PSYCHOMETRIC ANALYSIS OF AN INSTRUMENT TO ASSESS NURSE LEADERSHIP

by

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First and foremost, I would like to thank my mother. Without her leading by example, I would not be who I am today. Thank you for making me believe I could conquer the world if I set my mind to it.

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ABSTRACT

The purposes of this study are twofold. The first is to revise an instrument that assesses nurse-leadership competencies and perform a content validity of such instrument. Secondly, this study will psychometrically examine the instrument and see if the instrument shows validity through a factor analysis. Nursing leadership is paramount in the complex healthcare system that is in place today. Patients have higher acuity, and nurses require a greater knowledge base to care for such patients. Nurse leaders need competency-based education and training to care for higher-acuity patients. Research exists verifying that effective nursing leadership helps promote better patient outcomes, but there is not an instrument available, created by nurses for nurses, to assess the competencies needed to be an effective leader. A nurse-leadership-competency checklist for critical-care nurses was revised into an instrument that could be used by all nurses for leadership competency. Content validity assessment was performed on this revised instrument through a panel of three judges. All items scored an I-CVI of 1.00 concluding that this instrument had validity. Once content validity was completed, the instrument was put into a Likert Scale format and emailed to 128 registered nurses from two western states. Fifty registered nurses from these two western states responded to the survey. Respondents were required to rate the importance of each factor listed on the survey. These results were analyzed using SPSS version 22 through a factor analysis. The results indicate that the instrument is a reliable tool to assess nurse leadership. The Cronbach's alpha was 0.992. With a Cronbach's alpha being this high, the instrument can have item reduction and still produce good results. This instrument, with further revision and testing, could be instrumental for competency-based leadership skills for nurses.

CHAPTER 1

RESEARCH PROBLEM

Introduction

Nurses must be prepared for the challenges that are to come from healthcare reform and healthcare system changes. The 2010 Affordable Care Act has brought about the largest changes to health care since the 1965 creation of Medicare and Medicaid (Institute of Medicine [IOM], 2011). In addition, the Institute of Medicine (IOM) and Robert Wood Johnson Foundation (RWJF) partnered together in creating the RWJF Initiative on the Future of Nursing. This committee was tasked with producing a report containing recommendations for an action-oriented blueprint for the future of nursing, including changes at the national, state, and local levels. The IOM and RWJF were in agreement that accessible, high-quality care cannot be achieved without exceptional nursing care and leadership (IOM, 2011).

Effective nursing leadership is paramount in the modern healthcare setting where complex, high-acuity patients are the norm (Connelly, Yoder, & Miner-Williams, 2003). However, there is not a leadership-competency instrument nurses can use to assess these necessary leadership skills.

The ways in which nurses were educated during the twentieth century are no longer adequate for dealing with the realities of health care in the twenty-first century (IOM, 2011). Skills needed by nurses have changed dramatically over the past two decades due to rapid changes in the healthcare system and technology (Omoike, 2011).

Much of today's nursing education focuses on acute care and not on care coordination and transitions. The future of nursing cannot flourish and prosper without solutions to the upcoming healthcare system changes. Nurses will need to achieve higher levels of education and training to keep up with this transition.

The Need for Highly Educated Nurses

According to the IOM, nursing represents the largest sector of the health professions, with more than three million registered nurses (RNs) in the United States (IOM, 2011). The most commonly reported initial nursing education of RNs in the United States is the Associate Degree in Nursing (ADN), representing 45.4 percent of nurses. Bachelor's or graduate degrees were received by 34.2 percent of RNs, and 20.4 percent received their initial education in hospital-based diploma programs (U.S. Department of Health and Human Services Health Resources and Services Administration [HRSA], 2010). Due to these numbers, nurses have the potential to effect the needed changes in the healthcare system. Nurses work in close proximity to patients, which gives them the ability to act as partners with other healthcare providers. Nurses need to work to their fullest educational capacity to fulfill their potential as healthcare reform leaders. Recommendation 4, resulting from the IOM report (IOM, 2011), is to increase the proportion of nurses with a baccalaureate degree to 80 percent by 2020, and Recommendation 5 was to double the number of nurses with a doctorate degree by 2020. The qualifications and level of education required for entry into the nursing profession have been widely debated for more than 40 years (HRSA, 2010, IOM, 2010, & IOM,

2011). Although a bachelor's of science in nursing (BSN) is not all that is expected of nurses in the future, it does offer a gateway to other educational pathways such as healthcare financing, community and public health, leadership, quality improvement, and systems thinking (IOM 2010). A more educated nursing workforce would be better equipped to meet the demands of the leadership positions nurses must fill.

