are more likely to occur when people hear what they want to hear, their hypothesis minimizes their anxiety, their attention is focused elsewhere, or the false hypothesis comes during a let-down, after the most difficult part of the procedure.

Weick (1990), as well as Cocklin (2004), found increasing situational stress led to a more formal, hierarchical flow of information or speech exchange, with less input from the crew and more formal communication. These two analyses from an aviation perspective may be compared to the patient handoff, which comes as one nurse may be winding down what may have been an extremely stressful shift, and the other is gearing up for her/his turn. If the handoff takes place during a stressful time, sharing of relevant patient information may become more hierarchical in nature – more of a one-way information transfer from the person perceived to be in a more authoritative position (e.g., the outgoing nurse who has the needed information), than a two-way exchange of information between equal colleagues. This one-way flow of information may reduce chances to pick up on errors or false hypotheses, or to verify conflicting information.

Krieger's (2005) concept of shared mindful communication, an expansion of Langer's (1989) mindfulness, was used to research flight crew communication during crisis. Shared mindfulness occurs when the individuals involved in a communication interaction "are in an active state of attending, responding, and perceiving information correctly. As a result, they are continually updating, attuned, and open to incoming data that are unexpected, disconfirming, improbable, implicit and/or contested" (p. 138). In Krieger's study, senior aviation students were placed in pairs with each person in the dyad assigned either the role of pilot or first officer. Krieger found that those dyads employing more shared mindfulness communication behaviors and exhibiting fewer barrier behaviors made better decisions when presented with crisis scenarios.

Krieger's (2005) seven categories of shared mindfulness communication behaviors were seeking information (input, opinions, clarification and correction), reasoning from a positive perspective, perceiving multiple perspectives, orally sharing thoughts and feelings in precise conditional terms, mindfully acknowledging partner communication, using participative language ("we" vs "I" or "you") and exhibiting fluid turn taking (back and forth discussion). Barriers inhibiting shared mindful interaction were precognitive commitment (early commitment to plan of action), negative reasoning strategies (ignoring what is possible and feasible) and overt dominance (interrupting, ignoring, etc). Krieger noted these findings may prove useful in the health care setting. For example, if the incoming nurse has a preconceived notion about a particular patient's condition (and thus is blocking out anything that is different), the outgoing nurse may be

able to interject new and critical information by simply expressing concerns and clarifying information in a clear, precise and respectful manner that will overcome the other nurse's barrier. This in turn could lead to an enhanced dialogue resulting in a more accurate, appropriate and respectful exchange of critical patient information. Use of communication-based behaviors that support shared mindful communication will allow for and support individuals in moving beyond the routine transmittal of relevant information via a simple check list to one that creates a "current, precise, factual environment" (Krieger, 2005, p. 157).

Understanding the Handoff

As hospitals and other health care organizations standardize practices for the transfer of patient information through the continuum of the patient's care, it is important to understand what the handoff entails, as well as the role it plays in patient care and in the relationships of the individuals involved – particularly nurses. Other aspects to consider are how location, tools used and the process of preparing and conducting a handoff impact quality. How organizations are developing, using and testing attempts to standardize the process also sheds light on the complexity of this communication event. It is important to note that handoff notes, worksheets and check lists are not a part of the formal patient charting process and the information passed from one nurse to the other at the handoff is not noted on the patient's medical record. Written notes are generally discarded after a nurse's shift ends.

The average handoff at change of shift takes about 30 minutes (Miller, 1998), though Sherlock (1995) found handoffs ranged from 10-61 minutes, depending on the structure. Sherlock also observed that the information transferred varied, and that terms used were frequently implied, imprecise and open to interpretation, with some labeling of patients occurring. Greater attention was paid to problems associated with discharging the patient and education of the patient and family. Concerns were raised about noise levels interfering with the transfer of oral information and the chance that messages conveyed were not comprehended, but rather were distorted due to the influence of context and methods of delivering the information. The process observed lacked standardization and organization and varied in quality, offering opportunities for improvement to make the process more effective and a more efficient use of nurses' time.

Handoff purpose.

The handoff serves a variety of functions. Perry (2004) noted that the handoff involves both a transfer of knowledge as well as authority and responsibility. Lally (1999) and Kerr (2002) noted that the most common function of the handoff is informational – providing details about patients as well as about related family or other social support problems. Lally also noted that this transfer of information plays a role in team building, allowing for passage of a shared value system that increased cohesiveness and professionalism. Kerr found that the process provides social support, as well as an opportunity to socialize, a chance to discuss organizational concerns such as allocation of patients to nurses, and educational opportunities, both from a teaching perspective, as well as for the experiential learning process for the novice nurse. (This is in contrast to Sherlock [2005] who found no evidence of teaching during the handoff, or for organizational efforts.) Kerr also noted that the handoff process is inherent with conflicting tensions, including formal versus informal practices; the need to be comprehensive in relaying information, contrasted with the need to avoid wasting time or information overload; confidentiality versus family-centered care; and the tension of serving multiple functions.

Hopkinson (2002) found that the handoff process gave nurses who work with dying people a chance to express feelings and voice opinions to their colleagues, in addition to providing the necessary information for their decisions and actions. A study of handoffs in emergency rooms (Perry, 2004) found evidence of a latent positive aspect to the handoff process – an opportunity for a fresh look and a second opinion that may assist in recovery and rescue from a potentially adverse event.

Sexton et al. (2004) questioned the necessity of nursing handoffs, given the time they take, the expense and the accuracy of the process. The authors determined that about 85 percent of the information provided in the handoff already existed in the formal documentation structures; about 9 percent of the information discussed was irrelevant; and only about 6 percent of the information exchanged had to do with ongoing patient care and could not be found in the formal documentation system. This analysis would seem to support TJC's efforts to standardize the process, placing into practice a handoff format that nurses would find beneficial rather than a waste of time, one that would support continuity of quality patient care while reducing opportunities for errors due to

miscommunication. Identifying the necessary communication-based elements of such a handoff would provide the foundation for an optimal patient care handoff at the nursing change of shift.

Handoff methods and locations.

The process used for handoffs varies. The four most common methods are verbal, recorded, bedside and written (Pillow, 2007). Much of the literature looks at the various methods of transferring patient information among caregivers and the merits and criticisms of each of those methods (Miller, 1998; Perry, 2004). A survey of national practice for the handoff of the anesthetized patient at shift change revealed little formalization of the process, with respondents in agreement with national guidelines that included standardization and documentation of any handoff (Horn, Bell, & Moss, 2004).

Much attention has been given to moving the nursing handoff at the change of shift from the traditional setting distant from the patient to the patient's bedside as a way to engage the nurses' sharing of patient information and involving the patient in the process. Kassean and Jagoo (2005) documented the move from the traditional handover to the bedside model in a gynecological nursing unit. The previous ritual consisted of one-way communication with patient information written in patient files, nursing notes and ward diaries. Complaints by staff, physicians and patients who felt they were not involved enough in their own care led to use of the bedside handoff model. This model was more conducive to an information-sharing collaboration that was more comprehensive, brief and individualized with the opportunity for the patient to be involved in the process. Anderson and Mangino (2006) found switching to a bedside handoff with nurses using a standardized format increased patient, staff and physician satisfaction, and resulted in financial savings from reduced overtime and less time in shift change reports. Williams (1998) found that the relocation of the handoff to the patient's bedside resulted in the transfer of more accurate information. It also improved continuity of care, as well as improved patient and nurse relationships, and patient involvement in health care decisions.

As health care organizations embrace the use of information technology (IT), the use of electronic systems to facilitate nursing handoffs is on the increase. IT promises to "streamline processes, make procedures more accurate and efficient, and drastically reduce the risk of human error" (Ball, Weaver, & Abbott, 2003, p. 30). The most

prevalent systems now in use include the computerized order entry, the computerized patient record, and bar code technology used to check patient identification as well as track medication orders. Ball et al. did not address use of technology specifically for the handoff; however, the availability of clinical records, with real-time lab or imaging results, changes in patient status and built-in alarm features may play an important role in circumventing what Anthony and Preuss (2002) identified as the progressive loss of information through funneling. They noted that such systems are not meant to replace the crucial flow of information that passes between nurses and other health care providers. Rather, such systems are adjuncts to the existing informal and formal handoff communication structures.

Preparing for the handoff.

How the staff prepares for a handoff has also been the focus of study. Kerr's (2002) qualitative study on two pediatric wards identified three phases of the handover process: the pre-handover, during which the outgoing shift updates official patient care documents and prepares to hand information to the incoming shift; the inter-shift meeting, during which the off-going nurse takes the lead in presenting the information, with on-coming student and novice nurses playing a less active role than their more experienced colleagues; and the post-handover phase, where the incoming nurses do a limited gathering of information from the family and the documents before pursuing their patient care activities.

Four phases were found in a study of emergency room handoffs (Perry, 2004): pre-turnover for preparing for the transition, arrival, meeting and post-turnover. These findings supported the use of a tool that assists the nurse in updating, selecting and organizing the appropriate information (the pre-turnover/pre-handover process) to be presented during the handover. A written, formalized check list or worksheet gives the incoming nurse an easy-to-use document that will assist in conducting his/her post-handoff /post-turnover activities. This same document may later serve as a handoff tool as he/she prepares for the next handoff at the end of that shift, and so on.

Tools for standardizing the handoff.

Since TJC made the patient handoff a focus of its National Patient Safety Goals for 2006 and beyond ("Joint Commission Announces," 2005), hospitals have implemented a variety of tools, such as the Situation-Background-Assessment-

Recommendation (SBAR) format (Hohenhaus, S.M., 2006; Leonard, Graham & Bonacum, 2004; "Joint Commission Announces," 2006), Ticket to Ride (Landro, 2006), SHARE or Sketch-HANDS-Aim-Rationale-Exchange (Keenan, Tschannen & Wesley, 2008), and DATAS (Demographic/Diet, Assessments/Allergies, Tests/Test results, Status; Mascioli, Laskowski, Jones, Urban & Moran, 2009).

An increasingly popular standardization tool is SBAR. Originally developed for use on nuclear submarines during shift change, SBAR was redesigned for the medical setting to provide a common framework for nurses to use in organizing information to brief a physician on a critical patient situation (Groff & Augello, 2003; Haig, Sutton, & Whittington, 2006; Hohenhaus, 2006; Hohenhaus, Powell, & Hohenhaus, 2006; Manning, 2006). However, little has been done on analyzing the usefulness of this tool in the health care setting (Dixon, Larison, & Zabari, 2006; Hamilton, Gemeinhardt, Mancuso, Sahlin, & Ivy, 2006; Manning, 2006; Schroeder, 2006). Hamilton et al. (2006) noted that while SBAR is now considered a best practice for rapidly transmitting information in the hospital setting in a variety of handoff situations, there is little research on how SBAR may be improving the quality of communication, or whether there is an impact on quality outcomes. SBAR takes into account the differences in nurse and physician communication styles: Nurses use narratives and descriptive language; doctors want the bullet points. The SBAR-based check list allows for the nurse, as the frontline caregiver in the best position to assess patient condition, to organize and present the situation while recommending to the doctor a course of action in succinct, clear and concise terms.

SBAR has now been adapted by many organizations as the framework for nursing check lists to facilitate the transfer of responsibility of the patient from the outgoing to the incoming nurse at shift change. One of the developers of SBAR for the health care setting, Michael Leonard, M.D., said in an interview (Groff & Augello, 2003) that use of SBAR equalizes the playing field between the novice (the less experienced, less expert person) and the more seasoned, more expert health care provider. Those with less experience to guide their assessments and recommendations need a procedure to guide them and minimize error. This procedure provides an opportunity for the expert to teach the novice, for team building to be fostered, for nurses to be more assertive, and for creating situational awareness – a term sometimes used interchangeably with Langer's

mindfulness (1989). However, one might question whether changing the nurses' style of communication as SBAR was designed to do is desirable or necessary for competent nursing shift-change handoff communication.

Variations of structured communication such as SBAR to assist with communicating critical patient information include SAFE (Situation-Assessment-Findings/Figures-Express/Expect; Dixon, Larison, & Zabari, 2006), and SBAR-R — adding an R for readback, a technique used in aviation and other high-reliability industries that provides an opportunity to catch any communication failure, such as missed or misunderstood information (Dixon et al., 2006). A new template using the mnemonic PACE (not to be confused with the PACE system referenced later in the review of literature related to medical communication competence) was developed to organize patient data as follows: P for patient/problem; A for assessment/action; C for continuing changes; and E for evaluation (Schroeder, 2006). As with SBAR, these tools proved helpful in organizing the information needed to be passed on to the incoming caregiver, but little emphasis was placed on encouraging an exchange, rather than a transfer, of information.

The SHARE nursing handoff method (Keenan et al., 2008) was developed as part of a larger nursing documentation plan of care project called HANDS (Hands-on Automated Nursing Data System). SHARE means Sketch-HANDS-Aim-Rationale-Exchange. HANDS is a computerized plan of care that standardized both the methods and the nursing terminology used as a means of monitoring and improving nursing documentation and communication. Use of the HANDS method (Keenan & Yakel, 2005) brought about a greater awareness and understanding ("collective mind," n.p.) of care leading to enhanced continuity. More important, perhaps, was the finding that greater emphasis was needed on requiring time for discussion: "Nurses have very busy schedules; it was naïve to think that they would recognize the value of discussing the plan of care without prompting" (n.p.). The authors called this discussion "heedful interrelating" (n.p.); without building in a formal requirement for heedful interrelating, that discussion did not occur.

The functions and formats identified in this review of the literature have implications for patient safety concerns as hospitals struggle to comply with TJC's goals to develop a standardized process for the transfer of patient care between caregivers.

Certainly the literature supports the use of standardized check lists and organizational tools such as SBAR to help capture key information. There also is a movement toward having the handoff at change of shift occur at the patient's bedside as a means of improving the exchange of relevant patient information, while involving the patient in his/her care.

However, this review of the literature suggests that attempts to make sure critical patient information is not lost and is as accurate and current as possible have not focused on the *specific* communication behaviors needed for that goal to be accomplished, particularly those behaviors associated with information exchange and socioemotional relationships. Check lists and worksheets such as SBAR do not go far enough in prompting or reminding busy nurses to ask questions, seek additional information, verify or clarify what they've heard, or express their concerns or opinion. Establishing locations for the handoff, such as at the bedside, may indeed serve as a forcing factor for face-to-face transfers of information, but the location may or may not improve the quality of the information exchange at the nursing change of shift report. Nurses versed in competent communication behaviors could very well help prevent routine, mindless transfer of information that may be incomplete, inappropriate or incorrect. Thus, it is important to identify those communication behaviors associated with a competent handoff.

Theoretical Frameworks to Consider

In reviewing the literature related to the patient handoff process, it is important to look at communication competence in general, as well as medical communication competence for the health care setting. Research and debate concerning what constitutes competent communication informs the ultimate goal of the current study – to identify those communication factors most associated with the competent handoff. Such a review provides the foundation for the argument that the quality of a patient handoff is determined largely by the participant's use of specific communication behaviors or skills associated with communication competence at the nursing handoff at change of shift.

Communication competence.

Communication competence has been much explored as a core concept in interpersonal communication research (Wiemann, Takai, Ota, & Wiemann, 1997). Communication competence has been linked to indicators such as educational achievement, positive employee interviews, career status, health, and sense of well-being

(Spitzberg & Cupach, 2002), as well as interpersonal conflict (Gross, Guerrero, & Alberts, 2004).

Competent communication has many definitions (Cooley & Roach, 1984; Wiemann & Backlund, 1980). One such definition is "the knowledge of appropriate communication patterns in a given situation and the ability to use the knowledge" (Cooley & Roach, p. 25). Cooley and Roach included concepts of communication patterns (including structure of language, discourse patterns and nonverbal behaviors), appropriateness (as determined by the rules of the culture), situation (an event of significance that is separate from other situations in some way, including that which varies by culture), and ability to use communication (different from performance in that it includes individual factors that account for how the individual produces appropriate communication behaviors for a given situation). Perceived performance is the only measure available to assess competence, since "competence itself is neither perceivable nor measureable; it can only be inferred" (p. 15). Performance is "actual behavior in actual cases" (p. 27), with competence used as the basis of performance (but separate from it).

Similarly, Spitzberg (1983) argued that "competence is an interpersonal impression" (p. 326), determined through the perceptions of the participant's self and other's appropriateness and effectiveness within the context of a specific event. Spitzberg (2000) argued that, "…communication that is both effective and appropriate is likely to be higher quality than communication that is one but *not* the other" (p. 109). He cautioned that specific communication skills do not comprise competence. Rather, appropriateness and effectiveness are a "*function of* motivation, knowledge and skills" (p. 110). Those who are more motivated, knowledgeable and skilled have a greater chance of being viewed as competent (i.e., appropriate and effective), by themselves and others, based on specific contexts and goals. Individuals' perceptions of their own effectiveness led to judging themselves as competent; in turn, they judge the competencies of others based on the appropriateness of their behavior (Canary & Spitzberg, 1987). Behavior that gains social rewards and fulfills expectations of others is deemed appropriate; behavior that accomplishes its goal is effective. Spitzberg and Cupach (1984) noted that "to the extent that an encounter fulfills the communicator's positively valenced expectations, it will be satisfying" (p. 578).

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In their analysis of the cognitive processes involved in effective communication performance, Duran and Spitzberg (1995) drew upon action assembly theory (Greene, 1984), which looked at communicative behavior as being "novel and creative yet patterned and repetitive" (Greene, p. 289). The human mind contains both conceptual and procedural knowledge (i.e., the knowledge about something as well as the knowledge of how to do that something). Procedural knowledge refers to "those things we have learned to do, and not to do, in order to act efficaciously" (p. 291). Greene premised that procedural knowledge is composed of many units of action-outcome relationships acquired through past experiences. Behavior is the end result of the many elements of the procedural repository, with some sort of process selectively activating each of the procedural records. The level of activation of a procedural record is based on whether a goal or desired outcome is linked to a particular procedural record that previously resulted in the same outcomes. For example, if the incoming nurse's goal is to make sure she/he has understood something the outgoing nurse has said about a particular patient, the procedural record associated with this goal may activate the nurse to verify the information or ask a question to gather additional information, particularly if previously such an action resulted in increased accuracy. Thus, it can be argued that nurses who incorporate specific communication behaviors as part of a standardized process for conducting patient handoffs have the procedural knowledge and selective activation necessary to behave as expected.

