Impact of a Nurse-Physician Communication Intervention on Psychological Empowerment and Effectiveness of Collaboration between Medical Staff and Critical Care Nurses

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The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Assistant Dean for MSN and DNP Studies, on behalf of the program; we verify that this is the final, approved version of the student's DNP Project including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Kristen Wieder, Student

Dr. Debra Hampton, Advisor
Impact of a Nurse-Physician Communication Intervention on Psychological Empowerment and Effectiveness of Collaboration between Medical Staff and Critical Care Nurses

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Impact of a Nurse-Physician Communication Intervention on Psychological Empowerment and Effectiveness of Collaboration between Medical Staff and Critical Care Nurses

Abstract

Background: Nurse-physician communication is an essential element of safe, effective patient care, nurse engagement and job satisfaction. Communication breakdowns can lead to poor patient outcomes and disengagement among nurses.

Purpose: The purpose of this project was to determine the impact of a nurse-physician communication intervention on psychological empowerment of critical care nurses. A second purpose of the study was to evaluate the effectiveness of communication between critical care nurses and members of the cardiothoracic surgery team and understand barriers and communication challenges.

Methods: A quasi-experimental pre-test/post-test design was utilized to evaluate the impact of a nurse-physician communication intervention on nurses’ psychological empowerment and perceptions of barriers to communication.

Results: There was no statistically significant difference in psychological empowerment scores or nurse perceptions of communication pre and post intervention. Qualitative data demonstrated some improvement in overall communication.

Conclusions: Further study is needed to determine the extent to which relationship-building interventions can impact nurse-physician communication.
Impact of Nurse-Physician Communication

Introduction

Effective communication between caregivers is an essential component of safe and efficient patient care. When communication between nurses and physicians breaks down, there can be consequences affecting both patients and caregivers. An estimated one third of sentinel events in the United States have been attributed to communication breakdowns among caregivers (Rosenstein & O’Daniel, 2008). Quality of communication between nurses and physicians also has been widely recognized as a major contributing factor to feelings of engagement, efficacy, and, ultimately, job satisfaction among nurses (King & McInerney, 2006). Effective communication, true collaboration, and appropriate staffing ratios are three of the six components of the American Association of Critical Care Nurses (AACN) Healthy Work Environments (HWE) standards (AACN, 2016).

The financial implications of communication breakdowns to healthcare organizations are varied. Direct costs related to redundant testing or procedures are easier to quantify, but the indirect costs can be more difficult to measure. Increased nursing turnover resulting from disengagement can come at a significant cost to health care organizations. The estimated cost of replacing registered nurses ranges between $22,000 and $64,000. Costs associated with replacing a single specialty nurse, such as a critical care registered nurse, are estimated to be approximately $145,000 (Huddelston & Gray, 2016). In addition, for every 1% increase in nurse turnover, an organization loses approximately $300,000 annually (Jones, 2008), with recent national statistics demonstrating an annual nursing turnover rate of 17.2% (Snavely, 2016).

Nursing shortages within organizations could increase within the next few years, due to various generational impacts. In 2013, the American Association of Colleges of Nursing projected that one million nurses will reach retirement age between 2023-2028. Additionally,
based on 2016-2017 enrollment figures, 64,067 qualified applicants were denied admission into baccalaureate and graduate level nursing programs. This was due to a combination of insufficient staff, classroom space, clinical sites, and budget shortfalls (AACN, 2017). The combined impact of these factors leads to a “perfect storm” with regards to nursing shortages, further highlighting the need for organizations to mitigate contributing factors to nurse turnover.

Other indirect costs include increased patient length of stay due to delays in caregiver to caregiver communication, financial penalties in reimbursement from the Centers for Medicare and Medicaid (CMS) due to hospital acquired conditions, as well as inefficiencies created by unclear communication and the resulting need for nurses to locate providers to seek clarification. Nursing time spent on reaching out to providers and seeking clarification is estimated to cost $1.8 million per year in productivity in a 500-bed hospital (Agarwal et al., 2010).