Purpose of the Study

The purposes of this study were twofold. The first was to revise an instrument that assessed nurse-leadership competencies that could be used by all nurses. This proposed instrument was then tested for content validity. Secondly, this study psychometrically examined the instrument for validity and reliability through factor analysis. Currently, there is not a valid and reliable instrument that assesses nurse-leadership competencies. A reliable and valid instrument is needed so we can measure leadership competencies and fulfill the recommendations of *the Future of Nursing* report.

Background and Significance

Literature exists on the importance of nursing leadership and the benefits of leadership related to positive patient outcomes; however, there is not a valid and reliable tool that measures leadership-competency standards. According to Omoike, despite the need for nurse-leader education, only recently have guidelines and education initiatives for this group been identified (Omoike, 2011).

Identification of competence is an essential aspect of high-quality, safe, and cost-effective health care; yet there is a lack of guidelines surrounding the competencies needed for optimum role performance (Connelly, Yoder, & Miner-Williams, 2003). Competence is an underlying characteristic of an individual that is directly related to various aspects of effective job performance. "Competency is an exciting and challenging concept that may address certain gaps between education and practice" (Scott Tilley, 2008, p. 63).

Leadership competencies are essential for delivering high-quality care within healthcare organizations. There is strong evidence that healthcare organizations need to invest in appropriate leadership educational development because effective nurse leaders can have a major impact on healthcare costs, quality, staff nurse satisfaction, and turnover (Omoike, 2011). However, many organizations have identified a lack of leadership skills in their nurse leaders (Martin, McCormack, Fitzsimons, & Spirig, 2012) and many nurse leaders are often less prepared to handle management activities than they are clinical activities (Donaher, Russell, Scoble & Chen, 2007).

If we cannot measure leadership competency, we cannot identify areas where growth is needed, and will not be able to provide our future nurse leaders methods for achieving them. Nurses must be competent leaders since, according to the IOM, one of their key recommendations is to prepare and enable nurses to lead change to advance health (IOM, 2011):

> Nurses, nursing education programs, and nursing associations should prepare the nursing workforce to assume leadership positions across all levels, while public, private, and governmental healthcare decision makers

should ensure that leadership positions are available to and filled by nurses.

Significance of the Study

This research will add to the body of knowledge related to nurse-leadership skills and competencies. Nurse researchers will have a reliable and valid instrument to identify beginning competencies and then build educational activities that will help the nurses increase their competency. This is important to guide nursing into the future and change learning/teaching methods that are not effective. If the most important and effective areas in nurse leadership are identified, perhaps this will generate different teaching methods for nurse educators resulting in a higher quality of leadership development for nursing. Nursing administration may also be able to use this information for new graduate nurses coming into the nursing workforce, regardless of their specialty. Having a developed set of core leadership competencies can ensure that our nursing educators are teaching the curriculum that is relevant to nursing leadership. All nurses in all specialties need leadership and management skills to provide optimal patient outcomes, and adding specific leadership competencies to the curriculum is one approach to providing these skills.

Statement of the Problem

Having a nurse-leadership assessment tool is critical to evaluate the leadership-competency baseline for current practicing nurses, and this assessment tool would help new nurses be better equipped to meet the demands of our evolving healthcare system.

Currently, no psychometrically founded instrument exists that can reliably assess nursing leadership competencies. An appropriate instrument to "operationalize a construct," such as nursing leadership, that has been tested for reliability and validity is necessary (Polit & Beck, 2012, p. 351). Developing and implementing a leadership-competency checklist would provide a start to improving the education system and achieving a more educated nursing workforce. The IOM anticipates moving the nursing workforce to an expanded set of competencies, especially in the domains of leadership. The committee understands that, although it may take a few years to build the educational capacity needed to achieve this goal, the goal is achievable and necessary (IOM, 2010). All 50 states have begun to develop nurse-action coalitions related to the IOM recommendations.