The cognitive aspect of communication competence involves mental processes such as being able to perceive situational variables that may impact communication choices; the ability to choose and adapt behaviors based on those situational variables, as well as anticipating the consequences; being able to perceive how the other may respond and adapt to those choices; and a general evaluation about the performance overall (Duran & Spitzberg, 1995). Duran and Spitzberg premised that those who were more competent spent more time evaluating their self-presentation and communication in general, determining what worked best in achieving their goal. Four mental processes − anticipation, perception of consequences, immediate reflection and continued reflection on the choices made − became the foundation of their Cognitive Communication Competence Scale (CCCS). These processes appear to be similar to the handoff preparation stages identified by Kerr (2002) and Perry (2004), described earlier.

Spitzberg's (1990) work on determining measures of communicative knowledge found that this construct is similar to Bandura's (1977) self-efficacy beliefs in one's ability to achieve positive outcomes through communication strategies. Spitzberg's Communicative Knowledge Scale tapped into perceptions of self-efficacy, confidence and assertiveness.

This review of communication competence lends credence to the need to consider the handoff as a communication event with its own set of context-specific communication skills. Research that supports identifying communication competence in specific settings, such as in the classroom (Wiemann & Backlund, 1980), is important. Real-life settings – such as in health care – offer the ideal situations for evaluating behaviors. In the nurse interaction during the transfer of a patient at shift change, nurses' observations of each other create a judgment of their own and the other's competence, based on how each other's communication behaviors met the demands of the situation and/or the relationship. For example, did the incoming nurse get enough information from the outgoing nurse about each of her/his patients to be able to confidently accept the responsibility for their care? Did she/he understand the information provided and have a chance to ask questions if there was confusion or miscommunication? Was there a chance to verify understanding of the information provided, particularly more complex details about a patient's status?

On the basis of this review of the literature, communication competence for purposes of this research is based on the perceived competence of self and others within the context of the nursing handoff at the change of shift. A patient handoff process must both satisfactorily fulfill the expectations of the outgoing nurses involved in providing appropriate patient information to the incoming nurse as shift change, as well as accomplish the goals of a safe, accurate, timely and effective handoff. The current study seeks to identify *specific communication-based factors* in nursing handoffs associated with a competent handoff as reported by nurses themselves.

Medical communication competence.

As already noted, the review of the patient handoff literature reveals that a great deal of attention has been given to the need to standardize the process as a means of reducing the chances of an error in patient care. Health care organizations responding to TJC's National Patient Safety Goals requirement to standardize the handoff have focused

largely on creating organizational tools that make use of checklists or worksheets. There is growing discussion on the merits of conducting handoffs at the patient bedside as well, which may or may not be conducive to an open, accurate and reliable exchange of information between nurses involved in transferring accountability for a patient's care at shift change.

What appears to be missing is research focused on specific communication skills and behaviors needed to facilitate the exchange of information between nurses during shift report. The checklists reviewed appeared to do little more than provide a way of selecting and presenting information in a coherent, organized fashion. As Keenan et al. (2008) found, one should not assume that nurses will engage in discussion at the handoff, even if a tool exists to prompt a discussion, or even if such an exchange could lead to more relevant, appropriate and accurate handoffs.

In searching for research on communicatively competent behaviors that facilitate information exchange in the medical setting, the one model that seemed to be the most adaptable to the patient handoff setting was a communication training system called PACE (Cegala, Marinelli, & Post, 2000; Cegala, McClure, Marinelli, & Post, 2000; Cegala, Post, & McClure, 2001; Harrington, Norling, Witte, Taylor, & Andrews, 2007). PACE (*P*resent, *A*sk, *C*larify, *E*xpress) is the result of several years of research focused primarily on the communication that occurs between the patient and the physician during a medical consultation. A precursor to the development and testing of PACE was the development and assessment of a Medical Communication Competence Scale (Cegala, Coleman, & Turner, 1998).

This line of research is part of a movement toward a model of mutual decision making between the patient and the physician, based on joint negotiation and partnership (Cegala, McClure, et al., 2000). The focus differed from the notion of physician as expert and authority, who dominated the communication with a predominantly one-way transfer of information. Early research on the patient-physician interaction had focused on the physician's communication skills rather than the patient's (Anderson & Sharpe, 1991; Cegala, McClure, et al., 2000; Post, Cegala, & Miser, 2002).

PACE is rooted in early research looking at how doctors and their patients differed in their perceptions and feelings about the communication that occurred during the medical interview (Cegala, McNeilis, Socha McGee, & Jonas, 1995). The authors

concluded that perceptions play an important role in the exchange, but more work was needed to determine how these perceptions relate to the use of communication and the implications for developing communication skills. This study was followed by work on what comprised competent communication between doctors and patients with a focus on the behavioral aspects and assessment of communication competencies (Cegala, Socha McGee, & McNeilis, 1996).

Cegala (1997) set about developing a coding scheme to assess the information exchange between doctor and patient. His discourse analysis of 32 doctor-patient interviews (16 doctors and 32 patients) looked at how categories of talk were distributed throughout the exchange and how frequency of usage of the various categories differed based on topic during the medical interview. He categorized how information is exchanged into three parts: information seeking, information giving and information verifying. He also noted relational or socioemotional categories (naming, legitimizing, affect, apologies, reinforcements, small talk, humor and relational communication functions). Cegala et al. (1998) developed and tested the Medical Communication Competence Scale (MCCS) – one for doctors and one for patients – to explore both self- and other- communication competencies in the doctor-patient interaction. The MCCS used a Likert scale that included items in information exchange and relational communication categories. They found support for their hypothesis that competent communication in the medical exchange would cluster around information seeking, giving and verifying as well as socioemotional communication.

Attention then turned specifically to determining if communication training of patients had an impact on the medical consultation with their physicians. The researchers found that patients who received training in communication based on the PACE model (either a detailed handbook 2-3 days before their appointment, or a brief written summary just before seeing the doctor) were more compliant with what the doctor recommended than untrained patients (Cegala, Marinelli, et al., 2000). Another study found that patients who received communication training were more apt than untrained patients to be effective and efficient in how they asked questions, provided doctors with detailed information about their health, verified information by summarizing what they were told by the doctor, and participated as a partner with the physician (Cegala, McClure, et al., 2000). Elderly patients participating in a similar study (Cegala et al.,

2001) who received communication training were also more engaged in information seeking, giving and verifying information as well as summarizing what they had heard than were untrained patients. Also, trained elderly patients were able to get more information from their doctors. In all three of these quasi-experimental studies, actual appointments with physicians were recorded for discourse analysis and coding.

More recently, PACE has been modified to provide training to physicians as well as parents of sick children in a study designed to improve communication about antibiotic prescriptions (Harrington et al., 2007). A communication education intervention using *PACE for Parents* and *PACE for Physicians* was implemented to improve communication between the pediatricians and the parents in order to address a growing concern about the overuse of antibiotics. Findings showed that trained parents were more likely than untrained parents to verify information and to express more concerns in the form of questions and statements. Physician participation was based on pre- and post-training comparisons. After physicians received the communication training, there was a nonsignificant trend for spending more time in a partnership relationship with the parent, as well as for encouraging more questions from parents. After removing an outlier parent from the analysis, there was a significant ($p = .03$) finding that doctors spent more time talking about treatment options after training.

This current research uses MCCS and the associated information exchange and socioemotional communication behaviors as the foundation for an online survey to assess communication competent behaviors associated with the ideal patient handoff at the nursing change of shift. This research seeks to determine if nurses associate specific communication skills related to information exchange and socioemotional communication with competent handoffs by analyzing nurses' own views about self- and other competence during the handoff. Also, this study demonstrates whether the mutual partnership model based on an exchange of information and socioemotional communication found in physician-patient discourse transfers to the nurses'
 handoff setting.

Hypotheses and Research Questions

There are many ways to conduct a patient handoff at the change of the nursing shift, with handoffs as varied as the nurses and their institutions (Hays, 2003). As evidence mounts that communication error at the handoff is linked to errors in patient

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care ("Improving hand-off communication," 2006), and with efforts ongoing at hospitals nationwide to standardize handoff procedures in compliance with TJC (2005, 2006, 2007, 2008), research is needed to determine what communication-based behaviors and other related factors are associated with best practice – the communicatively competent handoff. This current research tests the following two hypotheses and seeks to answer five research questions related to communication behaviors and other characteristics associated with the nursing handoff at change of shift. The focus will be on those behaviors associated specifically with information exchange and socioemotional communication.

Hypotheses

The hypotheses address whether *information exchange* and socioemotional *communication* behaviors are rated higher in the best (or competent) handoffs:

H1a − High-quality (best) handoffs will have higher ratings of *information exchange* behaviors than will low-quality (worst) handoffs.

H1b − High-quality (best) handoffs will have higher ratings of *socioemotional* behaviors than will low-quality (worst) handoffs.

Information exchange.

There are three dimensions associated with information exchange behaviors (Cegala, Marinellis, et al, 2000; Cegala, McClure, et al., 2000; Cegala et al., 2001):

Information giving − Cegala, McClure, et al. (2000) define information giving or provision as being related to the detail given in response to a direct question or offered without prompt. Thus, giving information during a handoff includes details provided by one nurse in response to the other nurse's direct questions, as well as information that is volunteered.

Information seeking − TJC (2005, 2006, 2007, 2008) required that standardized patient handoffs include an opportunity for incoming nurses to ask questions of the outgoing nurse. This recognizes the critical role the ability to ask questions plays in helping an incoming nurse get a more complete, accurate and up-to-date picture of a patient's status at change of shift. There are three types of information-seeking behaviors (Cegala, Marinelli, et al., 2000; Cegala, McClure, et al., 2000; Cegala et al., 2001): direct questions that solicit specific information (e.g., "Is the patient able to walk?"); assertive utterances that are declarative and appear to seek information (e.g., "Tell me more about

his reaction to that medication"); and embedded questions, or an indirect way of seeking information (e.g., "I'll bet he wanted to get out of bed to go smoke a cigarette").

Information verification − Verifying information is different from information seeking (Cegala, McClure, et al., 2000; Cegala et al, 2001). Information verifying consists of clarifying, repeating, summarizing and forecasting (information that may be given or asked for later, such as whether a callback from a physician is expected). These behaviors are critical to the handoff as a means of limiting the risk of miscommunication by assuring understanding (Dixon et al., 2006).

Socioemotional communication.

Research findings concerning aspects of the social and emotional relationships between nurses during the handoff point to a positive relationship. For example, Kerr (2002) found that while the primary purpose of the handoff was informational, the process also provided nurses a chance to socialize, discuss concerns related to the organization, and to learn (e.g., the mentor teaching the novice nurse). For nurses working with dying people, the handoff offered a chance to express feelings and concerns to colleagues (Hopkinson, 2002). Lally (1999) found evidence of handoffs aiding in enhancing the social cohesion of the team, providing a means of sharing a value system that increased cohesiveness and professionalism.

Cegala et al. (1998) considered relational aspects of the medical consultation context as those that focused on "trust, warmth and expressions of care" (p. 265), labeling these items as "socioemotional" (p. 265) communication. For purposes of this current research, this term is used to describe those characteristics of the handoff that deal with relationship building, trust, respect and concerns for the patient and each other.

Research Questions

The first research questions address whether the role of the nurse results in different ratings of information exchange and socioemotional behaviors used in the handoff:

RQ1a − Will ratings for *information exchange* behaviors differ by nursing role (incoming or outgoing)?

RQ1b − Will ratings for *socioemotional* communication behaviors differ by nursing role (incoming or outgoing)?

Nurses participating in the shift-change handoff are either the incoming or the outgoing nurse. The incoming nurse is starting his/her shift and the outgoing nurse is transferring responsibility of the patients he/she has cared for during his/her shift to the incoming nurse. Every nurse participates in each role for each shift worked (i.e., the nurse is the incoming at the beginning of the shift and then outgoing at the shift's end). In order for the incoming nurse to be effective, the outgoing nurse must provide accurate, appropriate and timely information about each patient; the incoming nurse also has a role to play in this information exchange transaction. Nurses in both the incoming and outgoing roles also make use of socioemotional behaviors to set the tone of this shared communication event. Looking at the handoff from both perspectives is important to determine if there are differences in the perceptions of communication behaviors associated with the competent handoff based on the nurse's role.

A second pair of research questions asks if there is an interaction based on the quality of the handoff (best or worst) and nursing role (incoming or outgoing) for the ratings of information exchange and socioemotional communication behaviors.

RQ2a − Will ratings for *information exchange* behaviors differ based on the interaction between handoff quality (best or worst) and nursing role (incoming or outgoing)?

RQ2b − Will ratings for *socioemotional* communication behaviors differ based on the interaction between handoff quality (best or worst) and nursing role (incoming or outgoing)?

As noted in the literature review, the handoff is a complex communication event that is highly variable with multiple factors influencing the process (Manning, 2006). Thus, a third research question asks the following:

RQ3 − What *other* communication-related factors characterize competent handoffs at the nursing change of shift report?

Discovering what other behaviors beyond information exchange and socioemotional communication nurses associate with a competent handoff will aid in better understanding the characteristics of this critical transaction. These findings may provide a footing for future research.

Chapter 2: Methods

This chapter describes the research participants, the mixed methods survey design, measures and procedures used to test the hypotheses and answer research questions concerning the communication behaviors nurses say are associated with the quality or competent handoff.

Research Participants

Registered nurses were the primary focus of this research. Research participants for this study were recruited largely from guests and members of the website *www.allnurses.com*. The nursing website was selected after a Google search on the terms related to patient handoff, bedside report, SBAR, shift report and related terms kept pointing to *allnurses.com*. The website's advertising information (retrieved Sept. 12, 2008) indicated that the site is the "world's largest nursing online community" with 7.7 million page views a month, 1.1 million visits each month (733,418 unique visitors) and 294,121 registered members. The users are 66% female. This differs from the general population estimates of a predominantly female nursing workforce with women estimated to represent from 80% (IOM, 2004) to 93% (U.S. Department of Health and Human Services, 2010) of nurses. The online nurse visiting this website may provide a more realistic view of today's nurses with higher numbers of men entering the profession than in the past due to increasing salaries and job opportunities in an area of the economy that continues to grow. Men account for 9% of nursing graduates since 1990, compared to 4% prior to 1990 (U.S. Department of Health and Human Services, 2010).

A GPower analysis suggested that 112 responses (28 in each of four cells) would be appropriate for a large (.40) effect size — $F(3,108) = 2.69$, power = 0.95; 280 responses (70 in each of four cells) for a medium (.25) effect size — $F(3, 276) = 2.64$, power = 0.95; and 1,724 responses (431 in each cell) for a small (.10) effect size — $F(3, 1,720) = 2.61$, power = .95. A goal of 400 participants was judged to be sufficient to minimize Type II error while testing the hypotheses and research questions.

Nurses voluntarily opted to participate in the online survey, which was posted for three months; thus, the sample was self-selected. The final sample of participants totaled 286 nurses who were randomly assigned to one of the four situations: Best Incoming, $n = 77$; Worst Incoming, $n = 70$; Best Outgoing, $n = 66$; and Worst Outgoing, $n = 73$. A

missing values analysis found that 8.7% ($n = 25$) of the sample respondents only answered the first question. Those respondents were left in the analysis so that their text responses describing a handoff could be included in the qualitative analysis needed to answer RQ3. Excluded from the total respondents ($n = 297$) were 11 nurses who failed to properly answer the first question (i.e., they entered nonsensical letters); thus there was no certainty that the responses that followed were related to a specific handoff based on the assigned situation and nursing role. An analysis of timed responses for each of the situations found that outliers who took less than two minutes to complete the survey did not respond to any of the other questions and thus were already excluded from the analysis ($n = 10$).

Of those who provided responses to the demographic questions, 97% ($n = 219$) were registered nurses, the primary target for this research; 1% ($n = 3$) were licensed practical nurses; 1 percent ($n = 3$) were "other." There were 199 (89%) female respondents and 25 (11%) male respondents. A chi square contingency test found that the surveyed population was statistically different from the nursing population with respect to gender [$\chi^2 (1) = 5.96, p = .015$], with more men participating than represented in the general population.

Respondents also were statistically different from the nursing population with regard to educational level [$\chi^2 (1) = 62.06, p < .0001$], reporting higher numbers of bachelor's and graduate degrees. Those with associate degrees accounted for 20% ($n = 44$) of the respondents compared to 36% of the general nursing population; bachelor's degrees, 48% ($n = 107$) compared to 37% overall; and graduate degrees, 27% ($n = 61$) compared to 13% of nurses overall. Five percent ($n = 12$) checked other, which could include nurses graduating with diplomas in nursing, a declining group that now accounts for 14% of nurses.

The survey population was an experienced one, with 43% ($n = 95$) of the respondents reporting 20 or more years of experience and 12% ($n = 27$) with 16-20 years. Those with less experience were eight new graduate nurses (4%); 49 (22%) with 1-5 years of experience; 20 (9%) with 6-10 years of experience; and 24 (11%) with 11-15 years of experience.

The nurses responding represented 38 states, with the largest numbers coming from Georgia ($n = 24, 11\%$), Missouri ($n = 19, 9\%$), Indiana ($n = 17, 8\%$), Vermont

(n = 15, 7%), Florida (n = 12, 5%), Maryland (n = 11, 5%), California (n = 10, 5%), and Delaware (n = 10, 5%). Nurses from as far away as Hawaii (n = 3, 1%), Puerto Rico (n = 1, .5%) and Alaska (n = 1, .5%) also participated. As *allnurses.com* is an international website, there were a few international respondents (n = 3, 1%).