It is well established that job satisfaction and turnover are compromised by ineffective communication and collaboration between nurses and physicians (King & McInerney, 2006). However, the impact extends to patients and outcomes. Ineffective communication has been linked to an increase in hospital- acquired conditions such as ventilator- associated pneumonia, catheter associated urinary tract infections, and central line associated blood stream infections (Boev & Xia, 2015). In addition to the impact to health-related outcomes, patient satisfaction can suffer as a result of ineffective communication and collaboration among members of the healthcare team, due to mixed messages related to the plan of care or prognosis, as well as extended length of stay (Agarwal et al., 2010).
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Background

Effective communication between nurses and physicians is of particular importance in critical care units, due to the complicated nature of the care of patients in these areas. Critical care patients are often under the care of multiple physicians due to a variety of complex medical conditions requiring specialized treatment. Effective communication with physicians is an essential component of the collaboration necessary for critical care nurses to perform their professional responsibilities (Ulrich, Lavandero, & Hart, 2009). Patients admitted to critical care units for cardiothoracic surgery are often among the most critical and complex of all patients in these units. This further emphasizes the need for well-developed communication strategies to be employed by all members of the healthcare team. Various formalized processes for improving nurse-physician communication have been recommended in the literature, including the use of SBAR reporting tools (Situation, Background, Assessment, and Recommendation), and training sessions for members of the healthcare team. One of the most effective strategies mentioned in the literature for improving communication employs relationship development and organizational buy-in as the means by which communication is improved (DeMeester, Verspuy, Monsieurs, & VanBogaert, 2013; Tang, Chan, & Liaw, 2013).

Causes of ineffective communication between nurses and physicians are varied. Understanding on the part of physicians with regard to the role and scope of practice of registered nurses is essential to managing expectations within the care team. When these roles are not clearly understood, physicians may perceive that nurses are not functioning at an acceptable level of practice, and relationships can become strained. Long-held beliefs on the roles of nurses and physicians can also cause misunderstandings that lead to communication
breakdown. This can be influenced by generational differences, as well as gender norms (Robinson, Gorman, Slimmer, & Yudkowsky, 2010).

Communication breakdowns can also occur as a result of disruptive physician behaviors. Based on previous feedback from critical care nurses, disruptive physician behavior was identified as a leading cause of communication breakdown at the intervention site. Some nurse-physician communication interventions have sought to mitigate the impact of such behaviors through educational sessions that teach nurses coping strategies, rather than stopping disruptive behaviors (Rosenstein & O’Daniel, 2008). However, this approach is not in alignment with one of Norton Healthcare’s core values, which is to “Respect Every Person”. Using this value as a guide, an intervention was developed with the aim of getting to the root cause of communication breakdowns and addressing them collaboratively through building relationships and opening respectful lines of communication.

In order to improve communication between nurses and physicians, reasons for communication breakdowns must be clearly understood, and interventions put in place to support a culture of communication and collaboration. Expectations for effective communication must be established and enforced equally among members of the healthcare team. This approach requires significant and genuine buy-in at the facility and organizational level by nursing and physician leadership, as well as administration.

The importance of a healthy work environment has been demonstrated extensively in the literature. Psychological empowerment has been defined as the human response to the work environment (Laschinger et al., 2009) and is the motivation concept of self-efficacy (Conger & Conungo, 1988). Psychological empowerment also has been established as a positive predictor of nursing engagement (Wang, 2015). Because of the link between work environments,
psychological empowerment, and nurse engagement, an intervention aimed at improving the work environment through more effective nurse-physician communication may have an impact on the psychological empowerment of nurses, and improve engagement, by extension.

In 1995, a tool was developed and validated by Gretchen Spreitzer in order to quantitatively measure psychological empowerment in the workplace. Spreitzer adopted the four cognitions put forth by Thomas and Velthouse (1990) as the components of the framework of psychological empowerment. These are meaning, competence, self-determination, and impact. Spreitzer’s tool uses directed questions to measure each of these domains, as well as overall psychological empowerment. When implementing an intervention aimed at improving the work environment through improved communication, psychological empowerment of the participants is a means by which the impact of such an intervention may be measured.

**Purpose**

The purpose of this project was to determine the impact of a nurse-physician communication intervention on psychological empowerment of critical care nurses. A second purpose of the study was to evaluate the effectiveness of communication between critical care nurses and members of the cardiothoracic surgery team and understand barriers and communication challenges.

