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Nurse-Physician Collaboration and Satisfaction

by

Fatima Brewton

A thesis submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the
Master of Science in Nursing Degree

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Abstract

The purpose of the study was to examine the effects of interdisciplinary rounds (IDR) on a neurology medical-surgical inpatient unit. Existing research shows that IDR improves nurse-physician relationships and satisfaction and improves patient outcomes. Using the Collaboration and Satisfaction about Care Decisions (CSACD) tool developed by Baggs, nurse-physician collaboration and satisfaction was measured pre and post implementation of interdisciplinary rounds. Twenty-one nurses and five physicians participated in the study which included education sessions, a two week trial of IDR, and a pre and post survey. Nurses and physicians in this sample perceived a significant increase in collaboration ($X = 5.6563$, $P = 0.0174$) after IDR implementation (Figure 2). There was also an increase in perceived satisfaction, although not statistically significant ($X = 3.3629$, $P = 0.0667$). Nurses scored significantly lower (indicating less agreement) than physicians in regards to collaboration ($X = 4.8864$, $P = 0.0271$) and satisfaction ($X = 5.3332$, $P = 0.0209$); nurses were less satisfied with the collaboration between nurses and physicians during the decision making process.

Keywords: collaboration, communication, interdisciplinary rounds

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CHAPTER I

Problem and Significance

Insufficient and/or miscommunication increases patient length of stay (LOS), decreases patient and healthcare provider satisfaction, increases patient readmission rates, and increases healthcare costs (Menefee, 2014). According to Joint Commission, communication was the leading root cause for sentinel events, delays in patient treatments, infection related events, patient elopements, and maternal events from 2004 through 2015 (Perry, Christiansen, & Simmons, 2016). In addition to patient related events, insufficient communication negatively impacts nurses' decision making skills and contributes to healthcare providers (HCP) job dissatisfaction, resulting in increased HCP turnover (Perry et al., 2016). Poor communication between HCP increases the risk for medical errors, patient injury, and mortality (Matzke, Houston, Fischer, & Bradshaw, 2014). Research suggested that improved communication can reduce medical errors by 23% and reduce preventable adverse events by 30% (Starmer et al., 2014).

Due to HCP dissatisfaction and, most importantly, the impact on patient care, it is imperative to utilize an evidence based approach to improve communication between HCP. The common modes of communication between HCP are written (patient charts), verbal (telephone) and electronic (patient medical record) (Foronda et al., 2015). In addition to the mode, the content of information shared and frequency of communication between HCP effect communication (Foronda et al., 2015).

Regulatory agencies such as Joint Commission, World Health Organization (WHO) and the Institute for Health Improvement (IHI) recommended that healthcare facilities use a format such as Situation, Background, Assessment, and Recommendation

(SBAR) to improve communication between HCP (Foronda et al., 2015). Variations of SBAR communication are used dependent upon patient population and facility type.

Interdisciplinary rounds (IDRs) utilize a form of SBAR in a rounding manner that promotes “real-time, in-person exchanges of information, making the goals and plan of care for each patient clear to all members of the team” (Bascara, 2011, para. 1). All HCP involved in patient care are recommended to attend IDRs, such as case managers, physicians, primary nurses, pharmacists, patient advocates, dieticians, patient care associates (PCA), rehab services, and patient/family (Reimer & Herbener, 2014). Success of IDRs require consistency. HCP attendance, time of IDR, and information discussed are key consistent components. When performed consistently, IDRs reduced patient LOS, reduced morbidity and mortality, increased patient and HCP satisfaction, and allowed HCP to perform quick patient, environmental, safety, and regulatory assessments (Bascara, 2011).

Additional benefits of IDR for HCP may include improved teamwork, improved nurse-physician relationships, and a more relaxed environment. Patients may experience added benefits such as decreased anxiety and increased comfort due to the cohesiveness of the HCP team involved in their care.

The trigger for this problem was noted on a 28-bed neurological inpatient unit. Patients complained of not understanding or not being informed of their plan of care/diagnosis and not being included in decisions related to their care and/or discharge plans. Nurses complained of physicians ignoring or belittling their suggestions for patient care and physicians complained that nurses lack understanding of the plan of care. Both the nurse and physician experience an increase in phone calls, frustration, and ultimately

a lack of communication that impacts patient care. Improved patient, nurse, and physician satisfaction could be established with an evidence based protocol or communication tool.

Purpose

IDR has been successful in improving HCP communication and improving patient and HCP satisfaction. The purpose of this study was to explore the effects of IDR on a neurology medical-surgical inpatient unit.

Theoretical Framework

Jean Watson's Theory of Human Caring guides nursing practice using a holistic approach in which caring is the foundation (Watson, 2008). The core concepts of Watson's theory are caring for self and others, transpersonal caring relationship, caring occasion/caring moment, and a reflective approach (Watson, 2008). The core of Watson's concepts emerges as ten caritas processes:

1. Sustaining humanistic–altruistic values by practice of loving kindness, compassion, and equanimity with self/others.
2. Being authentically present, enabling faith/hope/belief system; honoring subjective inner, life-world of self/others.
3. Being sensitive to self and others by cultivating own spiritual practices; beyond ego-self to transpersonal presence.
4. Developing and sustaining loving, trusting–caring relationships.
5. Allowing for expression of positive and negative feelings—authentically listening to another person's story.

6. Creatively problem-solving-“solution-seeking” through caring process; full use of self and artistry of caring–healing practices via use of all ways of knowing/being/doing/becoming.
7. Engaging in transpersonal teaching and learning within context of caring relationship; staying within other’s frame of reference—shift toward coaching model for expanded health/wellness.
8. Creating a healing environment at all levels; subtle environment for energetic authentic caring presence.
9. Reverentially assisting with basic needs as sacred acts, touching mindbodyspirit of other; sustaining human dignity.
10. Opening to spiritual, mystery, unknowns—allowing for miracles. (Watson, 2008)

A transpersonal caring relationship between the nurse and patient is achieved when the nurse’s intentions are authentic and she can look beyond the present moment and make a spiritual connection (Watson, 2008). A successful transpersonal caring relationship results in patient healing and wholeness, despite the nature of the illness. Watson’s theory guided this study by facilitating caring relationships and communication between HCP and between HCP and patients. An interdisciplinary approach to daily rounding may enhance communication and build relationships, thus improving patient satisfaction and outcomes, and HCP satisfaction and collaboration. (Figure 1.)