Nurses also were asked to indicate where they currently worked. They could select more than one option. The largest group, with 108 respondents (34%), indicated they worked in an acute care setting, followed by 60 (19%) in critical care units, 48 (15%) in medical/surgical units, 38 (12%) in specialty units, 17 (5%) in academic medical centers, 13 (4%) in emergency rooms, 12 (4%) in pediatric, 5 (2%) in nursing homes/assisted living and 20 (6%) from other areas of healthcare. The majority of respondents were working in patient care settings where handoffs take place; nurses currently working in other areas of healthcare would still have had prior patient care training and experience requiring participation in shift-report handoffs and thus could provide valid responses to handoff questions.

Respondents were also asked whether the handoff described resulted in any of a number of adverse or positive outcomes; they could check more than one option. Fifty-three nurses (18.5%) said a potential error in a patient's care was avoided as a result of the handoff described. Either the nurse herself (n = 38, 13.3%) or the other nurse (n = 33, 11.5%) was praised or commended as a result of a good handoff. Potential errors occurred in 28 (9.8%) instances. Either the nurse herself (n = 5, 1.7%) or the other nurse (n = 17, 5.9%) was disciplined in some way as a result of a bad handoff. Of those responding, 127 (44.4%) indicated none of the options were applicable to their handoff.

Survey Design

A cross-sectional online survey (see Appendix B) created with Qualtrics used an introductory open-ended question followed by close-ended questions to answer the hypotheses and research questions. To operationalize the independent variables of quality and role, participants were randomly assigned to one of four situations: best handoff as the incoming nurse, worst handoff as the incoming nurse, best handoff as the outgoing nurse or worst handoff as the outgoing nurse. This assignment to only one situation limited participant fatigue by minimizing the number of questions asked, provided a framework for the nurse from which to answer the questions that followed, prevented

self-selection to handoff quality or role, and assisted in equalizing the number of participants in each cell.

The first question asked respondents to describe a handoff, based on the quality (best or worst) and role (incoming or outgoing) assigned. This recall method of inquiry allowed nurses to share their most memorable handoff experiences, providing textual answers for the qualitative analysis required to answer the research question regarding other communication characteristics that might impact handoff quality. Respondents were then directed to 48 Likert-type statements concerning the handoff they had described in the first question. Participants indicated their level of agreement with the statements using seven-point scales ranging from 1 (strongly disagree) to 7 (strongly agree). Participants had to respond to each statement before proceeding to the next one; they had the option of selecting "not applicable" or "choose not to answer." Answering the demographic questions at the end of the survey was optional.

Measures

The Medical Communication Competence Scale (MCCS; Cegala et al., 1998) was selected as the foundation for scales related to nursing handoff behaviors associated with information exchange (information giving, information seeking and information verifying) and socioemotional communication. The MCCS was designed for physician-patient interactions; however, there are many similarities between physician-patient and outgoing-incoming nurse interactions. The physician and the outgoing nurse may both be viewed as the experts in positions of authority as both hold the information the patient or incoming nurse needs to achieve their goals. In the case of the handoff, the incoming nurse relies on the quality of the shift report provided by the outgoing nurse in performing her patient-care duties. But the incoming nurse, as with the patient, also plays a role in making this "event" one that is a more complete information exchange rather than a one-way transfer of information that could open the door to information that is omitted, inaccurate or irrelevant. The MCCS assesses behaviors as reported by "self" and "other," using a Likert-type seven-point scale to measure degree of agreement with prompts (e.g., "I did a good job of…" and "The other ….did a good job of…."). The "self" and "other" assessments were maintained in the modified MCCS used for assessing nursing handoffs as a means of gaining additional insight from nurses about what constitutes a competent handoff.

In the original MCCS (see Appendix C), doctors rated their own use of behaviors associated with information exchange and socioemotional communication based on 24 statements; patients rated the doctors' use of these behaviors on 24 statements as well. Patients rated their own use of these behaviors by rating 16 statements; physicians assessed patients' use of the behaviors based on 13 items. Thus doctors had to respond to a total of 37 statements (24 self competence, and 13 patient competence); patients had to respond to 40 statements (16 self competence and 24 doctor competence). The items were parallel, with the exception of three items specific to the doctors' assessment of a patient's competence that were not appropriate for a patient's self assessment. There were also slight modifications to the language specific to each audience. Cegala et al.'s cluster analysis found that, as predicted, the items assessing doctors' communication competence clustered around the four dimensions with reliability coefficients of .86 for information giving, .75 for information seeking, .78 for information verifying and .90 for socioemotional communication. The statements assessing patient competence also clustered around the four dimensions with reliability coefficients of .79 for information giving, .76 for information seeking, .85 for information verifying and .92 for socioemotional communication.

Dependent Variables

For purposes of the current research, modifications were made to the MCCS to be specific to the role of the incoming or outgoing nurse participating in patient handoffs at the change of shift. The changes made to the three dimensions of information exchange (giving, seeking and verifying) and socioemotional communication were informed by the literature review concerning nursing handoffs.

Information giving.

Information giving concerns the detail that is given in response to a direct question or offered voluntarily without prompting. The original nine information-giving items for physicians' self-competence in the MCCS were modified and increased to 10 for the outgoing nurse role to better represent the types of information TJC suggests the outgoing nurse provide to the incoming nurse at change of shift report. This includes details about the patient's current condition, care, treatment, services, recent or anticipated changes and medications ("Joint Commission Accreditation Program: 2009 Hospital National Patient Safety Goals," 2008). The role of the incoming nurse is less

about information giving (unless she or he has previously cared for the patient, and thus has relevant historical information to share); hence there are only four items in this dimension for the incoming nurse compared to six items on the original MCCS for patients. These four items are parallel to four of the 10 information-giving items for the outgoing nurse.

Information seeking.

The opportunity to gain information by directly asking questions or soliciting information indirectly (such as by making declarative statements that are actually requests for more information) can lead to a more complete and accurate picture of a patient's status at the change of shift. For both the incoming and the outgoing nursing role, there are five parallel items on the modified MCCS. This compares to four items for the physicians and three items for patients in the original scale. The behaviors associated with the physician were modified and increased by one additional question for the two nursing roles. The additional question addressed nurses asking for recommendations or input. This additional statement reflects a strategy now being used in current nursing handoff tools such as SBAR (Groff & Augello, 2003; Haig, et al., 2006; Hohenhaus, 2006; Hohenaus, Powell, et al., 2006; Manning, 2006).

Information verifying.

Nurses also need to verify or clarify that the information provided during a patient handoff is accurate and to check their understanding of the information given to them by the other nurse. Reading back or repeating of information in the medical setting is a strategy used in other high-reliability industries to prevent errors at the handoff (Dixon et al., 2006) and is being used by many hospitals as a means of reducing errors in patient care. Both the incoming and the outgoing nursing role have five parallel items on the modified MCCS. This compares to the four items on the original MCCS that assessed both the doctor's and the patient's self competence in verifying information. A statement used in the physician and patient scale used the words "review" and "repeat" in the same statement. These were separated into two statements for the nursing handoff information verifying scale. Nursing input indicated there was a difference between the two actions: reviewing indicated a summary approach and repeating was more specific.

Socioemotional communication.

How nurses relate to one another may impact the quality of the nursing handoff. Cegala et al. (1998) defined socioemotional communication between the physician and patient as those behaviors that foster trust, warmth, and concern. In the original MCCS, there were only two socioemotional items for the patient in contrast to the seven items associated with the physician's communication competence. The nurse-to-nurse relationship is somewhat different from that of the physician-patient relationship. In the nursing relationship, there is a collegiality of two employees in similar, recurring roles who have shared responsibility for the care of one or more patients; for each shift, a nurse is both the incoming and the outgoing nurse. In the medical consult, the physician is always the person who is the authority or expert, with the patient there specifically to consult with this expert regarding a specific medical condition. Their social and relational roles are fixed and they generally are not colleagues. For purposes of this research, all seven items associated with the physician in the original MCCS were left in both the incoming and outgoing nurse handoff scale.

The resulting nursing handoff communication competence scale (see Appendix C) had parallel items for the incoming and outgoing nurses for information seeking (five items), information verifying (five items) and socioemotional (seven items) dimensions. Of the 10 items in the information-giving dimension for the outgoing nurse role, four are parallel to four information-giving items for the incoming nurse role. The nursing handoff communication competence scale for the incoming nurse has 21 items; the outgoing nurse version has 27 items. Thus, between responding for one's self (as incoming or outgoing) and for the other person (as outgoing or incoming), each participant was asked to respond to a total of 48 statements (21 self and 27 other items for the incoming nurse; 27 self and 21 other items for the outgoing nurse).

Independent Variables

Nurses who agreed to participate in the dissertation research were assigned to one of four situations in order to operationalize the independent variables of quality and role: Best Incoming, Worst Incoming, Best Outgoing and Worst Outgoing. Their first instruction upon entering the survey was to:

> Think back to a time when you were the (role) nurse and participated in the (quality) handoff of a patient's care at the nursing change of shift. Describe below what made this handoff the (quality) one that you can remember as the (role)

nurse. Consider such details as the setting, what the other nurse said, what you said, the time it took, the tools you used, the location, etc. – whatever made this handoff the (quality) one you can remember.

The textual responses to this question aided nurses in both recalling a specific handoff to refer to when answering the information exchange and socioemotional scales as well as provided text for qualitative analysis necessary to answer RQ3 regarding other communication characteristics associated with a competent handoff.

Subject Characteristics

Demographic questions at the end of the survey were optional for respondents. The questions addressed outcomes associated with the handoff described (e.g., avoiding a potential error in patient care, occurrence of an error in patient care, discipline as a result of the handoff, or praise as a result of handoff), area of employment, gender, state of residence, current position, experience and highest level of education.

Pilot Study

A pilot study was conducted to check reliability and factor structure of the modified MCCS. Twenty-two registered nurses with patient care experience participated in a pilot test to check reliability and factor structure for the modified MCCS. They were randomly assigned to one of four situations: Best Incoming ($n = 3$); Worst Incoming ($n = 6$); Best Outgoing ($n = 5$); Worst Outgoing ($n = 8$). Eight of the nurses were colleagues or associates of the researcher. They were asked through an e-mailed invitation to complete the online survey and/or forward the invitation to other nurses; a link was provided to the survey that was posted on Qualtrics in September 2009.

Cronbach's alphas for each of the dependent variables associated with information exchange (giving, seeking and verifying) and socioemotional behaviors were similar overall to those found by Cegala et al. (1998). Across the four situations (quality x role), reliabilities were excellent for all four scales, ranging from .81 to .99, with one exception of .68 for the scale related to information verifying behaviors specific to the incoming nurse's self-assessment in the worst situation.

Modifications were made to the flow and language of the survey on the basis of comments from pilot participants. These included changing the order of questions in each of the four situations to be consistent (i.e., starting with "self" assessments followed by "other" assessments for each situation), modifying the question regarding education to

offer only general degrees that are not nursing specific, and further refining some of the survey language to be consistent and clear about the role being assessed in each of the four situations. Once these changes were made, 22 volunteers from a class of 223 graduate nurses from the University of Kentucky served as editors, taking the survey with instructions to look for any typographical errors or problems with the "flow" (e.g., checking to make sure there were no inconsistencies in language regarding the role of the nurse). They had no suggestions for improvements.

Dissertation Study

Findings of reliability and factor structure for each of the scales associated with information exchange (information giving, information seeking and information verifying) and socioemotional communication behaviors are discussed in the following sections. As shown in Table 2.1, reliability was acceptable for each scale.

Table 2.1. Means, Standard Deviations and Cronbach's Alpha for All Scales

Scale	n	M	SD	α
Information Giving	236	5.51	1.62	.94
Information Seeking	225	5.28	1.51	.94
Information Verifying	223	5.25	1.53	.95
Socioemotional Communication	221	5.57	1.25	.95

Note. The range was 1 (strongly disagree) to 7 (strongly agree). Options 8 (choose not to respond) and 9 (not applicable) were removed from the data before analysis.

Dependent variables.

Information giving – For purposes of checking reliability and factor structure, analysis was only done on the four parallel items for the incoming and outgoing nursing roles. The modified measure for information giving has a composite Cronbach's alpha of .94 [$M = 5.51$, $SD = 1.62$]. A principal components factor analysis found a two-factor structure accounting cumulatively for 86.21% of the variance. The two factors are reflective of the "self" and "other" responses concerning a nurse's use of information-giving communication behaviors. Since this current research is concerned about handoff

quality and nursing role, and not on whether the assessment refers to the self or other, the two-factor structure was determined to not be relevant for purposes of analysis and scales were created for information giving overall.

Information seeking – The modified measure for information seeking has a composite Cronbach's alpha of .94 [M = 5.28, SD = 1.51]. A principal components factor analysis found a two-factor structure accounting cumulatively for 82.93% of the variance. Again, the two factor extractions are reflective of the "self" and "other" responses concerning a nurse's use of specific communication behaviors.

Information verifying –The modified measure for information verifying has a composite Cronbach's alpha of .95 [M = 5.25, SD = 1.53]. A principal components factor analysis found a two-factor structure accounting cumulatively for 88.31% of the variance. As before, the two factors are reflective of the "self" and "other" responses concerning a nurse's use of specific communication behaviors.

Socioemotional communication – The socioemotional communication scale has a composite Cronbach's alpha of .95 [M = 5.57, SD = 1.25]. A principal components factor analysis found a two-factor structure accounting cumulatively for 82.75% of the variance. The two factors are reflective of the "self" and "other" responses concerning a nurse's use of specific socioemotional communication behaviors.

Correlations.

Participants indicated their level of agreement with scale items related to the patient handoff recalled in the first question of the online survey. They indicated their level of agreement with each statement, using a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Since a response was required for each statement, they also had the option of selecting 8 for "not applicable" or 9 for "choose not to answer." "Not applicable" accounted for .3% to 7% of the responses; "Choose not to answer" accounted for .7% to 1.4% of the responses. The responses for both were deleted prior to analyses. These responses accounted for no more than 7%. A Pearson Product Moment Correlation analysis revealed a significant positive relationship among all scales (see Table 2.2).

Table 2.2. Pearson Product-Moment Correlations Matrix for All Scales

		Information Giving	Information Seeking	Information Verifying	Socio-emotional
Information Giving	Pearson Correlation	--			
	Sig. (2-tailed)				
	N	236			
Information Seeking	Pearson Correlation	.870(**)	--		
	Sig. (2-tailed)	.000			
	N	221	222		
Information Verifying	Pearson Correlation	.809(**)	.879(**)	--	
	Sig. (2-tailed)	.000	.000		
	N	220	219	223	
Socio-emotional	Pearson Correlation	.728(**)	.792(**)	.785(**)	--
	Sig. (2-tailed)	.000	.000	.000	
	N	221	219	217	221

*Note.*** Correlation is significant at the $p < 0.01$ level, two-tailed.

Procedure

An online invitation to participate in the research was posted from mid-February to mid-May 2010 in two areas of www.allnurses.com: the academic research forum and a discussion thread initiated by the researcher concerning patient handoffs. The website's "Terms of Agreement" limit postings to these two areas. Key search words linked to the two postings were handoff, patient handoff, shift report, SBAR, competent handoff, shift change and transfer of accountability.

The online invitation read as follows:

If you are a nurse who has participated in shift change reports (patient handoffs), I need your help! Please take a few minutes to answer some questions about the best or the worst handoff that you can remember. What you and other nurses say are important characteristics of a shift report is the focus of my doctoral dissertation research in communication. Please help by linking to this site for more information (link provided).

Interested survey participants were then linked to the informed consent screen. Once the nurse hit the "I agree" button, she or he was randomly assigned to one of four

quality/role situations: best handoff as incoming nurse, worst handoff as incoming nurse, best handoff as outgoing nurse or worst handoff as outgoing nurse.

After the survey had been posted for a month, accrual was slowing and only 150 surveys had been completed. Two steps were taken to generate interest in the online postings of the survey invitation. First, when something new is posted on a discussion thread, participants at allnurses.com receive a log of those new postings. Thus, to call attention to the invitation, the researcher reposted the invitation about every two weeks during the remaining two months the survey was posted. Each time this was done, additional nurses responded.

Second, the University of Kentucky Institutional Review Board approved a request to seek additional participants by sending an e-mail invitation to a select group of nurses who had access to appropriate nursing professionals. The e-mail invitation (the same as noted above with the additional request that the respondent share the invitation with other nurses) contained the link to *www.allnurses.com* so that all survey participants entered the survey process through that portal. The nurses contacted included the deans of two Midwestern nursing colleges, an associate professor of a graduate nursing program, a nursing administrator with access to nurses nationwide participating in a widely respected national new nurses' orientation program, a chief nursing officer at a large community hospital in a mid-Atlantic state, and a nursing executive with access to more than 2,000 nurses nationwide who are members of a national nursing informatics association. By the end of the third month, 297 responses had been received.

There was no way to identify participants, thus all responses were anonymous. Data were analyzed in the aggregate and made available only to the researcher and dissertation advisors. After the data were collected and analyzed, the survey was taken offline.

Chapter 3: Results

This chapter presents the results of the analyses used to test the hypotheses and research questions concerning communication behaviors associated with the competent nursing handoff at the nursing change of shift. For all results, higher scores reflect greater endorsement of the behavior assessed.

Hypotheses

Independent samples student's *t* tests were used to test the hypotheses predicting a main effect of quality on the ratings for information exchange and socioemotional communication represented in the modified Medical Communication Competence Scale.

H1a – There was support for this hypothesis predicting that high-quality (best) handoffs will have higher ratings of information exchange behaviors – information giving, seeking and verifying – than will low-quality (worst) handoffs (see Table 3.1). For each dimension of information exchange, the "best" handoffs scored significantly higher than the "worst" handoffs. The effect sizes were large (all rs > .70).