**Methods**

A quasi-experimental, pre-test/post-test design was utilized for this study. Pre and post implementation surveys were evaluated to determine if the intervention had an impact on psychological empowerment, as well as nurses’ perceptions of communication barriers with cardiothoracic surgeons.
Setting

The intervention was conducted in the Intensive Care/Open Heart Unit (ICU/OHU) at a 432-bed community hospital in the Louisville metro area. This facility is part of a large five-hospital system, whose patient population consists of adult medical and surgical patients, with a high prevalence of Medicare and Medicaid recipients. The mission of the organization is to provide quality health care to all they serve, in a manner that responds to the needs of the communities while honoring the organization’s faith heritage. During the implementation period, two separate Critical Care units (an ICU and an OHU, totaling 34 beds) moved to a new unit and were combined to create a single 36 bed ICU/OHU.

Sample

Inclusion criteria for the study included registered nurses who were employed in the ICU/OHU during the implementation period. Any registered or licensed practical nurses, travel nurses, or agency nurses that were floated to the ICU/OHU during the implementation period were excluded. Any participants whose employment in the unit began or ended during the implementation period were also excluded. Pre-intervention surveys were sent to 109 potential participants, with 48 responding. Post-intervention surveys were sent to the same group, with 28 participants responding.

Procedures

Approval for the study was obtained through the Norton Healthcare Office of Research and Administration (NHORA), as well as the University of Kentucky Institutional Review Board (IRB). A waiver of documentation of informed consent was granted by the University of Kentucky IRB. Study data were collected and managed using REDCap electronic data capture tools hosted at the University of Kentucky. REDCap (Research Electronic Data Capture) is a
secure, web-based application designed to support data capture for research studies, providing 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources (Harris, et al, 2009). Within the REDCap application, a survey was created which included the Psychological Empowerment Tool created by Gretchen Spreitzer (Spreitzer, 1995). The Psychological Empowerment Tool is a validated, reliable tool that attributes scores to four separate dimensions of empowerment (Spreitzer, 1995):

- Meaning;
- Competence;
- Self-determination;
- Impact

Overall empowerment, as well as the four domains contained within, was determined based on 12 questions. These questions were based on a Likert scale of one through seven, with one representing “very strongly disagree” and seven representing “very strongly agree”. Higher scores indicate a greater degree of empowerment.

Questions also were included in the survey to assess nurses’ perceptions of communication with cardiothoracic surgeons and were scored using a Likert scale of one through 5. These items included:

- How often do interactions with CT surgeons negatively impact your confidence in providing patient care?
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- How would you rate the quality of communication between critical care nurses and CT surgeons?
- How often do breakdowns in communication with CT surgeons impact your ability to do your job?

Additionally, two open-ended descriptive questions were included. These included questions related to barriers to effective communication with cardiothoracic surgeons and consequences of breakdowns in communication. An “additional comments” section was also included.

The pre-implementation survey was distributed to all participants beginning one month prior to the start of the intervention. The intervention period began May 1, 2018 and ended on August 31, 2018. The intervention was comprised of weekly debriefings between the Critical Care Nurse Manager and at least one representative of the cardiothoracic surgery group (physician, physician assistant, or nurse practitioner). The debriefings were designed to encourage open lines of communication, provide an opportunity to dialogue about mutual expectations, and identify and address specific opportunities for improvement. Their purpose was to address and resolve any issues or concerns related to communication brought forward by nurses, the nurse manager, or any member of the cardiothoracic surgery group. A debriefing template was used during these meetings to guide discussion and track follow up on issues. After each debriefing session, follow up communication was sent out to all study participants and providers related to issues that were addressed at the debriefing. At the end of the intervention period, the post-implementation survey was distributed to the participants to determine if the intervention had any impact on the psychological empowerment of the participants or their perceptions of communication with the cardiothoracic surgeons.
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Data Collection

A list of potential participants for the study and their corresponding email address was provided by the Norton Healthcare Human Resources Department. Prior to implementation, an informational email was sent to potential subjects detailing the study purpose, methods, risks, benefits, confidentiality and security measures, as well as the contact information for the Principal Investigator (PI). This initial email contained a link to the pre-implementation survey. At the completion of the intervention period, subjects were sent a second email that included a link to the post-implementation survey.