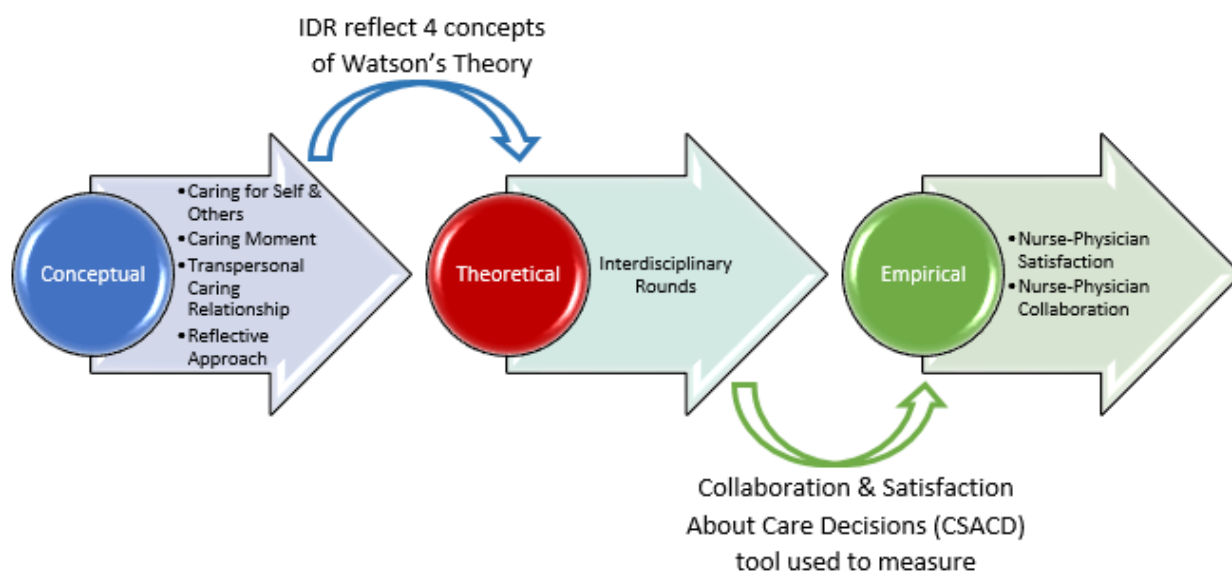


Figure 1. Conceptual-Theoretical-Empirical (CTE) Diagram

CHAPTER II

Review of Literature

A thorough literature review was conducted to explore interdisciplinary rounding (IDR) and its effect on patient care. The Cumulative Index for Nursing and Allied Health Literature (CINAHL), ProQuest, and ClinicalKey were searched. Keywords used were interdisciplinary rounds, collaborative rounds, patient satisfaction, communication, and rounding.

Patient Satisfaction

Structured communication using SBAR format with IDR to improve patient satisfaction and outcomes was the focus of a study completed by Townsend-Gervis, Cornell, and Vardaman (2014). Researchers hypothesized that the use of SBAR during IDR would improve nurse communication yielding higher patient satisfaction scores (Townsend-Gervis et al., 2014). The study was conducted in three medical-surgical units, each with 48 beds, at an acute care hospital (339 beds) in the mid-south over a three year period. The charge nurse, primary nurse, dietician, pharmacist, social worker, and case manager attended each IDR which was held at each primary nurses' cubby (located close to assigned patients). A random sample of discharged patients completed a Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey by Press-Ganey Corporation, measuring patient satisfaction using a four point scale of "never", "sometimes", "usually", and "always". Findings showed trends in improved patient satisfaction. The researchers' use of a valid and reliable survey (HCAHPS) to measure patient satisfaction (Townsend-Gervis et al., 2014) was noted; however, another tool may have been more appropriate since the questions asked did not directly associate patient

satisfaction and IDR. Strong aspects of the study were the inclusion of three nursing units and detailed education on IDR and expectations provided prior to implementation. A weakness of the study was there was no comparison to a control group, physicians, and patients were not included in the IDR, and re-admission rates and Foley removal rates were not specific to the intervention units.

Another study that evaluated the effects of IDR on patient satisfaction was performed by Pritts and Hiller (2014). The researchers evaluated if physician and nurse perception of collaboration via IDR improved patient satisfaction (Pritts & Hiller, 2014). It was performed at a Level 1 trauma center in Mid-Western United States with a sample size of 12 physicians and 26 nurses. Researchers used the Press Ganey survey to evaluate patient satisfaction in relation to how well the staff worked together to provide patient care. After implementation of IDR, patient satisfaction scores improved to 93.5% (previously 88.3%). The researchers concluded that IDR may improve patient satisfaction when patients feel valued and included in their care; however, questions asked on the survey measured the patients' perception of physician-nurse teamwork not the effects of IDR.

Patient satisfaction was a recurrent theme during the literature review in regards to the impact of IDR. Reimer and Herbener (2014) performed a study on a 26-bed hematology-oncology unit to evaluate the effects of IDR on patient satisfaction. The researchers evaluated the effects of six types of rounds; IDR, hourly rounds, senior executive rounds, unit manager rounds, safety rounds, and unit educator rounds, none of which occurred simultaneously. Although there were additional reasons for the rounds such as patient outcomes, HCP satisfaction, and communication, patient satisfaction was

the focus of the rounds. IDR occurred daily at a predetermined time with the hematologist or oncologist, primary nurse, pharmacist, case manager, patient, and family. IDR were performed twice a day on patients with discharge planning issues and more complex diagnoses that required re-evaluation throughout the day. Press Ganey surveys were used to measure patient satisfaction, the questions focused on patient safety and attention to specific needs of the patient. Both items demonstrated an upward trend over a five-year time frame. Researchers concluded that IDR may have positively impacted patient satisfaction. A limitation of the study was concurrently implementing six types of rounds which impeded the researchers' ability to identify what rounds specifically effected what? The five-year time frame and the use of one specialty unit were additional weaknesses of the study due to the numerous variables and/or changes that could affect the study during that time. Strengths of the study were the use of Press Ganey (valid and reliable tool), inclusion of patient and family and a standardized manner in which each IDR was conducted.

Menefee (2014) believed that patient satisfaction could be improved by implementing IDR and evidence based interdisciplinary plans of care (IPOC). The study was done at a 143- bed rural community hospital where patients were typically 65 years or older and the primary payer source was Medicare. A project workgroup with physician, nursing and ancillary (respiratory/physical/occupational/speech therapy, pharmacy, case management, and nutrition) representatives was formed to establish guidelines for IDR and the electronic IPOC. The group met monthly and decided to implement daily IDR led by nursing. IDR included all care team members for each patient, verified the patient's goal and discussed each patient's discharge plans. Patient

satisfaction was measured for 18 months; six months prior to and 12 months after implementation. A total of 217 patients were surveyed during the 18-month period and the scores reflected an increase (81.8% to 88%) in patient satisfaction after IDR and IPOC initiated. The researcher concluded that standardized IPOC used to coordinate IDR did improve patient satisfaction (Menefee, 2014). Study strengths included a 12-month implementation period, use of an entire facility (versus one unit), and education to all care team members for each patient. Two interventions were initiated together; thus, both must be done to obtain similar results. The measurement device for patient responses was not specifically identified; only as retrieved from “existing value-based purchasing data” (Menefee, 2014, p. 605).