Table 3.1. Means, Standard Deviations and Independent Samples Student's *t* Tests for

Handoff Quality on Information Exchange Behaviors

Behavior	*M*	*SD*	*df*	*t*	*p*	*r*
Information Giving			139.50	12.21**	<.0001	.72
Best	6.47	.74				
Worst	4.35	1.64				
Information Seeking			154.29	13.89**	<.0001	.74
Best	6.22	.83				
Worst	4.10	1.32				
Information Verifying			156.44	13.03**	<.0001	.72
Best	6.18	.87				
Worst	4.09	1.39				

** $p < .01$, two-tailed

H1b – This hypothesis predicting that high-quality (best) handoffs will have higher ratings of socioemotional communication behaviors was also supported (see Table 3.2).

Table 3.2. Means, Standard Deviations and Independent Samples Student's *t* Tests for

Handoff Quality on Socioemotional Communication Behaviors

Behavior	*M*	*SD*	*df*	*t*	*p*	*r*
Socioemotional Communication			161.93	12.44**	<.0001	.70
Best	6.31	.77				
Worst	4.63	1.12				

** $p < .01$, two-tailed.

Research Questions

Independent *t* tests were also used to test RQ1a and RQ1b concerning the main effect of handoff role (incoming or outgoing nurse) with the dimensions of information exchange and socioemotional communication.

RQ1a – This research question sought to answer whether use of information exchange communication behaviors differed by a nurse's role (incoming or outgoing). There was a statistically significant finding (see Table 3.3) only for the use of information verifying behaviors with a higher mean (*M = 5.47)* for incoming nurses than for outgoing nurses (*M =* 5.04). There were no statistically significant differences for information giving and information seeking. Thus it appears that the incoming nurse is more likely to rate higher agreement for information verifying behaviors such as clarifying, repeating and summarizing than is the outgoing nurse.

Table 3.3. Means, Standard Deviations and Independent Samples Student's *t* Tests for

Nursing Role on Information Exchange Behaviors

Behavior	*M*	*SD*	*df*	*t*	*p*	*r*
Information Giving			213.50	-.76	.447	
Incoming	5.43	1.77				
Outgoing	5.59	1.48				
Information Seeking			218.8	-.54	.593	
Incoming	5.23	1.54				
Outgoing	5.34	1.48				
Information Verifying			219.73	2.12*	.035	.14
Incoming	5.47	1.42				
Outgoing	5.04	1.61				

* *p* < .05, two-tailed.

RQ1b – There was a significant difference in how incoming and outgoing nurses rated socioemotional communication behaviors (see Table 3.4). Incoming nurses showed higher agreement with communication that expresses trust, caring and warmth than did outgoing nurses.

Table 3.4: Means, Standard Deviations and Independent Samples Student's *t* Tests for *Nursing Role* on Socioemotional Communication Behaviors.

Behavior	*M*	*SD*	*df*	*t*	*p*	*r*
Socioemotional Communication			212.67	2.03*	.043	.14
Incoming						
	5.75	1.09				
Outgoing						
	5.41	1.38				

* *p* < .05, two-tailed.

For the second set of research questions, univariate analyses were used to test the interaction of handoff quality and nursing role with information exchange and socioemotional communication behaviors.

RQ2a – The only significant finding (see Table 3.5) for the interaction of quality of handoff (best or worst) and nursing role (incoming or outgoing) with information exchange behaviors was with information giving [$F(1, 232) = 17.91$, $p < .0001$, *partial eta*^{2} = .072]. In the best handoffs, both the incoming and the outgoing nurses report very strong agreement with the presence of information giving behaviors with only a 0.18 difference between the two roles (Incoming = 6.35, Outgoing = 6.37). In the worst handoffs, however, there was a larger difference – 1.14 – in scores between the roles, with the incoming nurse scoring 3.67 and the outgoing nurse 4.81. For the "best," role is irrelevant. For "worst," role matters.

Table 3.5. Means, Standard Deviations and *F* Tests for the Interaction of Quality and

Nursing Role on Information Exchange Behaviors

Behavior	*M*	*SD*	*df*	*F*	*p*	*eta²*
Information Giving			1, 232	17.91**	<.0001	.072
Best						
Incoming	6.55	.48				
Outgoing	6.37	.93				
Worst						
Incoming	3.67	1.60				
Outgoing	4.81	1.51				
Information Seeking			1, 218	.792	.374	.004
Best						
Incoming	6.15	.77				
Outgoing	6.30	.88				
Worst						
Incoming	3.87	1.37				
Outgoing	4.28	1.27				
Information Verifying			1, 219	.032	.857	<.0001
Best						
Incoming	6.30	.69				
Outgoing	6.04	1.03				
Worst						
Incoming	4.21	1.33				
Outgoing	4.01	1.44				

Note. **$p < .01$, two-tailed.

RQ2b – There was no significant difference (see Table 3.6) in the use of socioemotional behaviors based on the interaction of handoff quality and nursing role.

Table 3.6. Means, Standard Deviations, Standard Errors and *F* Tests for the Interaction of *Handoff Quality* and *Nursing Role* on Socioemotional Communication Behaviors

Behavior	*M*	*SD*	*df*	*F*	*p*	*eta*^{2}
Socioemotional			1, 217	.322	.571	.001
Communication						
Best						
Incoming	6.37	.56				
Outgoing	6.24	.95				
Worst						
Incoming	4.79	1.00				
Outgoing	4.52	1.12				

RQ3 – The third research question sought to discover through qualitative analysis other communication-related factors nurses say characterize competent handoffs at shift report. Text came from nurses' responses (*n* = 286) to the first survey question asking them to describe a nursing handoff based on their assigned situation (Best Incoming = 77, Worst Incoming = 70, Best Outgoing = 66, Worst Outgoing = 73).

Text answers were reviewed for words or phrases that were communication-related. Those units were then categorized based on emerging key themes. Within those categories, further analysis identified the most frequently recurring words or phrases to help identify specific communication-related characteristics that impacted handoffs. As expected, based on the previously reported literature review of handoffs, the categories that emerged were those related to information giving, information seeking, information verification and socioemotional communication. Other non-communication categories that could impact the quality of the competent communication handoff were location,

environment, tools used/type of handoff and time. The following provides a summary of the results of this qualitative analysis.

Information giving.

In the *best* handoffs, incoming nurses most frequently used the following terms to describe how information was given to them: "organized," "complete," "succinct/to the point," "comprehensive," "pertinent" and "detailed." Several nurses said the outgoing nurse "painted a picture" of the patient so that the incoming nurse "felt as if I had taken care of the patient myself." Outgoing nurses used similar terms to describe their handoff, including "organized," "concise," "specific" and "complete." These nurses also expressed that good handoffs provided a "comprehensive picture" or "snapshot" of the patient. The outgoing nurse was more apt to mention that a handoff was good if she or he was able to answer the other nurse's questions (which is key to information giving). Both incoming and outgoing nurses noted that handoffs were easier if the incoming had had previous experience caring for a patient; it meant that less information needed to be provided by the outgoing nurse, usually only that related to any changes in the patient's condition.

In the *worst* handoffs, incoming nurses described the information given by the outgoing nurse as predominantly "inaccurate" and "incomplete." Outgoing nurses were described as being "distracted" and "disorganized," or were "too busy to have a complete picture of the patient" or did not know enough about the patient to answer any questions or offer any details. As one nurse noted, the outgoing nurse "did not have the big picture." Incoming nurses also noted that handoffs were negatively impacted by outgoing nurses who appeared to be in a rush to leave, or who left before handoff and were not available to answer questions. Both incoming and outgoing nurses noted that information giving at handoff should not include "complaints," "stories," "chit chat" or anything that is irrelevant to patient care.

In addition to the characteristics of the best or worst handoffs, incoming nurses offered a list of the types of details about patients that they would like the outgoing nurse to provide. TJC suggests that handoffs include details about a patient's current condition, care, treatment, services, recent or anticipated changes and medications, along with pertinent historical patient data. The most commonly mentioned types of information to include were general patient demographics such as age, gender, diagnosis, current status and history (both medical and current event); plan of care; lab and radiology tests

(results, trends, pending); allergies; IVdrips/fluids/tubes; wounds/dressings/skin assessments; pain management; code status; and any relevant personal/social information regarding the patient or family that might alter patient care. The survey respondents provided richer detail about the preferred organization of handoff information, with many describing the best handoffs as those that used a body systems "head-to-toe" approach. Several seemed to favor limiting the information given to that which was "pertinent" and/or "abnormal" rather than hearing details that were not of concern to the patient's current/immediate needs. Some nurses also mentioned that it was helpful if the outgoing nurse noted what tasks needed to be done first.

Information seeking.

Generally, the person seeking information is the incoming nurse who needs to be informed about the patients she or he is about to assume responsibility for. In the *best* handoffs, the most oft-repeated characteristic was the opportunity to ask questions. As with information giving, incoming nurses noted that for continuity of care, the best handoffs were those that involved patients they had cared for previously, so they needed to obtain less information from the other nurse. References were also made to wanting time to look at patient charts, medical records, electronic records, etc., before the handoff and/or during the handoff together with the outgoing nurse. One nurse summed up the optimal handoff as that in which she got all of the information she needed so that "I felt prepared to hit the ground running."

In the *worst* handoffs, outgoing nurses mentioned worrying when the incoming nurse did not make notes during the handoff, or if she or he "did not listen," or "did not pay attention." Cause for concern was the incoming nurse who did not make eye contact or who did not seem to seek the information the outgoing nurse thought was important, saying such things as "whatever I need I can get from the chart," or "give me the down and dirty and I will figure the rest out." Some outgoing nurses also complained about incoming nurses who asked too many questions, particularly if they interrupted the outgoing nurse before he or she had a chance to share that information.

Incoming nurses had a slightly different view. Bad handoffs for those seeking information included those in which there was no chance to ask questions or if the outgoing nurse appeared annoyed by efforts to get answers to questions. Outgoing nurses who responded by saying, "I don't know" when asked a question were also frequently

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mentioned as culprits in bad handoffs. Incoming nurses didn't want to have to "prod" for important information or "be left to figure things out on my own" or have to "do a lot of digging for missing information." This took away the time they could be spending with their patients.

Information verifying.

For *worst*-case handoffs, none of the nurses' comments addressed information verifying behaviors (e.g., clarifying, repeating, summarizing, etc.). Only a few outgoing and incoming nurses commented on these behaviors for the *best*-case handoffs, using much the same terminology for both roles. A few of the comments in best handoff scenarios addressed being able to "ask questions to clarify," "double-checking information" and "double check(ing) high-risk IV meds." One incoming nurse said it was important to feel like she or he "could seek clarification to ensure optimal continuity of care." One outgoing nurse noted that she wanted to be stopped during the handoff "only when needing to clarify some piece of information." What was of interest was how frequently some nurses mentioned verifying patient information (including looking at IV/drip lines, wounds, tubes and the overall patient's condition) when discussing handoffs that took place at the patient's bedside. More details about these results will be provided under the category of handoff location.

Socioemotional communication.

Nurses had a lot to say – both good and bad – about behaviors that are associated with socioemotional communication, which includes communication that builds trust, conveys warmth and expresses concern. In the *best* situations, a recurring theme is one of appreciation when the outgoing nurse introduces the incoming nurse to the patient and family members, particularly if they add something like "she is a phenomenal nurse with many years of experience," or "I know I'm leaving you in good hands." These comments also will be addressed further under the category of location. The incoming nurse also appreciated handoffs that started with a "hello" from the outgoing nurse who looked at her or him, delivering the handoff information in a calm, focused and professional manner. The outgoing nurse wanted to be thanked for the handoff, even complimented on the care she or he had provided to the patient; she did not want to feel judged or criticized for her patient care. Outgoing nurses wanted understanding if tasks had been left undone due to unexpected patient care needs. They wanted the incoming nurse to be receptive,

attentive, and in "a decent mood." As one nurse put it, "Everyone in a positive, energetic mood is better than when everyone is miserable."

For the *worst* handoffs, incoming nurses' comments included dealing with outgoing nurses who did not make an attempt to make sure they could be understood, such as one nurse who "spoke a mile a minute and refused to slow down." This seemed to indicate a lack of concern for meeting the needs of the incoming nurse. They wanted to be treated with respect, not like the nurse who "spoke down to me as if having questions was a direct reflection of my intelligence." If the outgoing nurse left too many tasks undone, particularly if there appeared to have been plenty of time to complete those tasks, it was chalked up to a bad attitude – she or he "didn't seem to care."

Outgoing nurses said that the worst handoffs were those that involved dealing with oncoming staff "who did not care" about the patient, who demanded that tasks be done, or who judged or criticized patient care provided by the outgoing nurse. Phrases used included "rude," or "feeling dismissed" or "ignored" by the other nurse who preferred to chat with other nurses than listen to the handoff. One outgoing nurse said that incoming nurses "sipping coffee, complaining about what tasks had not been completed by outgoing nurses failed to realize that they are a problem."

Location.

By far, the most frequently mentioned location for the handoff in the *best* scenarios was by the patient's bedside for both incoming and outgoing nurses. The only mentions of bedside handoffs in worst-case scenarios had to do with a nurse's concern for confidentiality when talking to a patient about HIV status results in front of family members, or when an incoming nurse refused to go with the outgoing nurse to check on a patient together. Nurses generally did more than just cite the patient's bedside as the location of the handoff; they often expressed reasons they preferred this location to other locations. Pluses included the ability to introduce the oncoming nurse to the patient and family, perhaps adding a comment to build rapport between that nurse and the patient (e.g., "you are in good hands"), verifying critical patient information (e.g., IV/drips, pain medication, tubes, general condition) and the ability to involve the patient in the handoff. One nurse wrote that bedside shift reports work well because, "The patient is involved and has the opportunity to listen to our report, get involved, correct us if we are wrong about any history or information or anything else. This gives them the opportunity to ask

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questions and really be an active part in our care for them." Some nurses noted that shift report might take place in two locations, either starting or ending in the hallway outside the patient's room or at the nurse's station, with a stop by the bedside as well.

Other locations noted for handoffs that appeared in the best handoff scenarios included nurses' stations that were "out of earshot of visitors," alcoves or pods near a patient's room and "private" areas. Areas mentioned for the worst handoffs included nurses' stations, small report rooms, a patient family room with no family, a conference room and a medical cart in the hallway. What seemed to be most important with these areas was not so much the location as the environment, discussed in the following section.

Environment.

Descriptions concerning the location for the handoff often included adjectives that were more about the setting or environment in which the handoff took place. The nurses associated quiet, calm areas with *best* handoffs, where there was minimal distraction or interruptions from other staff, patients and families. One nurse noted that an overlap of staff at handoff so that patient call lights could be answered helped prevent disruption.

The *worst* handoffs took place in chaotic environments, with loud noises, continuous call lights and family standing nearby, making it hard for nurses to concentrate. Nurses also mentioned multiple handoffs being done by several nurses crowded into a breakroom. Delivery of patient food trays, or the admission or transfer of patients during handoffs also caused handoff disruptions.

Tools/Type.

Given that TJC has required hospitals to standardize handoffs, many organizations have turned to templates, checklists or organizational tools to assure that patient information shared at the handoff is consistent in format and content. TJC is also concerned about whether use of taped/recorded handoffs provides an opportunity for incoming nurses to talk with and question the outgoing nurse before she or he ends their shift. Thus, it was informative to view what nurses had to say about both the tools used and the type of handoff in the best and worst case situations.

Best handoffs for both the incoming and outgoing nursing handoff scenarios were more frequently done face-to-face. The most frequently mentioned type or tool used in the best handoff scenarios was the SBAR (Situation-Background-Assessment-

Recommendation) or a variation of SBAR template. As noted in the literature review, this tool was cited by TJC as an example of what hospitals could use to standardize handoff procedures and has been implemented by many organizations. None of the comments, however, offered any insight as to whether the use of this tool was helpful in the best handoffs.

For the *worst* handoffs, the most frequently mentioned type or tool was taped or recorded handoffs. Nurses noted that there were problems with tape recordings, including out-dated/old tapes or machines that made it difficult to hear the outgoing nurses' report, a nurse's hard-to-understand accent on the tape, and outgoing nurses who left their shift before incoming nurses could listen to the taped report and ask questions or verify information. The only comment made specific to the use of SBAR was by a nurse describing a worst-case scenario who noted that SBAR had been implemented at her or his hospital, "but it was rarely used." Other nurses describing bad handoffs said that it wasn't helpful to be handed a form by the outgoing nurse who then left before questions could be asked and answered. One nurse also noted that the standardized form used by her or his facility asked the outgoing nurse to fill in blanks about "the basics" of a patient's condition and needs. The problem was that most of the outgoing nurses simply wrote, "OK." Thus, the nurse said, the form was "a waste of paper." Another nurse noted that her nursing unit had a computerized program; she feared that relying on it alone might lead to missed information. One nurse noted the use of dry eraser boards in a patient's room "for all to see," with no indication of whether this was positive or not. Not using any form of a written tool was also noted in worst-case handoffs.

Both incoming and outgoing nurses in the best handoffs mentioned use of tools such as flow sheets, mini-data sheets, computerized tools, printed handouts, standard history forms and Kardex systems. Mentioned in the worst handoffs were report sheets created by the nurse, nursing chart left at the bedside, pre-printed sheets, interdisciplinary plan of care, Kardex, a dry eraser board "for all in the room to see," "usual cheat sheet," computer blocks "that note when something is done," patient problem list and census sheets "that are rarely up to date." Other than being mentioned in descriptions of the best or worst handoffs, there were no indications as to whether use of these tools impacted the quality of the handoff.

Time.

　The issue of time was expressed in a mixture of terms from specific to general. For the incoming nurses in the *best* handoffs, the most frequent terms used were "quick," "brief," "short," and "to the point." Incoming nurses also said they wanted enough time so as not to feel rushed or hurried. In the *worst* scenarios, the incoming nurses used terms such as "too short," "took forever," "too long," and "feeling rushed." A nurse wrote about a handoff that took two hours, completed only when a manager made the outgoing nurse sit down and finish. Some nurses provided specific times in the best scenario that ranged from 3 minutes per patient, 10-15 minutes for two patients, and 20-30 minutes in general. In the worst scenarios, only one comment specifically stated a time length for a patient (one minute), with another noting 30 minutes for six patients.