Data Analysis

Quantitative and qualitative analyses were performed. A t-test for independent variables was used to determine the impact of the intervention on psychological empowerment. The overall empowerment score was compared pre and post-intervention, as well as the four individual components of empowerment. A t-test was also used to compare the means for the three additional Likert scale survey questions pre and post implementation of the intervention. Comments on the open response survey questions were analyzed and compared pre and post intervention, and were reviewed for recurring themes. These themes were then categorized and ranked to identify themes that appeared less often to more often

Results

Sample Characteristics

Forty-eight participants completed the pre-implementation survey and 28 completed the post-implementation survey. This decrease in number of survey participants post-implementation was due in part to the fact that 24 nurses left the unit by the end of the implementation. The
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demographics of the pre and post-implementation groups were not statistically significantly different (see Table 3).

**Impact of the intervention**

As demonstrated in Table 4 overall empowerment mean scores were similar pre (5.7) and post (5.5) intervention. There was also little change in the four empowerment domains pre/post: (1) meaning (6.1/6.0); (2) competence (5.5/5.1); (3) self-determination (5.5/5.3); and (4) impact (5.6/5.4). There was no statistically significant change pre and post intervention, although all categories showed a marginal decrease in mean scores. Similarly, there was no statistically significant difference in the mean scores for the three additional questions pertaining to communication with cardiothoracic surgeons: impact on confidence (2.5/2.7); quality of communication (2.7/2.8); and ability to do their job (2.5/2.6), but there was marginal improvement in participants’ perceptions of quality of communication with cardiothoracic surgeons. The mean score increased by 0.1 with regards to impact to nurses’ confidence and ability to do their job (see Table 5).

Descriptive questions were also included in the survey tool. These questions were: “what are the major barriers to effective nurse-physician communication” and “what are the major consequences of breakdowns in nurse-physician communication”? Comments were compiled and evaluated for common themes. The most frequently listed barriers to effective nurse-physician communication (see Figure 1) were:

- Rude or condescending behavior by physicians (mentioned 23 times)
- Physicians rushing or interrupting nurses when conveying information (mentioned 14 times)
- General problems with communication over the phone at night (mentioned 11 times)
Poor communication between members of the cardiothoracic surgery group (mentioned 9 times)

Physicians not sharing the plan of care with the nurse (mentioned 6 times)

Participants also shared a number of thoughts regarding the consequences of communication breakdowns between nurses and the surgeons (see Figure 2). The most frequently listed consequences from these communication breakdowns were:

- Delays in interventions (mentioned 13 times)
- Nurses second guessing/questioning themselves and waiting until the last minute to call (mentioned 12 times)
- Unclear orders (mentioned 6 times)

Weekly debriefings revealed potential underlying causes for physician frustrations that led to communication breakdowns. One such issue was the lack of understanding of nursing scope of practice by the cardiothoracic surgeons. Physicians reported feelings of frustration when nurses did not carry out interventions according to known individual physician preferences. During follow-up, physicians were re-educated on the components and limitations of their postoperative order sets, as well as the limitations of nursing scope of practice. They were also reminded of the need for specific orders to be given for certain interventions that fall outside nursing scope and/or order sets.

Additional concerns were voiced by physicians with regard to routine consults being called to them in the middle of the night. Discussion with staff revealed that they were receiving callbacks from physicians even when they instructed the answering service that the consult was routine, for the morning, and no call back was necessary. Further investigation revealed that
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this was a routine practice of this answering service. Nurses were instructed to wait to call routine consults until the morning, rather than overnight, to prevent unnecessary late night calls to physicians.

Lack of understanding of critical care unit operations emerged as a cause of some physician frustrations. During one debriefing session, the physician stated that he did not understand why a less experienced nurse would be assigned to a cardiothoracic surgery patient when a more experienced nurse was available. This opened the door to a discussion regarding nursing education, resource allocation, and succession planning for future open heart recovery nurses. This brought to light the inherent conflict between the physician’s desire to always have the most experienced nurses caring for their patients, and the need for the nurse manager to educate, prepare, and develop newer or less experienced nurses.

Feedback from nurses during the implementation period, and the comments of both pre and post intervention surveys, revealed a great degree of frustration with lack of communication within the cardiothoracic surgery group itself. Nurses reported physicians voicing anger toward nursing staff for carrying out interventions ordered by other cardiothoracic surgeons. The nurses felt that, rather than discuss their concerns with their partners, the surgeons simply “vented” at the nurses caring for the patients, and no issues were actually resolved. Nurses also reported that the advance practice nurses working with the group would often round early in the mornings before the surgeons and make changes to orders placed by the on call surgeon overnight. This was done to prevent the primary surgeon from becoming upset with decisions made by the “on call” physician overnight. In general, participants felt as though there was a lack of communication between the surgeon who performed the procedure, and the surgeon on call. This
led to on call surgeons feeling uninformed when being paged for patient condition issues which
the primary surgeon or nurse practitioners had been addressing all day.