Conceptual Framework

The purpose of this study was to psychometrically examine a revised instrument to assess nurses' leadership competencies that could be used by all nurses, and to examine the validity and reliability of the instrument. Rosemarie Rizzo Parse's *Nursing Theory of Human Becoming* provided the theoretical framework for this research.

Rosemarie Rizzo Parse based her theory on the work of Rogers. *Nursing Theory of Human Becoming* "was developed to move nursing's view of the person from a medical model to a human science" (Martsolf & Mickley, 1998, p. 299). Parse's theory sees the person as a participant in situations, and nursing's role is to facilitate the patient making choices in their health experience based on their definitions of health and perception of the situation. Parse defined persons thus: "humans are considered to be

intentional beings involved with their world" (Alligood & Tomey, 2010) and are seen as participants in experiencing situations. "Humans are open unitary beings evolving toward greater complexity through continuous transactions with the environment. Humans are freely choosing agents responsible for their choices" (Parse, 1999, p. 138).

Parse defined health as a "way of being in the world" (Martsolf & Mickley, 1998), not as periods of illness or health. She further defined environment as "the entire universe" (Martsolf & Mickley, 1998, p. 299).

According to Parse, health is a process of becoming; it is not a mere adaptation to external realities. It is the unique, lived experiencing of humans, not a fixed or static state that humans possess. Health is not defined as a cause-effect entity, as the opposite of disease, or the achievement of well-being. Rather, it is the continuously changing and novel incarnation of value priorities—a way of living. Human health is an ongoing participation of life. It cannot "be interrupted or qualified by terms such as good, bad, more, or less" (Parse, 1999, p. 138).

A basic theme to Parse's existentialism is "that human existence is given, but what the individual makes of it—his essence—is up to him. What humans make of their existence is a matter of their own choosing. Humans are free agents capable of making responsible choices" (Parse, 1999, p. 138).

Parse contends that "people live in the moment and what is remembered and what is hoped for are always viewed within the reality of the now. Further, universal experiences cannot be reduced to linear time frames because lived experiences are concreted with indivisible, unbounded knowledge" (Alligood & Tomey, 2010). Parse has

extensively written about her beliefs concerning nursing as a basic science and not as a concept in the metaparadigm of the discipline. Parse has been advancing the belief that nursing requires theories that are different from other disciplines. Parse (2000) wrote, "It is the hope of many nurses that nursing as a discipline will enjoy the recognition of having a unique knowledge base and the profession will be sufficiently distinct from medicine that people will actually seek nurses for nursing care, not medical diagnoses" (Alligood & Tomey, 2010, p. 513). Parse's theory identifies nursing's responsibility to society. Her view of health-as-becoming is visionary and applicable to the constant changes and adaptations within the healthcare system (Walker, 1996). Nurses have the capability to be visionary like Parse and utilize their unique knowledge base to enhance and make a difference with the healthcare system changes that are inevitably taking place. Revising a checklist to determine where nurses' leadership competencies lie is vital to these needed changes.

Discussion of Selected Theory

Nurse theorist Rosemarie Rizzo Parse supports the idea that nurses require a unique knowledge base and that all humans are linked together. People choose their actions, and their involvement is intentional and not random. This research will support the idea that nurses do require a unique knowledge base and that an instrument made by nurses for nurses related to nurse-leadership competencies is ideal. Nurses' involvement in this research is intentional and not random. They are helping this researcher bridge the gap between what is known and what knowledge needs to be known. Parse's theory of

human becoming contributions to nursing demonstrates the continuous evolution of knowledge (Pilkington, 2007). As Parse suggests, "what will be in the future is being cocreated now." Parse also described that courage is needed in leading from a human-becoming perspective. Without courage, nurse leaders would not be able to participate in risk-taking and would be unable to act without immediate supervision. She specified "that authority and responsibility and, thus, power reside with the constituents of a situation," and her human-becoming model focuses on principles by putting forth the assumption that "infinite possibilities emerge with persistently pursuing excellence," (Bunker, 2009). Simplified, all nurses have the responsibility to continue to pursue their individualized growth and contribution to the field of nursing. Nurses have a unique knowledge base and, although leadership competencies may be similar to other fields of study, they are distinct. Parse's theory of human-becoming coincides with the relevance of this study due to the never-ending pursuit of knowledge and necessity of nurse-leadership competencies, making it a significant contribution to the field of nursing.