Patient Outcomes

IDR may have an impact not only on patient satisfaction, but also on patient outcomes such as 30-day readmission rates, Foley catheter removal rates, the incidence of catheter-associated urinary tract infections (CAUTI) and catheter-related bloodstream infections (CRBSI), and patient length of stay (LOS). According to Townsend-Gervis et al. (2014) IDR could improve nurse communication yielding improved re-admission rates and improved performance on Foley catheter removals (Townsend-Gervis et al., 2014). As aforementioned, the study was conducted in three medical-surgical units, each with 48 beds, at an acute care hospital (339 beds) in the mid-south over a three year period. All HCP providers were present for each IDR which was held at each primary nurses’ cubby (located close to assigned patients). Re-admission rates were measured by calculating all patients re-admitted to the facility within 30 days of discharge and Foley catheter rates were measured using nursing documentation of surgical patients who had a Foley

removed and voided by the second day post-operatively. Findings showed a significant increase in Foley catheter removal ($x^2 = 15.70$, $p < .001$) and decrease in 30 day readmission rates ($x^2 = 33.28$, $p < .001$). The improvements in Foley catheter removal and re-admission rates support the researchers' argument that structured communication may impact patient outcomes (Townsend-Gervis et al., 2014). Strengths of the study were the inclusion of three nursing units and detailed education on IDR and expectations provided prior to implementation. A weakness of the study was there was no comparison to a control group, physicians and patients were not included in the IDR, and re-admission rates and Foley removal rates were not specific to the intervention units.

Additional studies have been conducted to examine the impact of IDR on patient outcomes. Arora, Patel, Engell, and LaRosa (2014) hypothesized that IDR would decrease the number of indwelling urinary catheters (IUC) and central venous catheters (CVC) days and consequently, decrease the rates of associated infections. The study occurred on a 17-bed intensive care unit (ICU) at a 673-bed urban hospital in Newark, New Jersey for 40 months (20 prior to and 20 after the study). All HCP were involved in patient attended IDR including hospice and palliative care team members, which was different from previous studies mentioned. IDR were conducted Monday through Friday and specifically addressed IUC and CVC including the necessity and duration of catheter in use, and any potential signs and symptoms of infection. Results of the study yielded a statistically significant reduction in IUC days ($p = .05$) and IUC infections rates ($p < .05$) associated with IUC placement. In contrast, there was a significant increase in CVC days ($p < .05$) with a reduction in infections associated with CVC. Researchers concluded that IDR can impact patient outcomes by reducing the IUC days and associated infection rates

as well as reducing CVC associated infections. The length of the study, inclusion of additional care team members (hospice and palliative care), and the use of a pre and post intervention group were strengths of the study. Limitations included the use of only one unit at one facility and the exclusion of non-critical care setting.

O'Leary et al. (2011) argued that IDR would decrease adverse events; thus, improving patient outcomes. Adverse events were defined as "...an injury due to medical management rather than the natural history of the illness" (O'Leary et al., 2011, p. 679). The study was conducted in Chicago, Illinois at an 897- bed tertiary care teaching hospital on two medical teaching units. The two units were randomly divided into a control and an intervention group in which patients were assigned via quasi-randomized fashion. IDR were performed daily using a structured communication tool in a conference room on each unit and included all nurses caring for the patients, residents, social worker, case manager, pharmacist, nurse manager, and the unit's medical director. Data was reviewed after six months of IDR implementation via a random selection of 185 medical records from each unit. Results yielded a significantly ($p=.001$) lower rate of adverse events in the intervention group suggesting that structured IDR improved communication and improve patient outcomes (O'Leary et al., 2011).

The use of a controlled and an intervention group, good inter-rater reliability ($k=0.78$, $k=1$) for data extraction and the inclusion of all healthcare providers during IDR were some strengths of the study. Limitations of the study included use of a single facility, only one intervention unit, and the exclusion of the patient and family during IDR.

Communication

In addition to influencing patient outcomes, IDR may also effect communication between HCP as well. Mazaleski and Schiano (2014) reasoned that instituting a collaborative approach to patient care would improve communication between staff members and hospitalists. The clinical trial focused on pulmonary and cardiac patients on a 39-bed medical surgical unit. The goal was to implement IDR with the hospitalist, charge nurse, primary nurse, case manager, social worker, pharmacist, nutritionist, physical therapist, and a nursing leader in attendance. IDR were performed at the patients' bedside with the electronic medical record open which provided an opportunity for the hospitalist to enter orders and the nurse to update documentation as needed. Feedback from hospitalists and nurses were used to measure communication; however, the method in which feedback was obtained was not mentioned in the article. Researchers attributed the decrease (8.13 to 4.03 days) in patient length of stay (LOS) to better communication between staff members and physicians. The trial also resulted in decreased frustration and stronger working relationships between nurses and hospitalists and improved satisfaction between the nurse and hospitalist. Inclusion of all HCP in IDR, conducting IDR at the patients' bedside, and including patient/family were strengths of the study. The trial lacked use of evidence based measurement tools and used a small and specific intervention group.

IDR has improved patient safety through better communication between HCP (Licata et al., 2013). The impact of IDR on communication was investigated in a 36-bed pediatric intensive care unit (PICU) at a university-affiliated tertiary care level I trauma hospital. IDR were performed by the primary nurse, advanced practice nurse, and

physician caring for each patient. Education was provided to all participants prior to implementation of IDR and a tool was developed to standardize rounds. Data from the study indicated that nurses improved communication of important patient events by 57% and identification of discrepancies in physician orders increased by 26%. The use of a standardized tool for IDR was a strength of the study. There was no indication on the length of study and the IDR excluded respiratory therapist, case manager, and patients' family.

In a final study of communication, Pritts and Hiller (2014) examined the effect of IDR on nurse-physician relationships at a level I trauma center in rural Midwestern United States. The sample size included 26 nurses on a medical unit and 12 hospitalists from the facility. The Collaborative Practice Scale (CPS) was used to measure nurse and physician perceptions regarding nurse-physician relationships. The study revealed a significant improvement ($p=.044$) in the nurse reading the physician notes yet no significant improvements in the nurse rounding with the physician ($p=.375$), the physician rounding with the nurse ($p=.286$), or the physician reading the nurses' notes ($p=.417$). Researchers suggested that IDR may improve communication; however, the data was not conclusive. The low response rates (physicians-6, nurses-12) and limited setting were some limitations of the study. Strengths included the use of evidence-based tools to measure study variables.