**Discussion**

The purpose of the intervention was to determine if a nurse-physician communication
intervention would have any impact on psychological empowerment of nurses and their
perceptions of communication with cardiothoracic surgeons. The results of this study did not
demonstrate any statistically significant impact of the on psychological empowerment of critical
care nurses or their perceptions of quality of communication.

While the quantitative analysis did not demonstrate a significant impact on participants’
psychological empowerment or perceptions of nurse-physician communication, the qualitative
analysis demonstrated some improvement in the participant’s perceptions of the quality of
communication with the surgeons. Seven participants noted varying degrees of improvement in
communication in their comments in the post implementation survey. This was also supported by
feedback received from participants during the implementation period, and during follow up on
issues addressed in debriefing sessions.

The pre-implementation psychological empowerment scores were relatively high,
ranking in the 60th percentile for overall empowerment based on Spreitzer’s empowerment
norming scores (Spreitzer, 1995). This could be because critical care nurses, in general,
traditionally demonstrate higher levels of empowerment (Fitzpatrick, Campo, Graham, &
Lavandero, 2010). Because of this, there was little room for significant improvement during the
intervention period.
Minimal studies have been done regarding nurse-physician communication and its impact on psychological empowerment. The psychological empowerment levels demonstrated in this study were similar to those found in a study which evaluated moral distress and psychological empowerment among critical care nurses (Browning, 2013). In Browning’s study the psychological empowerment mean score was 5.31, compared to 5.7 in this study for the pre-implementation period. Additionally, previous studies have established that psychological empowerment is a mediator between work environment and job satisfaction (Carless, 2004), further supporting the link between a healthy work environment and psychological empowerment.

As a result of the information gleaned from the descriptive questions in the survey, plans were put in place to make improvements in several key areas. The cardiothoracic surgeons agreed to participate in regular nursing education sessions. This will take the form of a standing item on the monthly staff meeting agenda. Topics will be decided upon based on areas of need identified by staff, as well as the surgeons themselves. This will give the nurses the opportunity to raise questions in a supportive and non-punitive environment, and will allow the physicians to more thoroughly explain their rationales for patient care decisions. The cardiothoracic surgery group also agreed to implement a formalized handoff process so that the on call physician is aware of issues that occurred in the Operating Room or during the immediate postoperative period, and is better prepared to field calls from night shift staff. Lastly, the practice manager of the group will begin sharing the call schedule each month. This will be posted at the nurse stations, indicating to nurses which surgeon is on call before they place a page to the service, so they can prepare information accordingly.
Limitations

There were many limitations to this study. The short duration of the implementation period was one limitation. Additionally, the number of initial participants who were no longer employed in the ICU/OHU at end of the study reduced the number of total potential participants by 24. At the beginning of the intervention, the site consisted of two separate critical care units. While nurses employed in both the intensive care unit (ICU) and the open heart unit (OHU) had some degree of interaction with the cardiothoracic surgeons, those in the ICU had far less. In many cases the ICU nurses only cared for patients in the period during which the cardiothoracic surgery group was evaluating patients for potential open heart procedures. This may have impacted their perceptions of communication with this group during the pre-implementation survey period.

One month after the intervention began, the two critical care units relocated into a new area of the facility and were combined into a single ICU/OHU. Because of this, there was considerably more interaction between the nurses previously employed in the ICU and the cardiothoracic surgery group, which could have had an impact on the results of the post implementation survey for these participants with regard to psychological empowerment and perceptions of communication.

Changes to the survey tool could also have allowed for a deeper, more meaningful understanding of the problems with communication, allowing for more targeted interventions. As designed, the tool did not allow for a matched comparison to determine how individuals responded pre and post implementation. This could have allowed for a deeper dive into the pre and post implementation survey responses of specific demographic groups, such as newer nurses, or those initially employed in the ICU.
Recommendations for Future Studies

Further work needs to be done to determine ways in which communication can be improved upon within the physician groups, as this was identified as a major contributing factor to impaired nurse-physician communication. Additionally, more long-term data could be collected about nursing turnover, utilizing exit interviews to determine the extent to which nurse-physician communication impacted the decision to leave the ICU/OHU.