Research Question

Two questions will be answered by this study. The first question is: Does the proposed nurse-leadership-competency instrument have content validity? The second question that will be answered is: Does the proposed nurse-leadership-competency instrument show validity through factor analysis?

Definition of Terms

The following terms are defined to provide a basis for this research.

1. Nurse: "A person who cares for the sick or infirm; *specifically;* a licensed healthcare professional who practices independently or is supervised by a physician, surgeon, or dentist, and who is skilled in promoting and maintaining health" (http://www.merriam-webster.com/medlineplus/nurse). Nurses in this research are registered nurses and are licensed in the State of Idaho.
2. Leadership: "The use of personal traits and personal power to constructively and ethically influence patients, families, and others toward an endpoint vision or goal" (Yoder-Wise, 2003).
3. Management: "A set of behaviors and activities that provides structure and direction in conducting patient care and organizational functions where norms and outcomes to be achieved are known and where a desired sequence to accomplish these outcomes is prescribed, either in writing or through historical practices embedded in the organization's culture" (Yoder-Wise, 2003).
4. Competency: "The quality of being adequately or well qualified physically and intellectually; a sufficiency of means for the necessities and conveniences of life" (http://www.merriam-webster.com/dictionary/competence).

5. Content Validity: “The degree to which the items in an instrument adequately represent the universe of content for the concept being measured” (Polit & Beck, 2012).
6. Reliability: “The degree of consistency or dependability with which an instrument measures an attribute” (Polit & Beck, 2012).
7. Validity: “A quality criterion referring to the degree to which inferences made in a study are accurate and well-founded; in measurement, the degree to which an instrument measures what it is intended to measure” (Polit & Beck, 2012).

Assumptions

The following assumptions provide a basis for this study:

1. Consistent with Parse (1990), the researcher believes that humans are freely choosing agents, capable of making choices and responsible for their own choices. This assumption makes it likely that nurses will base their answers on lived experiences within their reality of now, and upon choices they have made in the past.
2. Variables are normally distributed in the population of the sample size; thus, the knowledge gained from studying the variable will increase understanding of the theoretical concept that the variable represents (Burns & Groves, 2003).
3. Understanding core competencies of nurse leaders is important; but being able to incorporate these competencies into nursing programs has not been

accomplished. Having a reliable and valid instrument to assess leadership competencies will improve future educational pathways of nurse-leadership programs by allowing nursing programs to focus on identified, needed competencies.

4. Statistically significant differences relate to the variables under consideration.

Limitations

The study may face the following limitations:

1. Inconsistent use of search terminology may result in the researcher being unable to recover eligible, high-quality studies. To limit this effect, only certain words were used to search the databases for research material.
2. The amount of time the researcher had to perform such a study may limit the research findings by not having the most current EBP research for the study. To limit this effect, the researcher utilized the limited time for the study by only using the most recent data related to the research questions.
3. Personal bias of the researcher and personal bias of the sample of nurses used for the research may limit the research findings. The Likert scale developed for this study was designed to eliminate these potential personal biases.
4. The lack of financial funds for the researcher to use during the research study may limit the research findings.

5. Nurses that completed the nurse-leadership-competency checklist ranged from novice nurse to expert nurse.
6. The reliability and validity of this study cannot be proved—only supported—which may limit the generalizability of the research findings.

Competency-Based Approach

In 2003, the IOM's Health Professions Education: A Bridge to Quality called for system-wide changes, encouraging healthcare professionals to move to a competency-based approach to education (IOM, 2003a). Leadership competencies are essential for the nurses of the future and should be evaluated and treated as such. A competency-based approach would ensure students demonstrate mastery of these set competencies (IOM, 2003a). Having a standardized nurse-leadership-competency checklist that is reliable and valid would give educators the necessary tool needed to assess for mastery of such competencies within future nursing students. There is research and literature to defend the importance of nursing leadership and how it relates to better patient outcomes as discussed in Chapter One; however, there is no available research related to the purpose of this study. There is not a nurse-leadership-competency checklist that can be used by all nurses that has been tested for reliability and validity.