Summary

The current literature indicates that IDR may improve patient satisfaction, patient outcomes, and communication between HCP. IDR was noted to improve patient satisfaction and outcomes and communication between HCP when patients were included

in IDR (Pritts & Hiller, 2014), physicians and nurses collaborated on patient care (Mazaleski & Schiano, 2014), IPOC were used to coordinate IDR (Menefee, 2014), a structured SBAR form was used to conduct IDR (Townsend-Gervis et al., 2014), or all HCP were involved in IDR (O’Leary et al., 2011). While studies reviewed were performed on ICU, medical-surgical, pulmonary, cardiac, pediatric, or oncology units, there was a gap in knowledge on the effects of IDR on an inpatient neurological unit.

Miscommunication has been shown to result in decreased patient satisfaction, a decline in patient outcomes, poor nurse-physician relationships and ultimately medical errors resulting in sentinel events (Matzke et al., 2014). IDR has been successful in improving HCP communication and improving patient, HCP satisfaction and patient outcomes. IDR have varied in several ways; who was included, how often they occurred, who lead them, topics of discussion during rounds, and how information was shared and documented. Despite the numerous ways in which IDR were conducted, there were improvements in patient satisfaction and outcomes and nurse-physician relationships. The research question for this study will be:

What is the effect of interdisciplinary rounds (IDR) on nurse-physician collaboration and satisfaction when making patient care decisions in an inpatient neurology medical-surgical setting?

CHAPTER III

Methods

Purpose

IDR has been shown to improve communication and collaboration between HCP and patient and HCP satisfaction. The purpose of this study was to explore the effects of IDR on a neurologic inpatient unit.

Research Question

What is the effect of interdisciplinary rounds (IDR) on nurse-physician collaboration and satisfaction when making patient care decisions in an inpatient neurology medical-surgical setting?

Study Design

A quantitative descriptive study was conducted following implementation of IDR to determine the effect of IDR on nurse-physician collaboration and satisfaction.

Setting and Sample

The study was conducted at a 540-bed tertiary care research and teaching hospital in the southeastern region of the United States on a neurology medical-surgical unit. The 28-bed unit has over 700 patient admissions per month.

The study used a convenience sampling of all nurses and physicians on the unit. Unit employees include 38 registered nurses (RN), four trauma physicians, six trauma residents, and one trauma nurse practitioner. Nurses that worked night shift and weekends were excluded from the study since IDR were not performed on nights and weekends.

Instrumentation

Data was collected using the Collaboration and Satisfaction about Care Decisions (CSACD) tool developed by Baggs (1994). The tool was used to assess the quality of nurse-physician collaboration in making patient care decisions and satisfaction of nurses and physicians with the decision making process. It has two subscales: collaboration and satisfaction. The CSACD consisted of a Likert-type tool of nine items with seven responses ranging from strongly agree to strongly disagree.

The tool is valid and reliable. Content validity was established via nursing and medical expert panel review, and a thorough literature review. The correlation ($r=.87$) of the global collaboration question score with the total of the six critical attribute questions established Criterion-related validity (Baggs, 1994). The large correlation ($r=.66$) between the six critical attribute collaboration questions (total score) and the two satisfaction questions (total score) supported construct validity (Baggs, 1994). Reliability of the tool was supported by internal consistency of the collaboration questions using Cronbach's α (.93) (Baggs, 1994).

The correlation between the two satisfaction items was $r=.64$, the correlation between collaboration and satisfaction with decision-making process was $r=.69$, the correlation between collaboration and satisfaction with decision was $r=.50$ and the correlation with global collaboration items was $r=.78$ versus $r=.50$ (Baggs, 1994).

Protection of Human Subjects

Prior to data collection, the investigator obtained approval from the hospital and university-affiliated Institutional Review Boards (IRB) and completed the required Collaborative Institutional Training Initiative (CITI) course. There were no risks to the

participants of the study. An explanation of the purpose of the study and an informed consent statement was included in the cover letter given to all participants. Implied informed consent was given by each participant who voluntarily completed and returned the survey. There were no incentives for participating or penalties for not participating. Surveys will be printed on color-coded paper to distinguish nurse responses from physician responses, no other identifying information will be collected.

Procedure

Following IRB approval, subjects in the sample were recruited by distributing an information flyer via hospital-approved email addresses and mailboxes. The flyer explained the purpose of the study, how IDR would be conducted, education session information, a study timeline, and how anonymity would be assured.

The investigator identified a physician and nurse champion for IDR implementation and met with them to discuss how and when IDR would occur. Prior to implementation of IDR, the investigator conducted seven 20-minute education sessions at 6:00 AM and 3:00 PM for nurses, physicians, case manager, physical therapists (PT), occupational therapists (OT), speech language pathologists (SLP), and the ethics coordinator. The investigator also met with staff at various other times to accommodate those that could not attend the scheduled sessions. The education sessions included the purpose, time and structure of IDR, the SBAR form to be used during IDR, how to document discharge plans in the EMR, completion of informed consent, and a pre-trial survey using the CSACD tool. The nurse champion facilitated distribution and collection of surveys at each education session to maintain anonymity.

Interdisciplinary rounds were conducted for two consecutive weeks at 10:00 AM each weekday and included the trauma physician and NP, primary care nurse, charge nurse, case manager, and patient; the charge nurse facilitated IDR. Additional ad hoc members included PT, OT, SLP, and an ethics coordinator. IDRs were performed at each patients' bedside using a SBAR form that was already in use by the nursing staff to communicate with physicians. In addition to using the SBAR form, each patient's discharge plan was reviewed during IDR and documented in the electronic medical record (EMR). At the conclusion of each IDR, the charge nurse summarized the content discussed and allowed time for the patient and family to ask questions. After two weeks of IDR all nurses and physicians were asked to complete the CSACD survey and return to the primary investigator. The nurses and physicians had one week to complete and return the surveys to a drop box placed on the neurology unit.

Data Analysis

A statistician assisted the investigator with quantitative descriptive statistics for the study. After the study, the primary investigator entered results from each survey in an excel spreadsheet separating nurses from doctors and pre versus post scores. The survey was scored using a 7-point Likert scale in two categories; collaboration and satisfaction. Descriptive statistics were computed for the sample characteristics using frequency and percentages or mean, median, and standard deviation as appropriate to the measurement level of each variable. Due to the small sample size and the unmatched pre and post surveys, the non-parametric Wilcoxon rank-sum test was used to compare independent population medians between pre and post survey data, and physicians and nurses.