Conclusion

Nurse-physician communication plays an important role in the overall workplace environment. The health of this environment is instrumental in determining the degree to which nurses feel empowered. While there was no statistically significant change in the psychological empowerment of the participants after the implementation of this intervention, qualitative and anecdotal evidence suggests that there was some improvement to communication between critical care nurses and cardiothoracic surgeons. More importantly, professional, collegial communication lines were established between nursing leadership and cardiothoracic surgeons which did not previously exist. This has paved the way for additional work to be done to strengthen communication between the two groups, and came at a crucial time of transition. A continued focus on this very important component of patient care is essential to the creation and maintenance of a healthy work environment. Demonstration of engagement in this endeavor by leadership sends a powerful message to nurses and providers alike, and ensures that all understand the expectation of collegial behavior and communication.
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References


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## Table 1: Survey Tool

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Options</th>
</tr>
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</table>
| 1 | What is your age?                                                        | 1) 25 or younger  
2) 26-35  
3) 36-50  
4) 50 or greater |
| 2 | Gender                                                                   | 1) Female  
2) Male |
| 3 | Level of Education                                                       | 1) Diploma or AND  
2) BSN or above |
| 4 | Years as RN                                                              | 1) 2 or less  
2) 3-5 years  
3) 6-10 years  
4) 11-20 years  
5) 21 or greater |
| 5 | Years with Norton Healthcare                                             | 1) 2 or less  
2) 3-5 years  
3) 6-10 years  
4) 11-20 years  
5) 21 or greater |
| 6 | Unit where currently employed                                            | 1) OHU  
2) ICU |
| 7 | Shift primarily worked in this unit                                      | 1) Days  
2) Nights |
| 8 | I am confident in my ability to do my job                                | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
|   | The work I do is important to me                                          | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
|   | I have significant autonomy in my ability to do my job                   | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
<table>
<thead>
<tr>
<th>Impact</th>
<th>Description</th>
<th>Options</th>
</tr>
</thead>
</table>
| My impact on what happens in my department is large | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| My job activities are personally meaningful to me | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| I have a great deal of control over what happens in my department | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| I can decide on my own how to go about doing my own work | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| I have considerable opportunity for independence and freedom in how I do my job | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| I have mastered the skills necessary to do my job | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| The work I do is meaningful to me | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| I have significant influence over what happens in my department | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| I am self-assured about my capabilities to perform my work activities | 1) Very strongly disagree  
2) Strongly disagree  
3) Disagree  
4) Neutral  
5) Agree  
6) Strongly agree  
7) Very strongly agree |
| How often to interaction with cardiothoracic surgeons negatively impact your confidence in providing patient care? | 1) Never  
2) Rarely  
3) Sometimes  
4) Very often  
5) Always |
| How would you rate the quality of communication between critical care nurses and cardiothoracic surgeons? | 1) Never  
2) Rarely  
3) Sometimes  
4) Very often  
5) Always |
| How often do breakdowns in communication with cardiothoracic surgeons impact your ability to do your job? | 1) Never  
2) Rarely  
3) Sometimes  
4) Very often  
5) Always |
| What are the major barriers to effective nurse-physician communication? |  |
| What are the major consequences of breakdowns in nurse-physician communication? |  |
| Additional Comments |  |
Table 2: *Debriefing Tool*

<table>
<thead>
<tr>
<th>Date</th>
<th>Patient</th>
<th>MD/Provider</th>
<th>Other Staff</th>
<th>Issue</th>
<th>Resolution</th>
<th>Follow up</th>
</tr>
</thead>
</table>