Summary

Throughout the chapter, the researcher has stated the research aim, which is to revise and psychometrically examine a leadership-competency checklist that can be used

by all nurses. The importance of nurse leadership and the need for nurse-leadership competencies to develop future nurse leaders has been established. There also has been an examination regarding the purpose, background and significance, conceptual framework, definitions, assumptions, and limitations related to the research. In the following chapters, the researcher will provide a detailed review of the literature related to the proposed research questions as well as display deficits found in that literature. Knowing that certain principles of leadership development are applicable to all leaders, but others are explicit to nurses, will help the development of a nurse-based leadership-competency-assessment tool. Chapter Three presents the design of the study and methods used to collect the data, the instrument used, and the methodology of data analysis. Chapter Four describes the results of the study along with the statistics of the data. The final chapter (Chapter Five) presents a discussion of the findings, limitations, and implications of the study.

CHAPTER TWO

LITERATURE REVIEW

Literature Search

The purpose of the data collection was to conduct an extensive review of the literature and collect relevant articles that meet specific inclusion criteria. The criteria for inclusion or exclusion are as follows.

Inclusion/Exclusion Criteria

There was a vast amount of research related to nurse leadership. To sort through what was relevant to the research questions, inclusion and exclusion criteria were formed. These criteria were used for inclusion or exclusion of this literature review. The first criterion used was dates of publication limited to the past ten years, spanning from 2003 to 2013, and articles were limited to only those that were available as a full text document.

The second criterion was to review the articles for relevance to *The Future of Nursing* report recommendations. If the articles produced research that related leadership to positive patient outcomes, research that related nurse-leadership education to positive patient outcomes, or research related to preparing future nurse leaders, the articles were included.

The third criterion was to use peer-reviewed journals as the primary source to ensure quality and accuracy. Some secondary sources were used due to the lack of

primary sources found at the local and state level related to nurse leadership. When these secondary sources were used, it was to provide an overview of the topic.

The last criterion was that all articles were written in English and limited to taking place in North America. This was done to limit the number of articles related to nursing leadership and to ensure the relevance of these articles to *The Future of Nursing* report.

Search Methods

The *Cumulative Index to Nursing and Allied Health Literature* (CINAHL) was utilized as the database for the purposes of the literature review. CINAHL was used as the electronic database due to covering all English-language nursing and allied health journals (Polit & Beck, 2012). The database searches were conducted using key words including "nurse leadership competency checklist," "nurse competency checklist," "leadership competency checklist," "reliable nurse leadership competency checklist," "valid nurse leadership competency checklist," "reliable nurse competency checklist," "valid nurse competency checklist," "reliable leadership competency checklist," "valid leadership competency checklist," "nurse leadership competency," "leadership competency," "nurse leadership," and "nursing leadership." The results of the search are listed below and in Search Results (Appendix A).

Table 1: Search Results

Search Term	Number of research articles found	Number of duplicates with other searches	Number of articles reviewed	Number of articles to be included in this study
Nurse leadership competency checklist	0	0	0	0
Nurse competency checklist	0	0	0	0
Leadership competency checklist	1	0	0	0
Reliable nurse leadership competency checklist	0	0	0	0
Valid nurse leadership competency checklist	0	0	0	0
Reliable nurse competency Checklist	0	0	0	0
Valid nurse competency checklist	0	0	0	0
Reliable leadership competency checklist	0	0	0	0
Valid leadership competency Checklist	0	0	0	0
Nurse leadership competency	9	0	6	0
Leadership competency	27	3	27	0
Nurse leadership	90	13	26	13
Nurse Competency	48	0	15	2
Parse	7	0	7	2
Instrument	3336	1	63	2

Supplemental Search Methods

The references of several review articles and studies that did not meet inclusion criteria were hand-searched for relevant articles. The hand-reviewed articles that were included in this study are articles that provide supplemental evidence linking nurse leadership to positive patient outcomes.

Findings

Using the search terms, a total of 3,511 articles were produced. Nineteen articles met inclusion criteria after review with only one article being relevant to the development of nurse-leadership competencies. Sheila Grossman, PhD, APRN-BC, FNP is the author of that article.

Grossman's Work

Effective leaders are people who can empower others and assist them in making the most significant contribution to others (Grossman, 2007). Grossman suggests nurse leaders can be made and are not born. She also suggests that there are certain skills and experiences that would generate the most effective learning in the areas of leadership and management for the critical-care nurse. This researcher suggests that there is leadership potential in all nurses and that nurse leaders of today could generate effective leadership skills in our nurse leaders of the future. To do this, nursing needs a valid and reliable instrument to measure such leadership competencies. There is not a valid and reliable

instrument that has been developed by nurses for nurses to test for these nursing leadership competencies.