CHAPTER IV

Results

Introduction

Poor communication between nurses and physicians increase the risk for medical errors, patient injury and mortality (Matzke et al., 2014). In 2016, Joint Commission noted that poor communication was the leading cause for infection related events, delays in patient treatments, patient elopements and sentinel events (Perry et al., 2016). In addition to patient outcomes, poor communication negatively affects healthcare costs and healthcare provider satisfaction and collaboration (Menefee, 2014).

Research suggested that structured communication, such as interdisciplinary rounds (IDR) improves nurse-physician communication and patient outcomes (Bascara, 2011). The purpose of this study was to explore the effects of IDR on a neurologic inpatient unit.

Sample Characteristics

The investigator attempted to recruit a total of 33 subjects: 23 nurses, three physicians, six residents, one nurse practitioner. The final sample size for the study was 21 subjects: 17 nurses, one physician, three residents and one nurse practitioner. For this study, all providers (physician, residents and nurse practitioner) were referred to as physicians. Of the 21 subjects, 15 completed the pre and post survey; the other six subjects withdrew from the study for unknown reasons.

Some challenges of the study included, education session attendance, and conducting rounds at 10:00am each day, ensuring the primary nurse, charge nurse, and case manager were available when the physician arrived, consistent use of the SBAR

form during IDRs and obtaining post surveys from all subjects. After the first few days of the trial, the physician actively sought after the charge nurse and case manager to begin rounds. It took approximately five minutes to complete rounds, with the longest round lasting 20 minutes. During some rounds, the electronic medical record was reviewed to clarify and provide additional information such as test results, therapy recommendations, and other physicians' notes. Although the focus of the study was nurse-physician related, patients welcomed IDR and were prepared with questions and family was present to participate.

Major Findings

The research question for this study was, what is the effect of interdisciplinary rounds (IDR) on nurse-physician collaboration and satisfaction when making patient care decisions in an inpatient neurology medical-surgical setting?

HCP collaboration and satisfaction was measured using the CSACD tool, pre and post two weeks of interdisciplinary rounding. The median and interquartile range (IQR) of the nurses' and physicians' responses to each question on the CSACD survey and the Wilcoxon rank-sum *P*-value comparing the two groups are illustrated in Table 1. A *P*-value of ≤ 0.05 was considered significant. Questions one, six, and seven indicated significant increases in HCP perception of collaboration following IDR. Question eight demonstrated a significant increase in HCP perception of satisfaction following IDR. Overall the nurses and physicians felt collaboration and satisfaction improved after IDR implementation.

Table 1

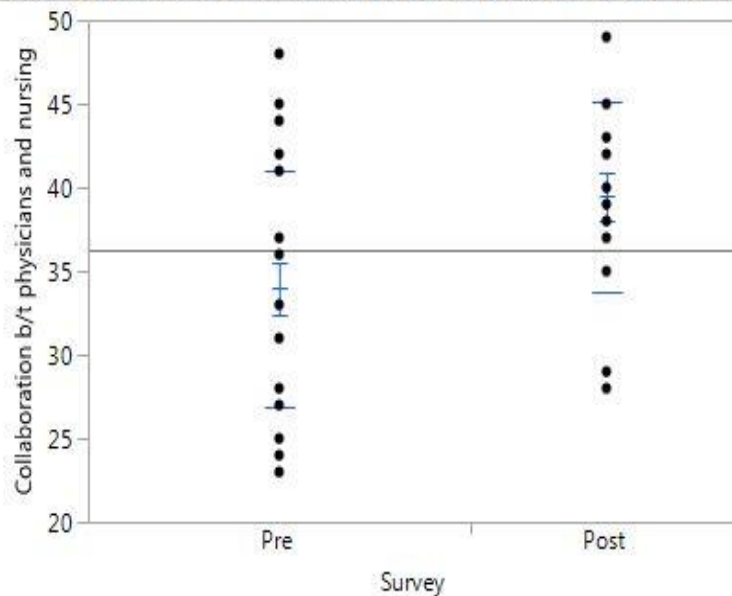
Summary of CSACD Survey Responses and Statistical Inferences

Question	Pre-IDR Nurses' Response (N=16) Median; IQR	Pre-IDR Physicians' Response (N=5) Median; IQR	Post-IDR Nurses' Response (N=12) Median; IQR	Post-IDR Physician' Response (N=3) Median; IQR	Wilcoxon Signed Rank Sums Test (<i>P</i> - value)
1. Nurses and physicians plan together to make decisions about care for the patients on this floor.	5;1.75	6;2	6;1	7;1	0.03968*
2. Open communication between physicians and nurses about patient care decisions takes place.	5;2	6;1.5	5;1	6;1	0.1074
3. Decision-making responsibilities for patients are shared between nurses and physicians.	4.5;2.75	6;2	6;1.75	6;2	0.0975
4. Physicians and nurses cooperate in making decisions about patient care.	5;2	6;2	6;1	6;2	0.0615
5. In making decisions, both nursing and medical concerns about patients' needs are considered.	5;2	6;1.5	5.5;1	7;1	0.1919
6. Decision-making for patients is coordinated between physicians and nurses.	4;2.75	5;3	5.5;1	6;1	0.0326*
7. How much collaboration between nurses and physicians occurs when making patient care decisions?	4;2	4;2.5	6;1	7;2	0.0063*
8. How satisfied are you with the way decisions are made, that is with the <i>decision-making process</i> , not necessarily the decisions themselves?	4.5;1.75	4;2.5	5;1.75	7;1	0.0495*
9. How satisfied are you with <i>decisions</i> made?	5;1	6;1	5;1	7;1	0.0667

* $P < 0.05$

In answer to the research question, nurses and physicians in this sample perceived a significant increase in collaboration ($X = 5.6563$, $P = 0.0174$) after IDR implementation (Figure 2). There was also an increase in perceived satisfaction, although not statistically significant ($X = 3.3629$, $P = 0.0667$) (Figure 3).