　Outgoing nurses in the *best* handoffs used descriptions that included incoming nurses arriving on time, being prepared on time, not feeling rushed/having enough time and being "short and to the point." Specific times mentioned ranged from 3-7 minutes per patient, 10-15 minutes (no mention of number of patients), and 30 minutes overall. Outgoing nurses in the *worst* handoffs tended to be more specific, offering examples of handoffs that ranged from a "minute or two," 4-5 minutes per patient, 30 minutes for one patient, and 45 minutes for four patients. One nurse said that "after 40 minutes, we still did not finish the handoff and we were both in tears." Other time-related factors included incoming nurses who arrived late for their shift, and feeling like "there is never enough time."

　This chapter reviewed the results of both the quantitative and qualitative analyses of the data collected from the online nursing handoff survey. The following chapter will discuss the interpretation of these findings to offer insight into the complicated communication event known as the nursing handoff at the change of shift.

Chapter 4: Discussion

While there are many types of handoffs in the health care setting (e.g., nurse to nurse at change of shift, unit to unit, doctor to doctor, facility to facility, etc.), this current research focused on the handoff between nurses at the change of shift. The nursing or patient handoff – sometimes called a shift report or transfer of accountability – is a vital interaction during which critical information about a patient's medical condition is passed from one nurse to another. Handoffs in general have been identified as a major source of communication-related patient care errors. This led The Joint Commission (TJC), the leading organization for voluntary accreditation of hospitals and other health care facilities, to mandate that this process be standardized. Efforts to standardize nursing handoffs have primarily been focused on check lists and organizational tools for providing specific information about a patient's situation (e.g., SBAR), location (e.g., bedside) and handoff type (e.g., face-to-face, audiotaped, computer generated, etc.).

This dissertation examined the nursing handoff from a communication perspective, identifying *specific communication behaviors* that nurses say constitute a communicatively competent or quality handoff. Understanding what underlying communication behaviors contribute to quality handoffs may be helpful in improving this critical interaction *regardless* of what tool, type, location or any other attempt at standardization is used. This chapter will provide an interpretation of the research findings based on the results of analyses discussed in the previous chapter. The limitations of the study will then be reviewed, followed by suggestions for future directions.

Interpretation of Results

Two hypotheses and four research questions explored whether use of certain communication behaviors are rated highly in the best nursing handoffs, and whether those behaviors differ by role (incoming or outgoing nurse) or by the interaction of role and quality. A fifth research question addressed other communication-related characteristics that impact handoffs and also shed light on findings for the hypotheses and other research questions.

Hypothesis 1a

Support was found for hypothesis 1a that predicted quality (best) handoffs would have higher ratings from nurses for the three dimensions of *information exchange*

(information seeking, giving and verifying). These findings support TJC's National Patient Safety Goals (2005, 2006, 2007, 2008) that suggest standardized handoffs include two of the dimensions of information exchange − an opportunity for caregivers to ask (information seeking) and respond (information giving) to questions when transferring responsibility for a patient's care. Handoffs that limit an opportunity for questions and answers may be a source of communication-based errors (Lee & Garvin, 2003; Perry, 2004).

However, the current research findings provide evidence of a third dimension in quality handoffs – the use of behaviors associated with information verifying. The findings also provide insight into more specific behaviors that go beyond simply asking and answering of questions. The following takes a closer look at the behaviors associated with information exchange and how these findings support the concept of a communicatively competent handoff.

Information giving.

This dimension refers to the details given in response to a direct question *as well as* the information that is offered without prompting (Cegala, McClure, et al., 2000). When considering simply the criterion of quality, nurses strongly agreed ($M = 6.47$, $SD = .74$) that the best handoffs included information-giving elements related to both answering questions and offering specific types of information without prompting. Given that providing information about a patient is the fundamental purpose of a handoff, it makes sense that even in the worst situations, ratings were above the midpoint of the seven-point scale for information giving ($M = 4.35$, $SD = 1.64$).

The Medical Communication Competence Scale (MCCS; Cegala et al., 1998) used for this current research was modified to include the details that TJC suggests be a part of the handoff, such as the patient's current condition; relevant historical information; recent/anticipated changes; and needed care, treatments, medications and services.

The MCCS added to information-giving an element that provides a more detailed description of answering questions, suggesting that nurses must be able to answer each other's questions honestly and thoroughly. The scale also included the opportunity for nurses to offer recommendations and/or input regarding the patient's care. This latter element of information giving lends support for the inclusion of prompts in handoff tools

that reinforce the importance of nurses providing recommendations and/or input that go beyond documented patient data. Examples of such handoffs include SBAR (Situation-Background-Assessment-Recommendation; Hohenhaus, 2006, Leonard et al, 2004) or SAFE (Situation-Assessment-Findings/Figures-Express/Expect; Dixon et al., 2006). Including formal prompts for recommendations and input encourages a nurse to express an educated opinion, add additional insights into a patient's needs, or express instinctive or "gut" feelings. Perhaps she or he may have relevant, valuable insights based on knowledge of certain medical conditions, familiarity with physicians involved or observations related to the patient's social and family support systems.

Information seeking.

Nurses gave a very high rating ($M = 6.22$, $SD = .83$) to information seeking in the best situations – 2.12 points higher than in the worst situations ($M = 4.10$, $SD = 1.32$). Direct questions that solicit specific information are one of the three types of information-seeking behaviors (Cegala, Marinelli, et al., 2000); Cegala, McClure, et al., 2000; Cegala et al., 2001). The other two types are declarative assertive utterances that appear to seek information, and embedded or indirect means of seeking information. The behaviors associated with information seeking included asking needed questions about a patient's care, making sure questions are asked in a clear and understandable manner and asking for recommendations and/or input.

While this study did not look at the differences in direct or indirect solicitation of information, these results suggest that nurses who clearly ask specific questions in a way that minimizes chances of misunderstanding by the other nurse have a better chance of getting the information needed to better care for a patient. The potential danger with indirectly asking questions or burying what is truly a question in a vague statement in hopes of getting additional information is that the other nurse may not be aware that additional details are being sought. This, in turn, may result in a lost opportunity to expand upon or correct a detail that may become a critical issue for a patient.

Also, these findings suggest that asking for recommendations and input from the other nurse is important. While some nurses willingly give such insights without prompting or use of a handoff tool (such as SBAR), others may not. Thus, it behooves the other nurse to seek such insight by asking for it.

Information verification.

Verifying information is a critical aspect of handoffs, helping to reduce the risk of miscommunication or misinformation (Dixon et al., 2006). Nurses rated behaviors that encourage and support checking for accuracy and understanding more highly in the best handoffs (*M* = 6.18, *SD* = .87) than in the worst ones (*M* = 4.09, *SD* = 1.39).

Information verifying is different from giving or seeking information (Cegala, McClure, et al., 2000; Cegala et al., 2001), consisting of clarifying, repeating, summarizing and forecasting (information that may be given or asked for later). While TJC has required the inclusion of opportunities for caregivers to ask (i.e., information seeking) and respond (i.e., information giving) to questions, information verifying offers a third dimension of information exchange behaviors that, if used, may make for a higher quality handoff. This is an important distinction and suggests that standardized processes as well as training need to include a means for assuring that the information provided is factual, complete and understood.

In many health care organizations, the addition of a read-back component – a technique used in aviation and other high-reliability industries (Dixon et al., 2006) – is being implemented as part of the standardized handoff. One nurse will read back or summarize the information given by the other nurse. Reading back information offers an opportunity for making sure the recipient of that information has both understood and accurately received the details needed for a patient's care. Read-backs alone may not be enough, however; the information may not be complete or may contain outdated or inaccurate details. Thus, a nurse may need to be more assertive in verifying the details provided to assure she or he has been given a comprehensive, accurate reflection of a patient's current status and needs.

Hypothesis 1b

There was also support for the prediction that *socioemotional* behaviors would be rated higher in the best handoff conditions (*M* = 6.31, *SD* = .77) than in the worst ones (*M* = 4.63, *SD* = 1.12). In other words, there is more to a nursing handoff than just transferring responsibility or sharing information. Not enough attention is being paid to relational aspects of the handoff, believes Richard Frankel, senior research scientist at the VA Health Services Research and Development Center of Excellence on Implementing Evidence-Based Practice at the Richard L. Roudebush VA Medical Center in

Indianapolis (Runy, 2010). He contends that effective handoffs require working relationships that are built on trust between those involved. Handoffs may provide social support as well as an opportunity to socialize (Kerr, 2002) and may also offer nurses working with dying people a chance to express feelings to their colleagues (Hopkinson, 2002).

Nursing units are stressful, sometimes chaotic workplaces. Depending on the number of patients a nurse is responsible for and the complexity of those cases, a nurse is more than likely exhausted by the time a 12-hour shift ends. It's critical that the nurses interacting in the handoff work well together. They must *trust* in each other's abilities and in the accuracy and relevance of the information being shared, as well as in knowing that they can ask and answer questions truthfully, offer recommendations and insights, and challenge any situation that raises a red flag without fear of reprisal or ridicule from the other nurse. Expressions of warmth and caring may create a supportive environment for nurses to engage in a two-way discussion that is truly focused on what is best for the patients involved.

The socioemotional behaviors measured by this current research are similar to those found in physician and patient medical consults (Cegala et al., 1998). Nurses engaging in these behaviors make sure to use language the other nurse can understand. They also are warm and friendly, contribute to a trusting relationship, show that they care about the other nurse, take steps to make the other nurse feel comfortable and relaxed, show compassion, and are open and honest. Use of clear language may signal respect and concern. The use of the word "language" in the current survey did not differentiate between whether that meant use of medical terminology or specific languages such as English or Spanish. An experienced nurse who uses complicated medical terms or jargon when handing off to a younger, less experienced nurse could be perceived as uncaring or unconcerned about the other nurse as well as about the patient. Similarly, nurses whose languages of origin differ signal disrespect if no effort is made to recognize and compensate for those differences. Most hospitals in the United States require nurses to speak in English when talking to each other about a patient's care. Even for those who speak English as a second language fluently, however, differences in accents and rates of speech patterns may make it difficult for some nurses to understand each other. Using tactics such as slowing down the rate of speech or carefully pronouncing important words

– particularly when asked to do so by the other nurse − show that an effort is being made to communicate, thus indicating concern and building trust.

Results from both hypotheses 1a and 1b support the use of information exchange and socioemotional communication behaviors in quality or competent nursing handoffs. However, what is not known from these results is whether use of these behaviors differs based on whether a nurse is assigned to the incoming or outgoing nursing role. Answers to that question are explored in the following discussion of results for research questions 1a and 1b.

Research Question 1a

This research question sought to determine whether information exchange behaviors (information giving, seeking and verifying) differed based on the role of the nurse at the change-of-shift handoff (incoming or outgoing). A significant difference between the ratings for the incoming and outgoing nursing roles was found only for *information verifying*; nurses assessing the *incoming nursing role* rated the behaviors associated with this dimension higher ($M = 5.47$, $SD = 1.42$) than did those for the outgoing nursing role ($M = 5.04$, $SD = 1.61$). This finding makes sense given that the incoming nurse is assuming responsibility for patients entrusted into her or his care. Thus, incoming nurses have a vested interested in making sure that they understand complex information and that the information is accurate and comprehensive.

Although significantly lower than ratings for the incoming nursing role, the information verifying ratings for the outgoing nursing role were fairly high, as well. This suggests that the nurse in this role shares some responsibility for making sure the incoming nurse accurately understands the details about a patient's condition or plan of care. By sharing in the responsibility of verifying information, there is less chance of misunderstandings, or inaccurate or missed information, particularly in complicated patient situations.

There were no significant differences in ratings given by nurses for the incoming and outgoing nursing roles for the other information exchange dimensions – information giving and seeking. Both nursing roles rated these behaviors fairly high with means ranging from 5.23-5.59. Traditionally, the outgoing nursing role has been more associated with the giving of patient information, and the incoming role with information seeking. On the basis of these findings, use of these behaviors do not differ by role,

suggesting that nurses in either the incoming and outgoing nursing role make use of behaviors associated with information giving and seeking.

Research Question 1b

There was a significant difference between the incoming and outgoing nursing role ratings for use of *socioemotional* behaviors. Although both nursing roles rated these behaviors fairly high, the incoming nursing role ($M = 5.75$, $SD = 1.09$) had higher ratings for behaviors that express trust, caring and warmth than did the outgoing nursing role ($M = 5.41$, $SD = 1.38$). To explain this difference, consider the handoff itself at the nursing change of shift. The outgoing nurse is more than likely ready to complete the handoff, end the shift and leave. The outgoing nurse is also in a position of power as she or he has the details needed for the incoming nurse to efficiently and effectively take over patients' care. This finding suggests that there may be an agreement among nurses that it's up to the incoming nurse, who is (hopefully) rested and ready to begin the shift, to set the socioemotional stage for a handoff by conveying warmth, trust and concern. The outgoing nurse does share some of that responsibility, as well, as indicated by a fairly high rating for socioemotional behaviors noted above.

The findings from RQ1a and RQ1b only examined differing information exchange and socioemotional communication behaviors in handoffs based on whether the nurses responding were rating the incoming or outgoing role. Whether the role of the nurse makes a difference when also considering whether the handoff is good (best) or bad (worst) is considered in the following discussion for research questions 2a and 2b.

Research Question 2a

To gain an even better understanding of the communication behaviors associated with competent handoffs, it was important to consider the interaction of the *nursing role* (incoming or outgoing) and handoff *quality* (best or worst) on the use of information exchange behaviors (information giving, seeking and verifying). A significant difference was found only for the interaction of quality and role on *information giving*. There were no statistically significant differences for information seeking or verifying.

In the *worst* handoffs, the *incoming nursing* role had significantly lower ratings for information-giving behaviors ($M = 3.67$, $SD = 1.60$) than did the *outgoing nursing* role ($M = 4.81$, $SD = 1.51$), as shown in Figure 4.1. However, there was no significant

difference in the ratings for these behaviors for the *incoming* (*M* = 6.55 *SD* = .48) and the *outgoing* (*M* = 6.37, *SD* = .93) nursing role in the *best* handoffs.

Figure 4.1. Estimated Marginal Means for the Interaction of *Nursing Role* and *Handoff Quality* on the Use of Information-Giving Behaviors.
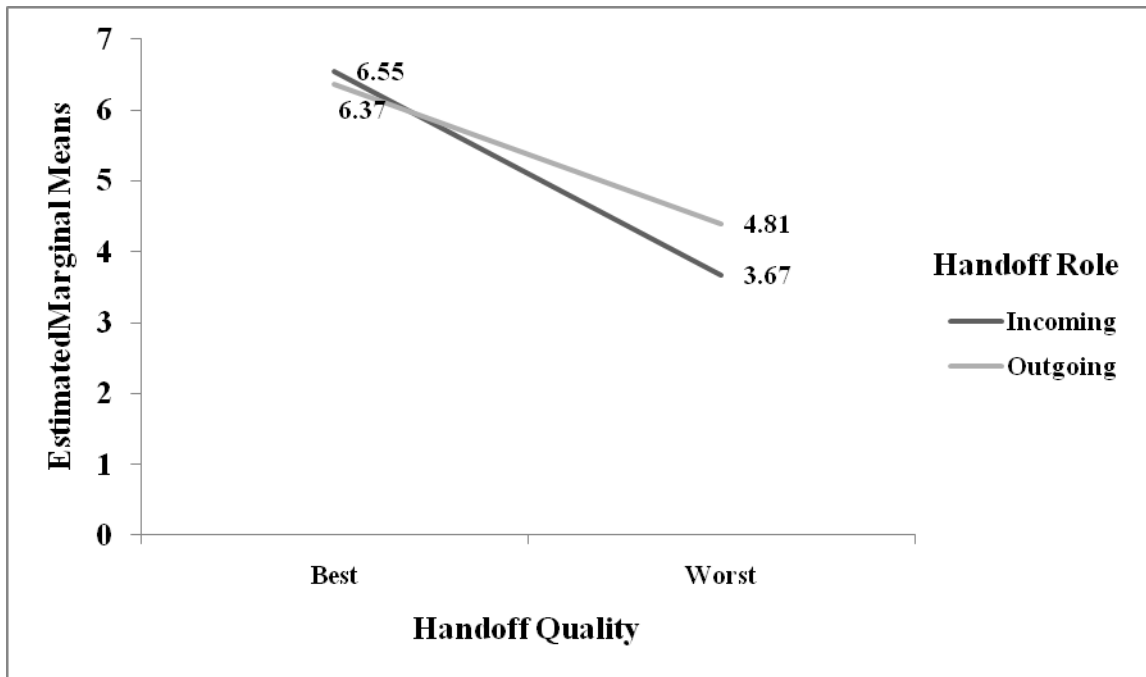
Note. p <.0001, two-tailed.

Some might suggest that this finding reinforces the notion that incoming nurses have little to do with information giving, and so would give low ratings for use of these behaviors simply because those behaviors may not be considered part of the incoming nursing role. If that were the case, however, why was role irrelevant in the *best* handoffs?

These findings seem to imply that competent or quality handoffs are those in which *both* the incoming nurse and the outgoing nurse make use of behaviors such as providing relevant historical information about a patient, answering questions honestly and thoroughly, and offering recommendations and/or input. The findings in RQ1a – that there is no difference in the use of information-giving behaviors based on role alone – would lend support to this conclusion.

As Lally (1999) and Kerr (2002) noted, the most common function of the handoff is informational. It's the opportunity for the outgoing nurse to both transfer knowledge

about patients as well as responsibility and authority (Perry, 2004). The incoming nurse needs these details about a patient's condition and plan of care in order to take over responsibility for performing the duties required for the good of the patient. However, as will be discussed further under RQ3, nurses sometimes are assigned the same patients over time, and thus are familiar with that patient's medical history and needs. So, when an incoming nurse has already cared for a patient, she or he may be able to offer details or recommendations concerning that patient to the outgoing nurse. By doing so, together they may be better able to pick up such things as any potentially dangerous, perhaps subtle changes in that patient's condition, possible medication errors or tests that had been ordered but not completed. Also, the incoming nurse may have more experience in dealing with a specific medical condition, and thus sharing that information may prompt the outgoing nurse to add additional details she or he may have previously thought irrelevant. The patient benefits from this shared exchange of information.