Table 3: *Demographics*

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Pre ($n=48$)</th>
<th>Post ($n=28$)</th>
<th>$P$ (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$ (%)</td>
<td>$n$ (%)</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 years or younger</td>
<td>12 (25%)</td>
<td>4 (14.3%)</td>
<td>0.13</td>
</tr>
<tr>
<td>26-35</td>
<td>23 (47.9%)</td>
<td>12 (42.9%)</td>
<td></td>
</tr>
<tr>
<td>36-50</td>
<td>12 (25%)</td>
<td>11 (39.3%)</td>
<td></td>
</tr>
<tr>
<td>50 or greater</td>
<td>1 (2.1%)</td>
<td>1 (3.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td>0.61</td>
</tr>
<tr>
<td>Male</td>
<td>8 (16.7%)</td>
<td>6 (21.4%)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>40 (83.3%)</td>
<td>22 (78.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td>0.67</td>
</tr>
<tr>
<td>Diploma/ADN</td>
<td>12 (25%)</td>
<td>8 (29.6%)</td>
<td></td>
</tr>
<tr>
<td>BSN or above</td>
<td>36 (75%)</td>
<td>19 (70.4%)</td>
<td></td>
</tr>
<tr>
<td><strong>Years as RN</strong></td>
<td></td>
<td></td>
<td>0.27</td>
</tr>
<tr>
<td>2 or less</td>
<td>15 (32.6%)</td>
<td>6 (21.4%)</td>
<td></td>
</tr>
<tr>
<td>3-5 years</td>
<td>19 (41.3%)</td>
<td>13 (46.4%)</td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>5 (10.9%)</td>
<td>2 (7.1%)</td>
<td></td>
</tr>
<tr>
<td>11-20 years</td>
<td>6 (13%)</td>
<td>5 (17.9%)</td>
<td></td>
</tr>
<tr>
<td>21 or greater</td>
<td>1 (2.2%)</td>
<td>2 (7.1%)</td>
<td></td>
</tr>
<tr>
<td><strong>Years at Norton</strong></td>
<td></td>
<td></td>
<td>0.87</td>
</tr>
<tr>
<td>Healthcare 2 or less</td>
<td>13 (27.1%)</td>
<td>8 (28.6%)</td>
<td></td>
</tr>
<tr>
<td>3-5 years</td>
<td>22 (45.8%)</td>
<td>11 (39.3%)</td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>5 (10.4%)</td>
<td>4 (14.3%)</td>
<td></td>
</tr>
<tr>
<td>11-20 years</td>
<td>8 (16.7%)</td>
<td>5 (17.9%)</td>
<td></td>
</tr>
<tr>
<td>21 or greater</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Psychological Empowerment

<table>
<thead>
<tr>
<th></th>
<th>Pre (n=48) Mean (SD)</th>
<th>Post (n=28) Mean (SD)</th>
<th>P (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Empowerment</td>
<td>5.7 (0.6)</td>
<td>5.5 (0.6)</td>
<td>0.16</td>
</tr>
<tr>
<td>Meaning</td>
<td>6.2 (0.6)</td>
<td>6.0 (0.4)</td>
<td>0.25</td>
</tr>
<tr>
<td>Competence</td>
<td>5.5 (0.8)</td>
<td>5.2 (0.8)</td>
<td>0.14</td>
</tr>
<tr>
<td>Self-Determination</td>
<td>5.5 (0.8)</td>
<td>5.3 (0.8)</td>
<td>0.29</td>
</tr>
<tr>
<td>Impact</td>
<td>5.6 (0.6)</td>
<td>5.4 (0.6)</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Table 5: Communication Elements

<table>
<thead>
<tr>
<th></th>
<th>Pre (n=48) Mean (SD)</th>
<th>Post (n=28) Mean (SD)</th>
<th>P (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do interactions with CT surgeons negatively impact your confidence in providing patient care?</td>
<td>2.5 (0.8)</td>
<td>2.8 (0.5)</td>
<td>0.42</td>
</tr>
<tr>
<td>How would you rate the quality of communication between critical care nurses and CT surgeons?</td>
<td>2.7 (0.7)</td>
<td>2.8 (0.4)</td>
<td>0.58</td>
</tr>
<tr>
<td>How often do breakdowns in communication with CT surgeons impact your ability to do your job?</td>
<td>2.5 (0.7)</td>
<td>2.6 (0.6)</td>
<td>0.48</td>
</tr>
</tbody>
</table>
Figure 1: Barriers to Effective Communication

- Rude/Condescending attitudes (23)
- Rush/Interrupt (14)
- Night Shift (11)
- Don't Share Plan of Care (6)
- Lack of communication in group (9)
Figure 2: Consequences of Communication Breakdown

- Delays in Interventions (13)
- Waiting to call (12)
- Unclear Orders (6)