Oneway Analysis of Collaboration b/t physicians and nursing By Survey



Means and Std Deviations

Level	Number	Mean	Std Dev	Std Err	Lower 95%	Upper 95%
				Mean		
Pre	21	33.9524	7.10265	1.5499	30.719	37.185
Post	15	39.4667	5.69294	1.4699	36.314	42.619

Wilcoxon / Kruskal-Wallis Tests (Rank Sums)

Level	Count	Score Sum	Expected	Score Mean	(Mean-Mean0)/Std0
			Score		
Pre	21	314.500	388.500	14.9762	-2.362
Post	15	351.500	277.500	23.4333	2.362

2-Sample Test, Normal Approximation

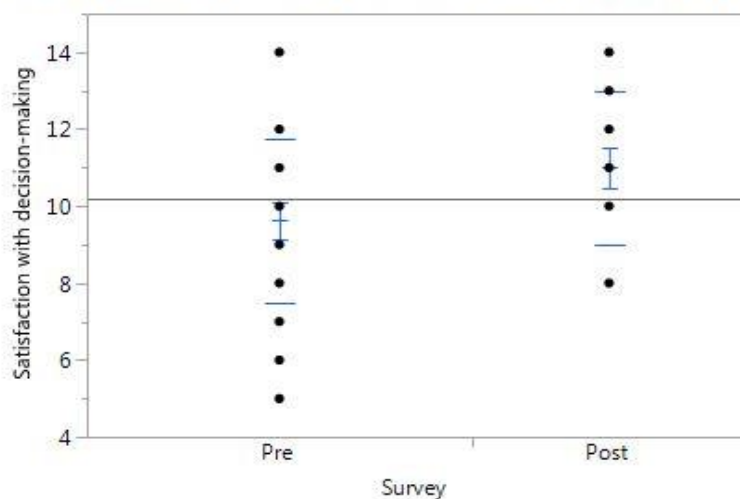
S	Z	Prob> Z
351.5	2.36223	0.0182*

1-Way Test, ChiSquare Approximation

ChiSquare	DF	Prob>ChiSq
5.6563	1	0.0174*

Figure 2. Pre/Post Survey on Collaboration

Oneway Analysis of Satisfaction with decision-making By Survey



Means and Std Deviations

Level	Number	Mean	Std Dev	Std Err		
				Mean	Lower 95%	Upper 95%
Pre	21	9.6190	2.13251	0.46535	8.6483	10.590
Post	15	11.0000	2.00000	0.51640	9.8924	12.108

Wilcoxon / Kruskal-Wallis Tests (Rank Sums)

Level	Count	Score Sum	Expected		(Mean-Mean0)/Std0
			Score	Score Mean	
Pre	21	332.000	388.500	15.8095	-1.818
Post	15	334.000	277.500	22.2667	1.818

2-Sample Test, Normal Approximation

S	Z	Prob> Z
334	1.81760	0.0691

1-Way Test, ChiSquare Approximation

ChiSquare	DF	Prob>ChiSq
3.3629	1	0.0667

Figure 3. Pre/post survey on Satisfaction

When looking at the differences in perception between doctors and nurses, nurses scored lower (indicating less agreement) than physicians in regards to collaboration and satisfaction. Figure 4 illustrates a significant difference in the nurse and physician responses regarding satisfaction ($X = 5.3332$, $P = 0.0209$); nurses were less satisfied with nurse-physician decision making process. There was also a significant difference in the

nurse and physician responses regarding collaboration ($X = 4.8864$, $P = 0.0271$), again, nurses did not agree as much as the physicians that HCP collaborated when making patient care decisions (Figure 5). Figures 6 and 7 illustrate differences in perception of collaboration and satisfaction between doctors and nurses in this sample.

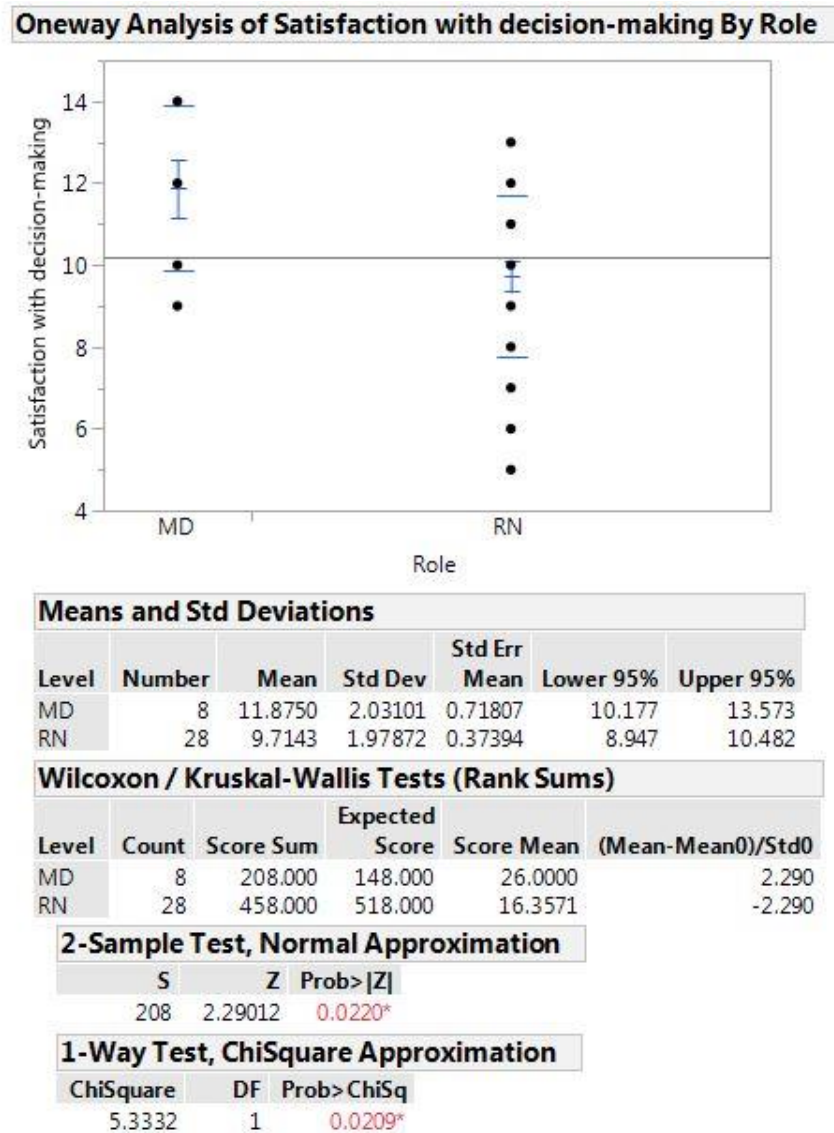
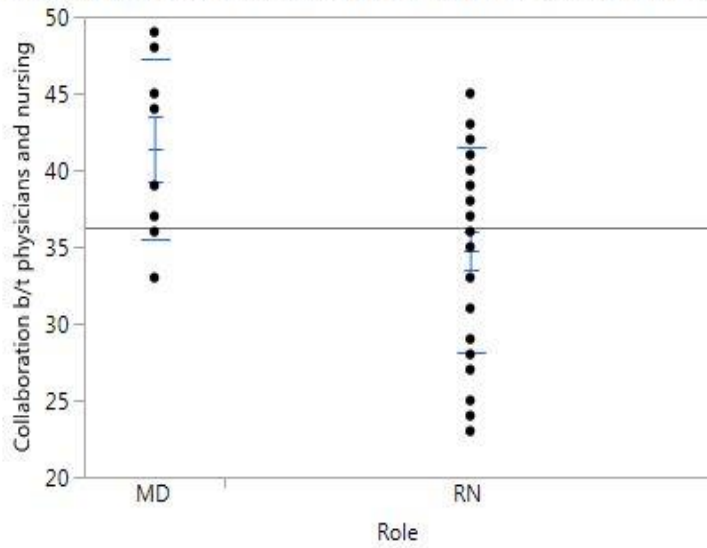