Research Question 2b

There was no significant difference in the use of socioemotional behaviors based on the interaction of quality and role. Ratings for both the incoming ($M = 6.37$, $SD = .56$) and outgoing ($M = 6.24$, $SD = .95$) nursing role were high, indicating a strong agreement that the best handoffs were those that used behaviors that expressed concern, warmth and trust. Ratings in the worst handoffs were lower for both the incoming nurse ($M = 4.79$, $SD = 1.00$) and the outgoing nurse ($M = 4.52$, $SD = 1.12$). These results reinforce the main effect findings for quality and role, which emphasize the importance of socioemotional communication for best regardless of role, and for incoming, regardless of quality. The interaction findings, however, indicate that use of these behaviors is also important for the outgoing role – not just the incoming nurse -- when considering the best handoffs. In other words, a communicatively competent handoff depends on both nursing roles expressing respect, concern and trust.

Research Question 3

To gain a higher degree of confidence and knowledge about what constitutes a competent handoff, based on what nurses say, it was important to include a qualitative aspect to this dissertation research. The third research question used the textual answers to the nurses' brief descriptions of best or worst handoff scenarios, based on their assigned nursing role of either incoming or outgoing, to identify other communication

characteristics associated with a competent handoff. Insights were provided into the findings of the hypotheses and research questions already discussed concerning information exchange and socioemotional communication behaviors, as well as into other aspects of the patient handoff. The resulting information discussed in the following sections may be useful to health care organizations as they design and refine standardized handoff processes and training as a means of reducing the chances for communication-related patient care errors.

Information giving.

How information is shared, what that information should include, and the format for presenting that information are among the variations that are being explored and implemented by hospitals and other health care organizations in their attempt to standardize the handoff. Consistency in how handoffs are carried out may help reduce the potential for communication-related and other types of patient care errors.

Nurses writing about memorable handoffs considered the best ones to be those that provided a comprehensive picture of the patient. Information was organized, concise and detailed. There was a preference for those details that were pertinent and/or abnormal rather than those that were not of concern to the patient's current/immediate needs or easily obtainable by looking at the medical record. The favored organization was one that used a body systems head-to-toe approach. There were many references to the types of details associated with the best handoffs, including patient demographics, plan of care, lab and other tests (results, trends, pending), allergies, IV drips/fluids, wounds/dressing/skin assessments, code status and relevant information about the patient's support system. One outgoing nurse noted that the best handoff was when she or he could answer the incoming nurse's questions.

The worst situations were those in which the information given was inaccurate, incomplete or disorganized; the outgoing nurse left before answering questions, or was distracted and anxious to leave; or the outgoing nurse was unable to answer questions or offer details about the patient. Both incoming and outgoing nurses noted that the handoff should not include unrelated or irrelevant "chit chat" or stories that distract from focusing on a patient's needs.

These findings indicate that there is some agreement among nurses about what types of information need to be given at the handoff and how it should be organized. The

details needed may differ based on the type of nursing unit, the nurse's nursing experience and/or experience with a particular patient, and/or the complexity of the patient's condition. Some attention needs to be given to assuring that nurses have access to the most current patient information, with patient charts updated with the latest test results, orders and nursing comments. Giving nurses time to prepare for the handoff so that they are knowledgeable and able to answer questions may also be helpful. Seeking the input from the nursing staff when designing a new or refining an existing handoff process may result in one in which information giving goes beyond simply answering questions or transferring only that information that could be easily found on the patient's chart. Related insights will be provided in the section concerning tools and types of handoffs.

Information seeking.

Incoming nurses viewed the best handoffs as those that offered them a chance to ask questions and to get the information they needed to, as one nurse said, "hit the ground running." They didn't want to have to push for important information or be left alone to figure it out on their own. It was helpful if they could look at patient charts and other information before the actual handoff from the outgoing nurse so that they were prepared with questions. Being assigned patients they had cared for previously was beneficial since it helped reduce the amount of details they needed from the outgoing nurse in order to take on responsibility for that patient.

Outgoing nurses were concerned about incoming nurses who weren't listening, who didn't ask questions or take notes, or who asked only for the "down and dirty," figuring they could get the information they needed from the patient's medical records. A few outgoing nurses expressed the fear that by not letting them provide more than just the highlights, the incoming nurse may be missing important information not available on the patient's electronic record. There was also concern expressed for incoming nurses who asked too many questions, interrupting the outgoing nurses unnecessarily and delaying the process.

There was agreement that in the best handoffs, the incoming nurse must believe that asking questions is acceptable behavior, but it's helpful if she or he holds those questions until the outgoing nurse has finished giving her or his report. Outgoing nurses voiced great concern about patients' safety and quality of care when they turned

responsibility for a patient over to a nurse who did not seem to value or want the outgoing nurse's information. In at least two of the handoff scenarios, the outgoing nurses were so concerned about an incoming nurse's lack of interest in critical patient information, they were compelled to report those nurses to their supervisors.

These findings indicate that while it's important to facilitate opportunities for nurses to ask questions, the process also may need to include balancing the give and take of the flow of information so that one nurse can get the information she or he needs, without overwhelming the other nurse with inappropriate or ill-timed questions. Also, the process must reinforce that for the incoming nursing role, there is a responsibility for both listening to the outgoing nurse's report, as well as for seeking additional details when needed for the patient's benefit.

Information verifying.

Comments about behaviors associated with information verifying were rare and limited to the best handoffs for incoming and outgoing roles. Only a few nurses used terms that could be categorized as behaviors that are associated with clarifying, repeating or forecasting information to check for accuracy and understanding. It could be that nurses confuse asking questions with clarifying information, thus the terms used by nurses in describing patient handoffs appeared to be more related to information giving and seeking, when, in fact, the nurses were engaged in information-verifying behaviors. The terms most used were "double checking" and asking questions to "clarify" such things as high-risk IV medications, wounds and overall patient condition. An outgoing nurse thought the incoming nurse should only interrupt a handoff in order to clarify specific information. An incoming nurse said it was important "to feel" that it was alright to "seek clarification" from the outgoing nurse. This may be more related to feelings of trust as part of socioemotional communication, discussed in the following section. Nurses also linked verifying critical patient information with bedside handoffs. This will be discussed in the section on location of handoffs.

The relative lack of terms describing behaviors related to information verifying may indicate that more needs to be done to separate this dimension from simply asking and responding to questions. By building in processes and training that reinforce repeating, summarizing and clarifying of information as a part of information exchange at

the handoff, nurses may be better able to reduce opportunities for mistakes to occur when caring for their patients.

Socioemotional communication.

It appears that there is a shared view among nurses that in the best handoffs, certain socioemotional behaviors may contribute to handoff quality. Examples given included the outgoing nurse welcoming the incoming nurse to the shift by simply saying "hello," and delivering the shift report in a calm, focused and professional manner. The outgoing nurse can reinforce the expertise of the incoming nurse with the patient by introducing that nurse to the patient, then adding a positive statement about that nurse's capability (e.g., "I'm leaving you in good hands"). They can also show respect for the incoming nurse, responding to requests such as speaking more slowly or loudly, or using easily understood language – indications that they are willing to do what is needed to make the handoff better for the other nurse. The outgoing nurse is in a position to create a "safe" setting in which the incoming nurse feels or trusts that he or she can express concerns or ask questions without feeling as if they those questions are "stupid" or unnecessary. This may be particularly important when the outgoing nurse is more experienced and is working with a new graduate nurse who may have many more questions.

The incoming nurse, on the other hand (who may have a greater responsibility for establishing a relationship based on trust, caring and concern based on findings from RQ1b), sets the tone for the handoff by being attentive and in a positive mood, expressing concern for the patients being discussed as well as appreciation for the job done by the outgoing nurse. Understanding why the outgoing nurse may not have had time to complete tasks as expected was suggested as an indication of compassion for the unexpected interruptions and needs of patients that took precedent. It's up to the incoming nurse to instill in the outgoing nurse feelings of trust that the patients will be given optimal patient care. Knowing that the incoming nurse was as committed to providing quality care as the outgoing nurse was a key concern voiced by some nurses in the outgoing nursing role.

What these findings suggest is that there are some basic expectations among nurses about participating in handoffs that include expressions of trust, warmth and

concern. These suggestions may prove helpful in building socioemotional behaviors into the standardized handoff.

Location.

For both incoming and outgoing nurses who indicated a handoff location in their descriptions of best handoffs, the majority took place at the patients' bedsides. The only comments in the worst handoffs for bedside handoffs had to do with a concern for patient confidentiality and noise caused by patient visitors.

Many hospitals and health care organizations are moving handoffs to the bedside in light of evidence indicating that doing so has many benefits, including helping to facilitate information sharing and collaboration (Kassean et al., 2005); increasing satisfaction (patient, staff and physician), reducing overtime and shortening the time of the handoff (Anderson et al., 2006); and improving the accuracy of the information transferred, continuity of patient care, and patient and nurse relationships (Williams, 1998).

The reasons given by nurses in this current research for preferring bedside handoffs included the ability to introduce the incoming nurse to the patient and establish a trusting relationship, as well as to physically check or verify critical patient care needs such as IV drips, drains/tubes, wounds and medications. Bedside handoffs also allowed the patient to listen to what was being said and to add comments as needed that may include "correct(ing) us if we are wrong about any history or information or anything else," as one nurse wrote. This information may indicate that handoffs done at the patient's bedside provide a more supportive setting for behaviors associated with information verifying.

At the bedside, incoming and outgoing nurses together "eyeball" the current status of the patient in search of subtle signs of improvement or a worsening condition and check equipment settings. A bedside handoff also "fast starts" the relationship between the patient and the incoming nurse, and offers an opportunity for the patient to take part in his or her health care process. This offers an added safety net for identifying possible opportunities for patient care errors and taking preventive actions.

As noted in the results in the previous chapter, other locations were mentioned by nurses in the best handoffs, including nurses' stations, alcoves, pods near a patient's room and other areas that offered privacy. Locations mentioned in the worst handoffs were

similar, including nurses' stations, small report rooms, a patient family room (with no family in the area), a conference room and a medical cart in the hallway. It is difficult to draw conclusions about the impact these locations alone have on handoff quality. Positive and negative comments about these locations were more about the environment, as discussed in the following section.

Environment.

As might be expected, the best handoffs were done in settings where there was minimal interruption and distractions, such as a "quiet area away from the nurses' station," or a "quiet alcove." In the worst handoffs, noisy nurses' stations or break rooms where multiple handoffs are occurring at the same time made it hard for nurses to concentrate. This lack of focus could conceivably lead to patient care mishaps due to a nurse's not hearing what was being said. If a patient's room was filled with visitors, this also interfered with the bedside handoff. Nurses noted that some of their hospitals have taken steps to minimize these interruptions. For example, support staff may come in earlier than the nursing staff so that they can be on hand to answer patient call lights while nurses complete handoffs without interruption. Delivery time of food trays may have been altered so as not to disrupt the handoff. Admission of patients may be delayed until after the handoff. Visitors may be asked to leave a patient's room during bedside handoffs. Given that handoffs generally occur at the same time every day (e.g., between 7 a.m. and 8 a.m., and 7 p.m. and 8 p.m.), altering schedules to minimize disruptions seems to work in some of the handoffs described.

Another factor that was mentioned more in the context of socioemotional behaviors but that may impact the handoff environment includes things nurses do to add to the noise and chaos. This includes informal chatting with other nurses, physicians, other health care workers and loitering family members, as well as answering non-emergency personal or work-related calls. Many organizations have taken steps to minimize interruptions and lower the noise levels during handoffs, but it may be that more formal processes are required to support a "handoff friendly" environment, such as those mentioned above.

Tools and type.

Both incoming and outgoing nurses specifically mentioned face-to-face handoffs more when describing best handoffs than they did for worst handoffs. In the best

situations, comments were made that face-to-face handoffs allowed the nurse a chance to ask questions and get the information needed. One comment made by an incoming nurse describing a worst handoff was that there was "no face-to-face." Audio-taped handoffs were also mentioned in both the best and worst handoffs. However, comments made in the worst handoffs indicated that this means of conveying patient information failed when the tape recorders were old and/or had poor sound quality. Nurses recording their reports who had heavy accents were difficult to understand. If taped recordings were listened to simultaneously by a group of nurses, the noise level may have been too high to hear properly. Sometimes, the nurse taping the report was long gone and not available for questions by the time the incoming nurse had listened to the tape. Thus, recorded handoffs often thwarted the important step of having nurses be able to ask and respond to questions. This means there was also no chance to verify information or to establish any type of relationship with a nurse based on trust, caring and warmth.

When nurses mentioned handoff tools such as check lists, patient information sheets and/or organizational formats, they most often pointed to SBAR, with this tool noted more frequently in the best handoffs than in the worst ones. It's not surprising that this specific handoff tool was mentioned since TJC has used it as an example of an acceptable standardized format, and many health care organizations are adapting it for use at the nursing handoff. Unfortunately, responding nurses did not offer any insights into whether use of this tool contributed to the best handoffs. The only potentially negative comment related to the worst handoffs had to do with the fact that while SBAR had been implemented at one nurse's hospital, the form was rarely used.

Nurses mentioned other types of handoff tools in their descriptions of best handoffs, including flow sheets, mini-data sheets, computerized tool, printed handouts, standard history forms and Kardex systems. Similar types of tools were mentioned in the worst handoffs, including report sheets created by the nurse, nursing chart left at the bedside, pre-printed sheets, interdisciplinary plan of care, Kardex, a dry eraser board "for all in the room to see," "cheat sheet," computerized forms, patient problem list, and outdated census sheets.

What's interesting is that in the worst handoffs, *not* using any form of written tool was also noted. One nurse wrote that it wasn't helpful for the outgoing nurse to complete a form and then leave without offering an opportunity to ask questions; another said that

a form that had blanks for outgoing nurses to fill in was being completed with "OK," making the form "a waste of paper."

On the basis of these comments, it would appear that written tools are useful, but only if they are used consistently and appropriately by all the nursing staff on a unit, and only if they are also accompanied by the opportunity for incoming nurses to talk further with the outgoing nurse if additional information or verification of information is needed.

Time.

When considering time, nurses in general indicated that the best handoffs were those that were short and to the point; they didn't prolong the process. Those that took too long were part of the worst handoffs. Nurses wanted to have enough time to get and/or give the information necessary. They wanted incoming nurses to come to work on time, so as not to delay the handoff. They didn't want to feel rushed or as if there wasn't enough time to ask questions, verify information or complete a quality handoff. What specific amount of time was optimal for a handoff depended on such factors as the patient load, the complexity of those patients' needs and whether the nurse had previously cared for that patient (which may shorten the handoff).

The issue of time is important. Outgoing nurses are ready to leave, with many facing family responsibilities waiting for them at home. Incoming nurses want to get started on their patient care tasks so they don't fall behind. Miller (1998) found that the average handoff lasts 30 minutes; Sherlock (1995) put the time at between 10 and 61 minutes. These findings seem to coincide with those mentioned by nurses in this current research: 3-7 minutes per patient, 10-15 minutes for two patients, 45 minutes for 4 patients, and 30 minutes overall.

Handoffs should not take any more time than necessary to ensure that the appropriate patient information has been shared, discussed and reviewed for accuracy and understanding. By teaching nurses the skills needed to communicate more competently, using processes that instill consistency and support nursing dialogue, it is conceivable that the time it takes to do a quality handoff will not increase, and may, in fact, decrease. However, this premise would need to be tested, as discussed in the section on future research.

In summary, nurses described the best handoffs as those that "painted a picture" of a patient's condition, with details that are well organized (with a systems approach),

accurate, succinct, to-the-point and relevant. There should be opportunities for nurses to ask and answer questions as well as clarify or verify complex information. If specific handoff tools are part of the standardized process, they should be used. The nurses involved should show respect, concern and trust for one another. Nurses should be on-time and prepared, with time enough available so that neither nurse feels rushed. Handoffs at the patient's bedside provided opportunities for verifying important patient information as well as for establishing a relationship with the patient.

Summary of Findings

The following recaps the statistically significant findings of this current research that sought to discover the *specific communication behaviors* associated with what nurses say constitute a communicatively competent patient handoff at the nursing change of shift:

- *Information exchange* (information giving, seeking and verifying) and *socioemotional* communication behaviors were rated more highly by nurses in the *best* patient handoffs than in the worst ones.

- *Information verifying* and *socioemotional* communication behaviors were rated more highly for the *incoming nursing* role than for the *outgoing nursing* role.

- *Information giving* behaviors were rated lower in the *worst* handoffs for the *incoming nursing* role than for the *outgoing nursing* role.

In general, the findings of this current research provide support for use of specific behaviors associated with information exchange and socioemotional communication to achieve optimal or quality patient handoffs at the nursing change of shift. It's important to understand that a nurse on any given shift is both the incoming and the outgoing nurse. This means that nurses must know how to use all of these behaviors and make use of them as appropriate in the nursing handoff. There is some evidence to support that when in the incoming nursing role, a nurse is more responsible for using behaviors that help to verify accuracy and understanding of the patient information provided, as well as for setting the tone of the handoff interaction by using behaviors that instill trust, caring and warmth. However, in high-quality handoffs, these differences in role responsibilities disappear.

A nursing handoff is a critical juncture in a patient's care that happens two to three times every day. Using a model that facilitates a respectful, concerned,

comprehensive and accurate dialogue between nurses rather than a one-way nursing handoff report offers an opportunity for nurses to collaborate, providing different perspectives about patient needs, identifying areas of concern, and perhaps preventing mistakes based on misinformation or inaccurate information. Information exchange offers the opportunity for the fresh look referred to by Perry (2004) as a chance to perhaps pick up on details that may have been missed by others.