Figure 4. Mean RN & MD Satisfaction Score

Oneway Analysis of Collaboration b/t physicians and nursing By Role



Means and Std Deviations						
Level	Number	Mean	Std Dev	Std Err Mean	Lower 95%	Upper 95%
MD	8	41.3750	5.92663	2.0954	36.420	46.330
RN	28	34.7857	6.70189	1.2665	32.187	37.384

Wilcoxon / Kruskal-Wallis Tests (Rank Sums)					
Level	Count	Score Sum	Expected Score	Score Mean	(Mean-Mean0)/Std0
MD	8	206.000	148.000	25.7500	2.191
RN	28	460.000	518.000	16.4286	-2.191

2-Sample Test, Normal Approximation		
S	Z	Prob> Z
206	2.19146	0.0284*

1-Way Test, ChiSquare Approximation		
ChiSquare	DF	Prob>ChiSq
4.8864	1	0.0271*

Figure 5. Mean RN & MD Collaboration Score

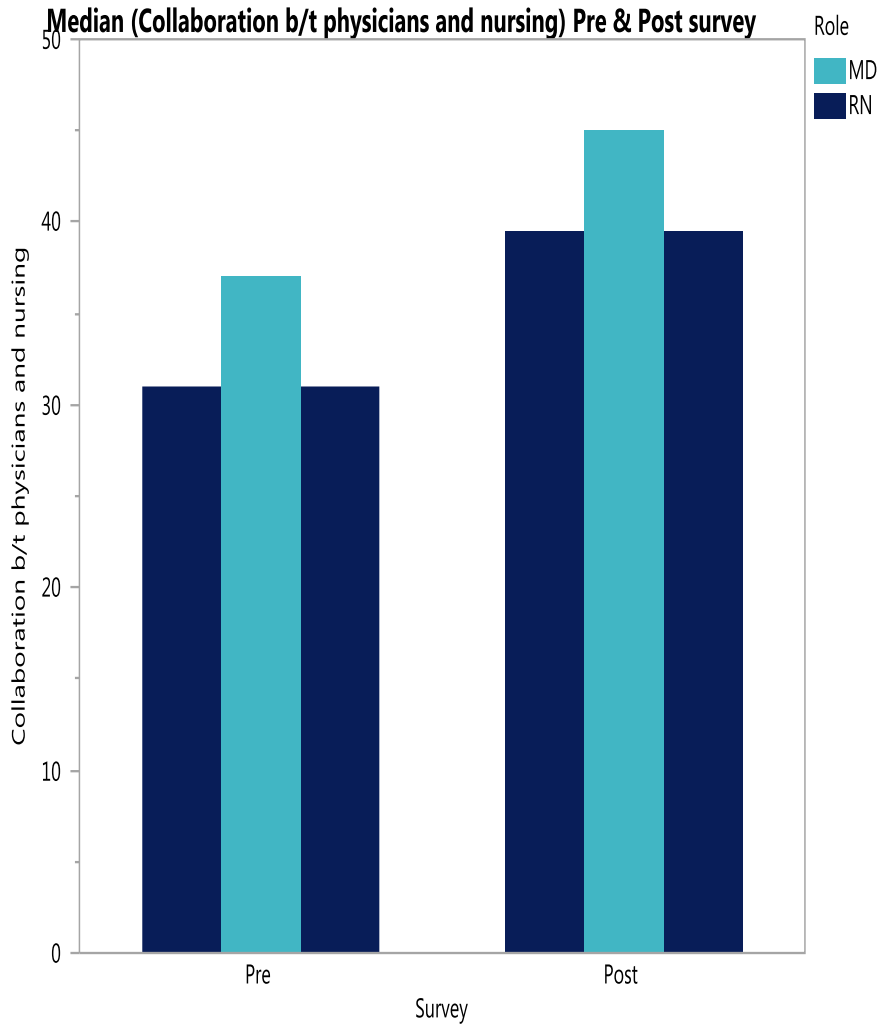


Figure 6. Collaboration Pre & Post Survey

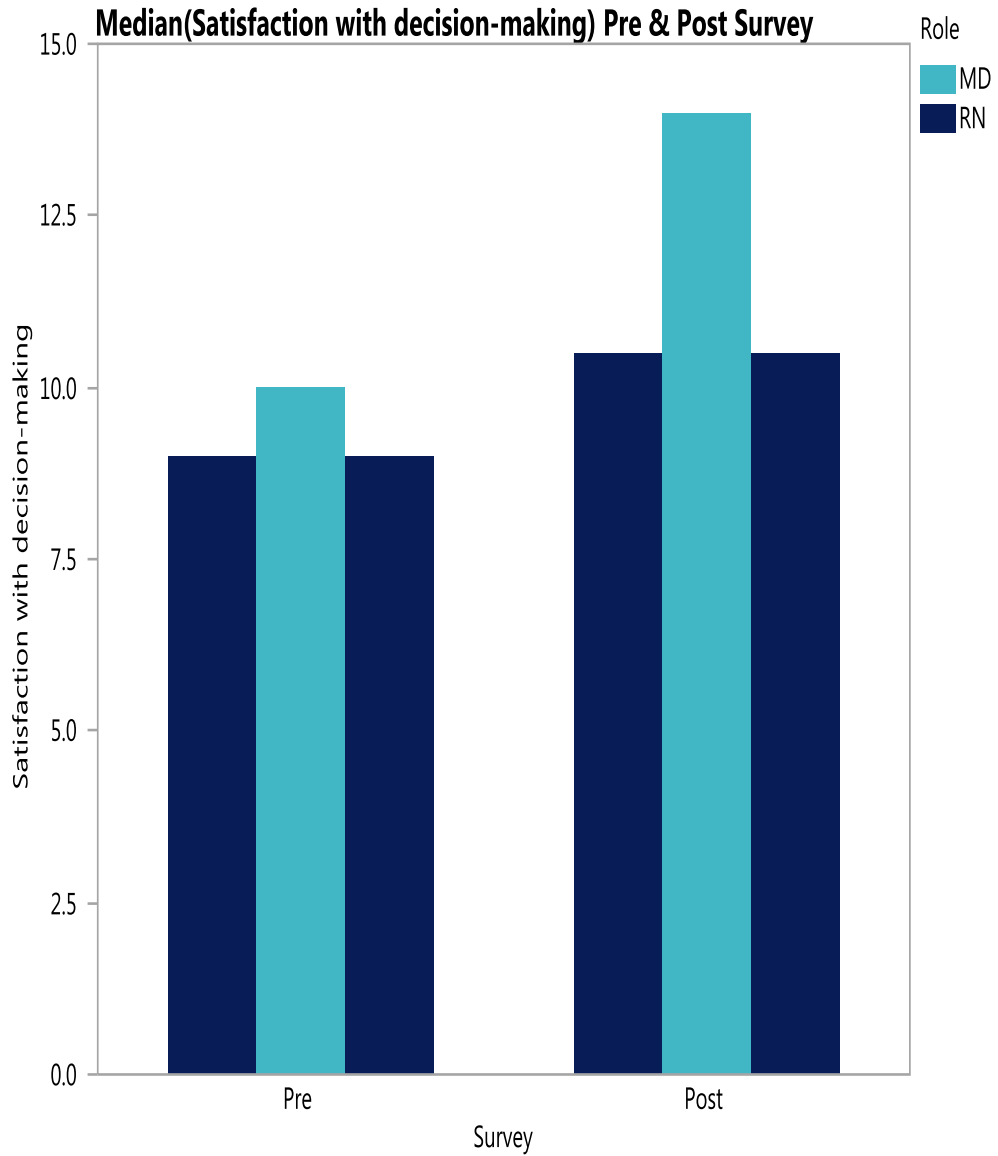


Figure 7. Satisfaction Pre & Post Survey

CHAPTER V

Discussion

IDR were implemented on a 28-bed neurology inpatient unit at a 540-bed tertiary hospital to evaluate the effect on nurse-physician collaboration and satisfaction when making patient care decisions. Following staff education and two weeks of interdisciplinary rounds, there were improvements in nurse-physician perception of collaboration and satisfaction. The results are as the primary investigator expected: improving communication between HCP by implementing daily IDR can improve collaboration and satisfaction. IDR provided a designated time to discuss patient care and address nurse/physician/patient questions and concerns in a structured manner. These findings are consistent with current literature that states IDR have improved nurse-physician relationships, teamwork and satisfaction (Bascara, 2011).

The improvement in collaboration after IDR implementation may be due to the increased teamwork and decision making during rounds as well as the rapport that was established between nurses and physicians. Physicians and nurses may be more engaged in a face-to-face discussion during IDR versus a telephone discussion which impacts one's perception of attentiveness, resulting in improved perception of collaboration. The lack of a significant change in satisfaction with the decisions making process may be due to an established acceptable level of satisfaction prior to HCP rounds.

The difference in nursing and physician scores regarding their perception of collaboration and satisfaction was not surprising. Physicians may appreciate a nurse's presence when they are rounding to assist with patient care and provide information on

patient needs and care plan. Nurses may be less satisfied due to the timing and duration of rounds, which were scheduled at a convenient time for the physicians, not the nurses.

Application to Theoretical/Conceptual Framework

Jean Watson's Theory of Human Caring (2008) was the theoretical framework for this study. Interdisciplinary rounds reflected the four core concepts of Watson's theory; caring for self and others, transpersonal caring relationship, caring occasion/caring moment, and a reflective approach (Watson, 2008). Nurses verbalized how IDR facilitated transpersonal caring relationships between HCP and supported HCP caring for themselves and others; comments were made to the researcher such as "rounding supports patient-centered decisions and improves patient care", "rounds make us work better as a team", "there is a better understanding of patient's plan of care when we round", and "we covered that in rounds, let me explain". The act of rounding is an example of Watson's caring moment concept, the round itself allows for the nurse, physician, and patient to collaborate on patient care needs at the bedside.