It could also be argued that handoffs that rely largely on use of standardized check lists or template formats as a means of complying with TJC requirements, even if they include opportunities for questions and answers, may not be going far enough to facilitate handoffs that support information exchange. Berwick, a leading advocate for patient safety, warned that setting minimal standards may lead to minimal care (1989). Lomas (1990) also cautioned against confusing conformity to standards with performance excellence. On the basis of this dissertation's findings, for competent or quality interactions, handoffs also need to include the use of strategies for verifying information and for creating a caring, trusting and respectful nursing interaction. Limiting the two-way flow of information to simply giving information based on a check list and only asking and responding to questions may not prevent the breaking down or decaying of information that is lost or buried as new, more current information takes its place. Anthony and Preuss (2002) warned that this funneling or progressive loss of information may lead to errors in patient care.

While using check lists and templates that include a place for nurses to offer recommendations and input may help, some nurses may do nothing more than, as one nurse noted in her description of a bad handoff, write "OK." Based on nurses' descriptions of handoffs, moving this change of shift report to the patient's bedside may provide the prompting or what Patterson (2004) called a "forcing feature" (p. 131) necessary to encourage nurses to talk to one another as they share information about that patient's condition, and together check or verify such things as IVs, medication needs, pain level, patient condition, etc.

These findings provide a foundation for communicatively competent nursing handoffs for the change of shift. Creating processes that support and prompt the use of information exchange and socioemotional communication behaviors, as well as provide nurses with training in the use of these behaviors, could conceivably contribute to fewer

patient care errors as result of communication failure at the nursing handoff. Future directions related to these findings will be discussed following an examination of the limitations of this study.

Study Limitations

There were several limitations to this study. First, as previously noted, on any given shift, a nurse serves in both the incoming and outgoing role. Thus, when being randomly assigned to answer questions related only to one of the two roles, the nurse may have had a difficult time limiting her or his views to a single handoff role. Similarly, when assigned to address either a "best" or "worst" recalled handoff, a nurse may not have been able to remember one situation and instead, responded based on a compilation of recalled best or worst aspects of a handoff. However, even if nurses comingled roles and compiled several recalled handoffs into one, they were only addressing a best- or worst-quality handoff.

Posting the survey at *allnurses.com* provided a nurse-oriented launching pad that aided in eliminating participation by non-nurses and also protected participant anonymity. However, there is the possibility that nurses who seek opportunities to participate in discussion forums and voluntarily participate in nursing research may not be representative of the general nursing population.

Also, the survey design may have produced a barrier that made it difficult for nurses to participate, even if they were interested in the topic. Less than two-thirds of nurses who completed the consent process to link to the survey actually went on to participate. That may be because the first question required a nurse to recall and write about a handoff. Some nurses may not have had the time or the inclination to "briefly describe" a handoff, or they may have accessed the survey while at work with limited time at the computer and so they exited the survey without moving on to find that the remaining survey questions could be completed within a few minutes.

There was also some difficulty in enrolling nurses to participate in the online survey posted at *www.allnurses.com*. While more than a million nurses are registered users of this website, it proved difficult to generate volunteer respondents by relying on posting the survey as a new discussion thread. Unless nurses were particularly interested in research or in the topic of handoffs (or had searched key words such as shift report, shift change, transfer of accountability, etc.), they were not inclined to click on to the

specific discussion threads where this survey was posted (under academic research and patient handoffs). After the initial posting, the survey became buried by newer postings/discussion threads. The survey had to be regularly reposted within the original discussion thread so that it showed as a "new post" for returning/first-time visitors and attracted additional participants.

The reposting strategy alone was inadequate to attract a sufficient number of participants. Ultimately, additional respondents from outside allnurses.com were recruited from other sources such as community hospitals, academic medical centers and professional nursing organizations (they all entered the survey from allnurses.com), though this may have contributed to a study sample that was significantly different from the nursing population with regard to education and gender. There were higher percentages of undergraduate (48% compared to 37% overall) and advanced degrees (27% compared to 13% of nurses overall) in the sample population responses. There were fewer female respondents (89% female versus 11% male) compared to the most recent data that shows 93% of America's nurses are women (U.S. Department of Health and Human Resources, 2010). Thus, results from this sample should be interpreted with caution.

It should also be noted that this study looked at handoffs that occur between nurses working in a variety of health care settings at the change of shift. There may be some differences in how information exchange and socioemotional communication behaviors apply to specific nursing units such as critical care, emergency, pediatric or rehabilitation nursing. Although these unit data were collected, the numbers of participants in each type of nursing unit were too low for meaningful analysis and this question was not part of the study. Also, there are many types of handoffs in health care settings, including those that occur when a patient is transferred from one department or nursing unit to another (e.g., from emergency to critical care, surgery to post-op/recovery, nursing unit to diagnostic imaging, etc.), between caregivers (e.g., change in on-call or specialty physicians, ambulance emergency rescue staff to emergency room staff, nurse to patient transporter, etc.), or between facilities (e.g., nursing home to hospital, hospital to hospice care, etc.). Therefore, caution should be taken in attempting to apply the findings from this research to those particular handoff scenarios.

Good communication is the foundation for assuring that timely, accurate and pertinent information about a patient's current status and needs gets passed from one caregiver to another during the handoff at the nursing change of shift. Conversely, miscommunication prevents nurses from doing their jobs efficiently and appropriately, with patients suffering from poor quality care and increased chances for error in their care as a result of misinformation, factual errors and missing or funneling of information.

As noted in the literature review in Chapter 1, the medical community knows that failure to communicate during the transfer of a patient from one caregiver to another is related to significant errors in patient care. This knowledge launched a nationwide initiative by The Joint Commission to standardize patient handoffs as a means of reducing the chances of miscommunication and misinformation during handoffs of all kinds in medical settings. While this is a worthy goal, what seems to be missing from current literature is research into what *specific communication behaviors* are associated with *competent patient handoffs*. When looking only at handoffs that occur at the nursing change of shift, much of the research appears to be focused on the location (e.g., bedside), the tool used (e.g., SBAR or related standardized form), and use of computer-based applications (such as automated phone features, computer-based applications, electronic medical records, etc.) or face-to-face methods. It tends to neglect the details of *how* to communicate more effectively.

The findings from this research provide insight into what communication behaviors nurses say constitute a competent or quality handoff. There is strong support among the nursing respondents for use of information exchange (information giving, seeking and verifying) and socioemotional communication behaviors in the best or competent handoffs. Given that nurses are responsible for providing 80% of a patient's care (Keenan et al., 2008), and that the handoff ritual occurs at the beginning and ending of every nursing shift, nurses are perhaps the most qualified to address this issue. After all, the success of a nurse's shift may have a lot to do with whether she or he was properly prepared – was given the "full picture" – to handle each patient's unique needs, based on current status, medical history and family support. While much information is available through electronic medical records, this record of patient data can't begin to replace a nurse's wisdom and instinctual or "gut" feeling that could lead to preventing a

catastrophic mishap in that patient's care. As one nurse noted in her handoff description, had she trusted the previous nurse's limited documentation about a patient who had just had a knee replacement and not asked the outgoing nurse some questions, she might have delayed checking on the patient. It was only after she pushed the outgoing nurse for more details that she found cause for concern. She immediately checked on the patient and found the foot was cold, pale and without a pulse – all signs of a possibly serious post-operative complication.

Implications for Research

Since this research was concerned about what specific communication behaviors nurses say lead to competent or quality handoffs, what is unknown is whether use of quality handoffs as defined by nurses will actually lead to better patient outcomes. Therefore, a logical next step for future research would be to determine if handoffs that use higher levels of information exchange and socioemotional communication behaviors result in a reduction in communication-based errors or near misses in patient care, as well as improved patient outcomes (less morbidity/mortality), fewer medication errors, patient satisfaction, nursing satisfaction and handoff length of time. Determining if certain types of handoff tools (e.g., SBAR) or locations (e.g., bedside) facilitate information exchange and socioemotional communication would provide useful information as well.

Implications for Communication Theory

If poor communication is a major contributor to human errors in patient care, it makes sense for social scientists versed in communication theory to play a role in improving the communication that takes place during the critical intersection in a patient's care known as the patient handoff. Using Cooley et al.'s (1984) definition of communication competence as "the knowledge of appropriate communication patterns in a given situation and the ability to use the knowledge" (p. 25), this current research sought to identify specific communication behaviors in the context of the nursing patient handoff. Spitzberg (1983) noted that competence is determined through the perception of one's self and another's appropriateness and effectiveness within the context of a specific event. This research looked to nurses as the experts in identifying whether they perceived behaviors associated with information exchange and socioemotional communication to be used more in the best handoffs than in the worst ones.

Understanding communication competence specifically for the nursing handoff offers a real-life setting for evaluating the merits of those behaviors. Context-specific communication competence research is important (Wiemann et al., 1980). This dissertation was based in part on a body of research concerning medical communication competence focused on a model of mutual decision making between the patient and the physician (Cegala, McClure, et al., 2000). For purposes of this current research, the focus was shifted from the physician-patient interaction in a medical consult to the nurse-to-nurse interaction in a patient handoff.

Cegala (1997) identified communication behaviors that were used by patients and doctors during the medical consult. He categorized information exchange behaviors as information giving, seeking and verifying, and added a separate socioemotional category to focus on relational communication concerns. Competencies in the use of these behaviors by physicians and patients were measured by the Medical Communication Competence Scale (MCCS; Cegala et al., 1998). The MCCS was modified for use in this current research for identifying communication competencies associated with the nursing handoff.

As predicted for this dissertation, information exchange and socioemotional communication behaviors were highly rated in competent nursing handoffs, setting the stage for additional research into whether use of these communication skills could lead to improved outcomes for nursing handoffs as discussed previously. Future opportunities also exist for medical context-specific research concerning communication competent behaviors in other types of patient handoffs (e.g., physician to physician, nursing to other caregivers, nursing unit to nursing unit, facility to facility, etc.).

Implications for Applications

By knowing what constitutes competence in nursing handoff communication, hospitals can standardize or refine their procedures so that they facilitate, support and encourage use of information exchange and socioemotional communication behaviors as a way of reducing the chances of errors in patient care. Whatever the procedure a health care organization implements, it must include an opportunity for nurses to ask and respond to questions – behaviors that are associated with the information exchange behaviors of information giving and seeking. However, on the basis of this current research, it appears that two additional dimensions of communication behaviors

are needed for a competent handoff – information verifying and socioemotional communication.

Use of tools such as check lists or templates – whether handwritten or computer-generated – are helpful in that they offer a consistent, well-organized format that replaces the handwritten "cheat sheets" traditionally used by nurses. Some of the tools have added specific prompts for nurses to repeat complex information as a means of assuring that the information is both understood and accurate. However, repeating information alone may not be enough. The behaviors associated with information verifying also include clarifying and summarizing information as well as forecasting or predicting information. These behaviors may sometimes look like asking questions, when, in fact, they represent an attempt at determining if there are missing, inaccurate or otherwise faulty details that might contribute to medical mistakes. There is also anecdotal evidence from this research that is consistent with other research findings that indicate moving the handoff to the patient's bedside offers an opportunity for hands-on verification of important patient details.

Also missing from many of these tools and procedures are encouragement and support for nurses' use of behaviors that create feelings of warmth, trust and concern. Correcting this oversight may be as simple as requiring that the outgoing nurse introduce patients to the incoming nurse. If it can be delivered with sincerity, the outgoing nurse could also convey to the patient a message of trust and respect for the incoming nurse's abilities (e.g., "you are in good hands"). This might also include reinforcement of such tactics as paying attention, ignoring unrelated interruptions, using less medical jargon, modifying rate of speech, and using common niceties such as saying "thank you" when patient care tasks have been completed before the nurse's end of shift, making it easier for the incoming nurse to take over, or when the incoming nurse has taken time to review the records of patients assigned to her before the handoff, making the outgoing nurse's job more efficient.

The implications for training are of particular importance, as there appears to be relatively little or no education for nurses related to communication skills overall (Chant et al., 2002), much less for the communication behaviors associated with the competent handoff. Yet, there is a growing abundance of new nursing graduates who have entered the field of nursing as a result of a global nursing shortage that has fueled interest in the

profession. These novice nurses must interact with more seasoned, experienced nurses at the change of shift. Seasoned nurses may share their biases for certain handoff characteristics, based on personal experiences of what works best. It is important that new nurses, as well as their more experienced colleagues, be appropriately trained in both communication skills and standardized processes and techniques that facilitate an appropriate, accurate and effective sharing of patient-focused information at the change of shift.

A training program developed for physicians and patients participating in a medical consult called PACE (*P*resent, *A*sk, *C*larify, *E*xpress) could provide a model for training nurses in communicatively competent handoffs. PACE has been successfully used to improve communication between patients and physicians in the medical consult (Cegala, Marinelli, et al., 2000; Cegala, McClure, et al., 2000; Cegala et al., 2001; Harrington et al., 2007).

PACE training was based on research that arose from Cegala et al.'s (1998) Medical Communication Competence Scale – the same scale that was modified for this dissertation research specific to the nursing handoff. Given the time constraints of nurses and student nurses and the complexity and volume of the knowledge required to perform nursing tasks, any handoff communication training must be succinct, brief and effective. The training must have relevance regardless of the type, location, tool or any other aspect of a standardized process. A modified PACE may offer such a format for providing core competency training and a framework for nursing handoff communication.

Conclusions

This current research asked nurses to identify the specific communication behaviors that constitute a quality or competent nursing handoff at the change of shift. There was support for the prediction that behaviors associated with quality handoffs were those that comprise information exchange (information giving, seeking and verifying) and socioemotional communication. The benefits of using two of the dimensions of information exchange – information giving and seeking – have been noted by The Joint Commission in their request that any standardized handoff process offer an opportunity for those involved to ask and respond to questions. The findings from this current research validate the need for questions and answers to be a part of the handoff, but they

also lend support for adding another dimension of information exchange – information verifying – as well as socioemotional communication behaviors to the handoff process.

This research also examined whether communication competencies differed by the nurse's role in the handoff – whether they are the incoming or outgoing nurse. The only significant differences were found in higher ratings for the incoming nurse's use of information verifying and socioemotional communication behaviors for handoffs. This would suggest that when training nurses in handoff communication skills, a greater emphasis should be placed on the incoming nurse's use of these behaviors. However, this difference in nursing role disappears when considering the quality of a handoff. In the best handoffs, nurses in both the incoming and outgoing roles strongly agree on the importance of using these behaviors as well as those associated with information giving and seeking.

Perhaps the most interesting finding is that in quality or best handoffs, there was no significant difference between incoming and outgoing nurses in their strong agreement for their use of information-giving behaviors, as well as behaviors associated with information seeking, information verifying and socioemotional communication. Only in the worst handoffs was there a significant difference: Nurses in the incoming role gave much lower ratings for use of information-giving behaviors than did those in the outgoing role. This might seem counter to what would be expected since it is generally the outgoing nurse who is in the position of giving information and answering questions. Thus, one would expect the outgoing nurse to have ratings lower than the incoming nurse in the worst situations, and higher ratings in the best situations.

These findings offer evidence to suggest that the worst handoffs are those in which the incoming nurse gives little information that might benefit the quality of the handoff. In the best handoffs, the incoming nurse as well as the outgoing nurse share information about a patient's condition. This information may include insights based on having previously cared for that patient, or on experience with specific medical conditions. Such a two-way sharing of information may cause the outgoing nurse to supplement what she or he has already shared about that patient, perhaps uncovering a cause for concern that could result in an improved handoff and patient care.

The findings of this dissertation may be helpful in gauging whether existing standardized handoff processes facilitate a two-way exchange of information and support

a beneficial social and emotional nursing relationship. A format for training nurses in communication skills associated with the competent handoff has also been suggested. Such training would be in conjunction with other handoff training, offering nurses a roadmap or foundation for better communication at the handoff regardless of the tool, type or location used by a health care organization. These findings also provide the foundation for future research that seeks to tie the communicatively competent nursing handoff with such measures as patient and nurse satisfaction, reduced medical errors, time of handoffs, reduced medication errors and other measures of quality care.

To draw upon the baseball analogy used in the introduction of this dissertation, communication researchers are skilled coaches who can help nurses to "hit the ball" of the quality handoff by employing the behaviors for information exchange and socioemotional communication skills. A communication-based perspective may help advance the body of research regarding the best way of reducing the opportunities for communication-related errors that occur when a patient's care is transferred from one nurse to another during the patient handoff.

Appendix A

Summary of Literature Search

A literature search for this dissertation was first launched in 2005, with follow-up searches done to assure information was as updated as possible. On-line searches were conducted using primarily the Academic Search Premier, Communication and Mass Media and CINAHL (Cumulative Index to Nursing & Allied Health Literature) databases. Search terms included patient handoff (and related terms such as hand off, handoff communication, hand over, signover, shift report, shift handover and transfer of accountability), SBAR, nursing communication, National Patient Safety Goals, Joint Commission, sentinel events, medical errors, adverse events, patient safety, mindfulness, shared mindfulness, situational awareness, crisis communication, communication competence and medical communication competence (including PACE).

Appendix B

Online Consent Form and Nursing Handoff Survey

You are being invited to take part in a research study about effective patient handoffs at the nurses' change of shift. This invitation is being extended to any nurse who visits www.allnurses.com.

We would appreciate your participation in this study by answering just a few questions. You will be asked to briefly describe either the worst or the best handoff that you can remember, followed by some questions related to that specific shift report. Participating should take 15 minutes or less of your time.

The purpose of this study is to determine what nurses say contribute to a competent handoff at the nursing change of shift. Communication mishaps have been identified as a major source of medical errors at the handoff of a patient from one caregiver to another. Learning from nurses about the qualities of a good handoff will aid in the development of standardized handoff procedures that may help reduce the chance of communication-related errors in patient care.

If you decide to take part in the study, it should be because you really want to volunteer any further nursing research. There are no costs associated with taking part in the study. You may stop answering the questions at any time.

This study is anonymous. We do not collect personal information that can identify you in any way. We will keep private all research records to the extent allowed by law.

The person in charge of this study is Anne Streeter, principal investigator, a doctoral student from the University of Kentucky College of Communications and Information Studies. She is being guided in this research by Nancy Grant Harrington, Ph.D., and Derek Lane, Ph.D., co-chairs of her doctoral committee.

If you have any questions about participating in this study, you can contact Anne Streeter at 606-787-1468 or at anne.streeter@uky.edu. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

If you wish to participate in this study, please simply click on "I agree." Thank you!

- ■ I agree
- ■ I disagree

Incoming Nurse – Best/Worst Handoff

Think back to a time when you were the *incoming nurse* and participated in the (*best/worst*) handoff of a patient's care at the nursing change of shift. Describe below what made this handoff the (*best/worst*) one that you can remember as the *incoming nurse*. Consider such details as the setting, what the other nurse said, what you said, the time it took, the tools you used, the location, etc. − whatever made this handoff the (*best/worst*) one you can remember.

When thinking about the (*best/worst*) handoff as the *incoming nurse* just described, please rate your level of agreement with the following statements, ranging from strongly disagree to strongly agree. *(Note: Choices for all of the following questions were "Strongly Disagree, Disagree, Somewhat Disagree, Neither Agree nor Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable, Choose Not to Answer."Respondents had to answer before proceeding.)*

I **did a good job of:**

Providing relevant historical information about the patient.

Answering the outgoing nurse's questions thoroughly.

Answering the outgoing nurse's questions honestly.

Offering my recommendation and/or input regarding the patient's care.

I **did a good job of:**

Getting the answers to my questions.

Asking questions related to the patient's needs.

Asking questions in a clear, understandable manner.

Asking for recommendations and/or input.

Getting all the information I needed.

I **did a good job of:**

Repeating important or complex information to check for accuracy.

Reviewing important or complex information to make sure I understood correctly.

Letting the outgoing nurse know when I didn't
understand her or his explanation.

Making sure I understood her or his directions.

Checking my understanding of what she or he said.

I **did a good job of:**

Using language that the outgoing nurse could understand.

Being warm and friendly.

Contributing to a trusting relationship.

Showing that I cared about the outgoing nurse.

Making the outgoing nurse feel relaxed or comfortable.

Showing compassion.

Being open and honest.

When thinking about the (*best/worst***) handoff as the *incoming nurse* just described,
please rate your level of agreement with the following statements, ranging from
strongly disagree to strongly agree.**

The *outgoing nurse* did a good job of:

Explaining the patient's current condition.

Explaining recent/anticipated changes in the patient's status.

Explaining the care needed by the patient.

Explaining medication needs of the patient.

Explaining treatment/s needed by the patient.

Explaining services needed for the patient.

Providing relevant historical information about the patient.

Answering my questions thoroughly.

Answering my questions honestly.

Offering recommendations and/or input regarding the patient's care.

The *outgoing nurse* did a good job of:

Encouraging me to ask questions.

Asking me questions related to the patient's needs.

Asking me questions in a clear, understandable manner.

Asking me for my recommendations and/or input.

Making sure I had all the information I needed.

The *outgoing nurse* did a good job of:

Repeating important or complex information to check for accuracy.

Reviewing important or complex information to make sure I understood correctly.

Making sure I understood her or his explanations.

Making sure I understood her or his directions.

Checking my understanding of what she or he said.

The *outgoing nurse* did a good job of:

Using language that I could understand.

Being warm and friendly.

Contributing to a trusting relationship.

Showing she or he cared about me.

Making me feel relaxed or comfortable.

Showing compassion.

Being open and honest.

Outgoing Nurse – Best/Worst Handoff

Think back to a time when you were the *outgoing nurse* and participated in the (*best/worst*) handoff of a patient's care at the nursing change of shift. Describe below what made this handoff the (*best/worst*) one that you can remember as the outgoing nurse. Consider such details as the setting, what the other nurse said, what you said, the time it took, the tools you used, the location, etc. − whatever made this handoff the (*best/worst*) one you can remember.

When thinking about the (*best/worst*) handoff as the *outgoing nurse* just described, please rate your level of agreement with the following statements, ranging from strongly disagree to strongly agree. *(Note: Choices for all of the following questions were "Strongly Disagree, Disagree, Somewhat Disagree, Neither Agree nor Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable, Choose Not to Answer."Respondents had to answer before proceeding.)*

I **did a good job of:**

Explaining the patient's current condition.

Explaining recent/anticipated changes in the patient's status.

Explaining the care needed by the patient.

Explaining medication needs of the patient.

Explaining treatment/s needed by the patient.

Explaining services needed for the patient.

Providing relevant historical information about the patient.

Answering the other nurse's questions thoroughly.

Answering the other nurse's questions honestly.

Offering recommendations and/or input regarding a patient's care.

I **did a good job of:**

Encouraging the incoming nurse to ask questions.

Asking questions related to the patient's needs.

Asking questions in a clear, understandable manner.

Asking for recommendations and/or input.

Making sure the incoming nurse had all the information she or he

needed.

I did a good job of:

Repeating important or complex information to check for accuracy.

Reviewing important or complex information to make sure the incoming nurse understood me correctly.

Making sure the incoming nurse understood my explanations.

Making sure she or he understood my directions.

Checking his or her understanding of what I said.

I did a good job of:

Using language the incoming nurse could understand.

Being warm and friendly.

Contributing to a
trusting relationship.

Showing that I cared about the incoming nurse.

Making the incoming nurse feel relaxed or comfortable.

Showing compassion.

Being open and honest.

When thinking about the (*best/worst*) handoff as the *outgoing nurse* just described, please rate your level of agreement with the following statements, ranging from strongly disagree to strongly agree.

The *incoming nurse* did a good job of:

Providing relevant historical information about the patient.

Answering my questions thoroughly.

Answering my questions honestly.

Offering recommendations and/or input regarding the patient's care.

The *incoming nurse* did a good job of:

Getting the answers to her or his questions.

Asking questions related to the patient's needs.

Asking questions in a clear, understandable manner.

Asking for my recommendations and/or input.

Getting all the information she or he needed.

The *incoming nurse* did a good job of:

Repeating important or complex information to check for accuracy.

Reviewing important or complex information to make sure she or he understood correctly.

Letting me know when she or he didn't understand my explanations.

Making sure she or he understood my directions.

Checking her or his understanding of what I said.

The *incoming nurse* did a good job of:

Using language that I could understand.

Being warm and friendly.

Contributing to a trusting relationship.

Showing she or he cared about me.

Making me feel relaxed or comfortable.

Showing compassion.

Being open and honest.

OPTIONAL FOR ALL RESPONDENTS

As a result of the handoff you described, did any of the following occur? (Check all that apply.)

A potential error in patient care was avoided.

A potential error in patient care occurred.

You were disciplined in some way.

The other nurse was disciplined in some way.

You were praised or commended.

The other nurse was praised or commended.

None of the above

I choose not to answer.

For the handoff you just described, where did you work? (Check all that apply.)

Acute Care Hospital

Academic Medical Center

Emergency Room

Medical-Surgical Nursing Unit

Critical Care

Pediatrics

Specialty Unit

Nursing Home/Assisted Living

Other

I choose not to answer.

To help us with this project, please tell us a little about yourself.
 Are you (check one):

Female

Male

In what state do you currently reside? (drop down menu)

Are you an (please check one that best describes your position:

RN

LPN

Other

How many years of experience do you have in this profession?

New Graduate Nurse

1-5 Years

6-10 Years

11-15 Years

16-20 Years

20+ Years

What is the highest level of education you have completed?

High School

Associate Degree

Bachelor's Degree

Master's Degree

Doctoral Degree

Other

Appendix C

Medical Communication Competence Scale (Cegala, Coleman, & Turner, 1998)

Note: Information giving – IG; Information verifying - IV; Information seeking - IS; Socioemotional communication – SE.

Doctors' Self-Competence Items

I provided good explanations of the following to the patient:

1. The diagnosis of his or her medical problem. (IG)
2. The causes of his or her medical problem. (IG)
3. The treatment for his or her medical problem. (IG)
4. The advantages and disadvantages of treatment options. (IG)
5. The purpose of any tests that were needed. (IG)
6. How prescribed medication will help his or her problem. (IG)
7. How to take prescribed medication. (IG)
8. The possible side effects of the medication. (IG)
9. The long-term consequences of his or her medical problem. (IG)

I did a good job of:

1. Reviewing or repeating, important information for the patient. (IV)
2. Making sure the patient understood my explanations. (IV)
3. Making the patient understood my directions. (IV)
4. Checking my understanding of information the patient provided. (IV)
5. Encouraging the patient to ask questions. (IS)
6. Asking the patient the right questions. (IS)
7. Asking the questions in a clear, understandable manner. (IS)
8. Using open-ended questions. (IS)
9. Using language the patient could understand. (SE)
10. Being warm and friendly. (SE)
11. Contributing to a trusting relationship. (SE)
12. Showing the patient I cared about him or her. (SE)
13. Making the patient feel relaxed or comfortable. (SE)
14. Showing compassion. (SE)
15. Being open and honest. (SE)

Patients' Other-Competence Items

The doctor explained the following to my satisfaction:

1. What my medical problem was. (IG)
2. The causes of my medical problem. (IG)
3. What I could do to get better. (IG)

4. The benefits and disadvantages of treatment choices (that is, choices about what I could do to get better). (IG)
5. The purpose of any tests that were needed. (IG)
6. How prescribed medicine would help my problem. (IG)
7. How to take prescribed medication. (IG)
8. The possible side effects from the medicine. (IG)
9. The long-term consequences of my medical problem. (IG)

The doctor did a good job of:

1. Reviewing or repeating important information. (IV)
2. Making sure I understood his or her explanations. (IV)
3. Making sure I understood his or her directions. (IV)
4. Checking his or her understanding of what I said. (IV)
5. Encouraging me to ask questions. (IS)
6. Asking me questions related to my medical problem. (IS)
7. Asking me questions in a clear, understandable manner. (IS)
8. Asking questions that allowed me to elaborate on details. (IS)
9. Using language I could understand. (SE)
10. Being warm and friendly. (SE)
11. Contributing to a trusting relationship. (SE)
12. Showing he or she cared about me. (SE)
13. Making me feel relaxed or comfortable. (SE)
14. Showing compassion. (SE)
15. Being open and honest. (SE)

Patients' Self-Competence Items

I did a good job of:

1. Presenting important history associated with my medical problem. (IG)
2. Describing the symptoms of my medical problem. (IG)
3. Explaining my medical problem. (IG)
4. Explaining what medicines I am taking. (IG)
5. Answering the doctor's questions thoroughly. (IG)
6. Answering the doctor's questions honestly. (IG)
7. Letting the doctor know when I didn't understand something. (IV)
8. Letting the doctor know when I needed him or her to repeat something. (IV)
9. Making sure I understood the doctor's directions. (IV)
10. Repeating important information to make sure I understood correctly. (IV)
11. Asking the doctor to explain terms I didn't understand. (IS)
12. Asking the doctor all the questions that I had. (IS)
13. Getting the answers to my questions. (IS)
14. Getting all the information I needed. (IS)
15. Contributing to a trusting relationship. (SE)
16. Being open and honest. (SE)

Doctors' Other-Competence Items

The patient did a good job of:

1. Providing relevant history associated with his or her medical problem. (IG)
2. Explaining symptoms associated with his or her medical problem. (IG)
3. Explaining what medications he or she is taking. (IG)
4. Answering my questions thoroughly. (IG)
5. Answering my questions honestly. (IG)
6. Letting me know when he or she didn't understand something. (IV)
7. Letting me know when I needed to repeat something. (IV)
8. Asking me to explain terms he or she didn't understand. (IV)
9. Asking me questions about his or her medical problem. (IS)
10. Pursuing answers to his or her questions. (IS)
11. Asking appropriate questions. (IS)
12. Contributing to a trusting relationship. (SE)
13. Being open and honest. (SE)

Appendix D

Nurse Handoff Communication Competence Scale

Information Giving

I did a good job of:

Outgoing Nurse (self-competence)	Incoming Nurse (self-competence)
Explaining the patient's current condition.	
Explaining recent/anticipated changes in the patient's status.	
Explaining the care needed by the patient.	
Explaining medication needs of the patient.	
Explaining treatment/s needed by the patient.	
Explaining services needed for the patient.	
Providing relevant historical information about the patient.	Providing relevant historical information about the patient.
Answering the other nurse's questions thoroughly.	Answering the outgoing nurse's questions thoroughly.
Answering the other nurse's questions honestly.	Answering the outgoing nurse's questions honestly.
Offering recommendations and/or input regarding the patient's care.	Offering recommendations and/or input regarding the patient's care.

The outgoing/incoming nurse did a good job of:

Outgoing Nurse (other-competence)	Incoming Nurse (other-competence)
Explaining the patient's current condition.	
Explaining recent/anticipated changes in the patient's status.	
Explaining the care needed by the patient.	
Explaining medication needs of the patient.	
Explaining treatments needed by the patient.	
Explaining services needed for the patient.	
Providing relevant historical information about the patient.	Providing relevant historical information about the patient.
Answering my questions thoroughly.	Answering my questions thoroughly.
Answering my questions honestly.	Answering my questions honestly.
Offering recommendations and/or input regarding the patient's care.	Offering recommendations and/or input regarding the patient's care.

Information Seeking

I did a good job of:

Outgoing Nurse (self-competence)	Incoming Nurse (self-competence)
Encouraging the incoming nurse to ask questions.	Getting answers to my questions.
Asking questions related to the patient's needs.	Asking questions related to the patient's needs.
Asking questions in a clear, understandable manner.	Asking questions in a clear, understandable manner.
Asking for recommendations and/or input.	Asking for recommendations and/or input.
Making sure the incoming nurse had all the information she or he needed.	Getting all the information I needed.

The outgoing/incoming nurse did a good job of:

Outgoing Nurse (other-competence)	Incoming Nurse (other-competence)
Encouraging me to ask questions.	Getting the answers to her or his questions.
Asking me questions related to the patient's needs.	Asking me questions related to the patient's needs.
Asking me questions in a clear, understandable manner.	Asking me questions in a clear, understandable manner.
Asking me for my recommendations and/or input.	Asking me for my recommendations and/or input.
Making sure I had all the information I needed.	Getting all the information she or he needed.

Information Verifying

I did a good job of:

Outgoing Nurse (self-competence)	Incoming Nurse (self-competence)
Repeating important or complex information to check for accuracy.	Repeating important or complex information to check for accuracy.
Reviewing important or complex information to make sure the incoming nurse understood me correctly.	Reviewing important or complex information to make sure I understood correctly.
Making sure the incoming nurse understood my explanations.	Letting the outgoing nurse know when I didn't understand her or his explanation.
Making sure she or he understood my directions.	Making sure I understood her or his directions.
Checking his or her understanding of what I said.	Checking my understanding of what she or he said.

The outgoing/incoming nurse did a good job of:

Outgoing Nurse (other-competence)	Incoming Nurse (other-competence)
Repeating important or complex information to check for accuracy.	Repeating important or complex information to check for accuracy.
Reviewing important or complex information to make sure I understood correctly.	Reviewing important or complex information to make sure she or he understood correctly.
Making sure I understood her or his explanations.	Letting me know when she or he didn't understand my explanations.
Making sure I understood her or his directions.	Making sure she or he understood my directions.
Checking my understanding of what she or he said.	Checking her or his understanding of what I said.

Socioemotional Communication

I did a good job of:

Outgoing Nurse (self-competence)	Incoming Nurse (self-competence)
Using language the incoming nurse could understand.	Using language that the outgoing nurse could understand.
Being warm and friendly.	Being warm and friendly.
Contributing to a trusting relationship.	Contributing to a trusting relationship.
Showing that I cared about the incoming nurse.	Showing that I cared about the outgoing nurse.
Making the incoming nurse feel relaxed or comfortable.	Making the outgoing nurse feel relaxed or comfortable.
Showing compassion.	Showing compassion.
Being open and honest.	Being open and honest.

The outgoing/incoming nurse did a good job of:

Outgoing Nurse (other-competence)	Incoming Nurse (other-competence)
Using language that I could understand.	Using language that I could understand.
Being warm and friendly.	Being warm and friendly.
Contributing to a trusting relationship.	Contributing to a trusting relationship.
Showing she or he cared about me.	Showing that she or he cared about me.
Making me feel relaxed or comfortable.	Making me feel relaxed or comfortable.
Showing compassion.	Showing compassion.
Being open and honest.	Being open and honest.

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2003 – Current	Doctoral degree student and candidate Department of Communication The Graduate School University of Kentucky, Lexington, Kentucky
1989	MSA/General Administration Central Michigan University. Mount Pleasant, Michigan
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Accreditation
1984	Accredited, Public Relations, Public Relations Society of America.

Professional Experience
2005-Present	Principal, Streeter Communication, specializing in healthcare marketing and public relations, Liberty, Kentucky
2000-2005	Assistant Vice President, Marketing & Public Relations, Baptist Health South Florida, Miami, Florida.
1995-2000	Corporate Director of Communications, Baptist Health South Florida, Miami, Florida.
1993-1995	Consultant/telecommuter, Baptist Health South Florida, working from Harlingen, Texas; Adjunct professor (Organization Communication), University of Texas, Edinburg, Texas.
1985-1993	Director of Marketing/Public Relations and Administrative Director of Women's Services, Baptist Hospital of Miami, Miami, Florida
1991	Adjunct Professor, Public Relations, Florida International University, Miami, Florida
1984-1985	Public Relations/Marketing Director, DePoo Hospital, Key West, Florida; Part-time writer for *Miami Herald.*
1982-1984	Public Information Assistant, Hawaiian Telephone (GTE), Honolulu, Hawaii
1981-1982	Account Executive, Stryker Weiner Associates, Honolulu, Hawaii
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1972-1974	News Reporter, *Lubbock-Avalanche Journal*, Lubbock, Texas
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1992	*Romance to Die For: The Startling Truth About Women and Aids*, co-authored with Fleur Sack, M.D. (Health Communications, Inc.)
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<u>Awards</u>

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