Limitations

The primary limitation of this study was the short duration of the interdisciplinary rounding trial. Daily rounds will continue to be implemented on this neurology unit and further analysis may support continued improvements in collaboration and communication between unit nurses and physicians.

Implications for Nursing

Nurse-physician collaboration and satisfaction are improved with interdisciplinary rounds. Nurses and physicians do collaborate to make patient care decisions; however, IDR provides a consistent, structured method of communication to support collaboration.

Structured rounds should include a standard time so all HCP can attend, clear expectations of the purpose of rounds and accountability; administrative support assures successful implementation. Recruiting a physician champion is essential to engage physicians and to act as a liaison between nurses and physicians. The physician champion can collaborate with the charge nurse to select a convenient time for IDR and assist with guidelines and expectations for rounding. Sharing evidence-based literature on the effects of IDR may be beneficial to gain administrative support.

Interdisciplinary rounds were successful on this neurology unit and will continue for the physician group that participated in the study. IDR may be offered to other physicians if there is an interest. Standardizing IDR for all physicians and nurses on this unit would be ideal; however, the numerous physicians involved in each patient's care and time constraints may limit the ability for all physicians to be present at the same time. A modified version of IDR may be attainable with the admitting doctor, primary nurse and case manager.

Recommendations

Additional studies to evaluate the effects of IDR in medical-surgical areas are needed, as there are numerous IDR studies conducted in critical care settings. Specific IDR studies in the medical-surgical areas should be conducted for at least three months, include all physicians participating in each patient's care, include a convenient time for family participation, and include access to the patient's electronic medical record.

Nurses felt rounding was time consuming; however, there were fewer calls to the physicians and nurse stated that they felt more knowledgeable about patient care decisions. Selecting specific topics, such as discharge plans and plan of care for the next

24 hours, to discuss during IDR and remaining on task with those discussions may shorten the length of the rounds. Time was saved by the reduction in physician calls. As IDR becomes routine and more trust is built between nurses and physicians on the neuro unit during rounds, actual rounding time may be reduced.

Conclusion

The study indicated that interdisciplinary rounds improved collaboration and satisfaction between nurses and physicians. Overall, nurses scored less than physicians for collaboration and satisfaction, indicating they did not agree (as much as the physicians) that they were satisfied with the decision-making process and that nurses and physicians collaborated when making patient care decisions. Nurses and physicians verbally expressed their appreciation of IDR and plan to continue rounding together. Additional studies are needed to evaluate the effects of IDR on patient satisfaction and outcomes, nurse retention, and job satisfaction in the medical-surgical areas.

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