Grossman's Leadership and Management Competency Checklist was used as a model for this research. The competency checklist was originally developed for critical-care nurses. Grossman stated that critical-care nurses need to be more effective leaders, and that delivering quality and cost-effective patient-care outcomes have become goals of all nurses. Due to this belief that nurses need to practice and attain leadership ability, she developed a leadership and management competency checklist. This checklist consists of nine categories (communication, collaboration/networking, decision-making/problem-solving/troubleshooting, unit vision/research development, risk management, image and professional role development, unit management, team building/empowerment, and personal goals/specialized unit activities) that she formulated from her experience, literature review, and analyzing data collected during her study (Grossman, 2007). This checklist will be formatted into a Likert scale to assess current nurse-leadership competencies.

Summary

There was a large amount of information available related to nursing leadership and nurse instruments, but no literature was found on a valid and reliable leadership-competency checklist. Grossmans competency checklist and *The Future of Nursing* report were the basis of relevant research in this study. The literature reviewed provided

an understanding of the importance of nurse leadership and evidence that this study was appropriate based on the current knowledge of this problem (Burns & Grove, 2003).

CHAPTER THREE

METHODS

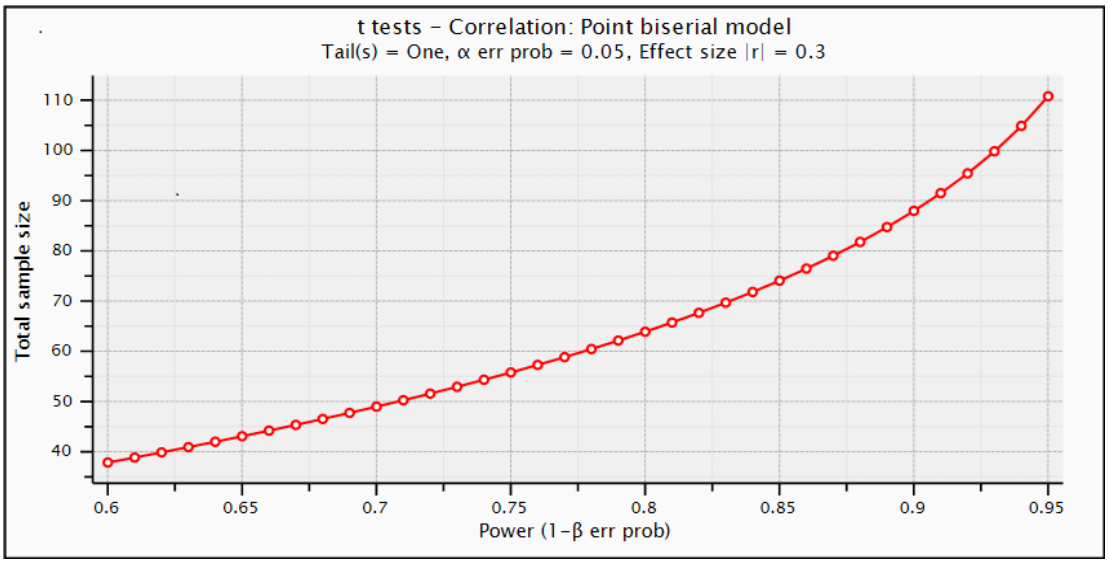
Population and Sample

The overall target population in which this researcher is interested is all United States citizens who are registered nurses. This study examined perceptions of an accessible population of registered nurses who work in a variety of settings across two rural western states. This researcher selected the accessible population samples that would "achieve statistical conclusion validity" and give the researcher the ability "to generalize the results" (Polit & Beck, 2012, p. 273). A sample of nurses who had a valid registered nurse license, at any educational level, and resides in these two rural western states was selected. These two rural western states were used as the nonprobability sampling method of convenience due to the limitations of time, practicality, and cost that affected this research. "Nonprobability sampling is less likely than probability sampling to produce representative samples. Despite this fact, most studies in nursing and other disciplines rely on nonprobability samples" (Polit & Beck, 2012, p. 276).

Power analysis, using G*Power 3.0.10, was done using a medium effect size of 0.3, an alpha level of 0.05, a 0.80 power, and *a priori* analysis (G*Power, 2008). Power analysis was used to "reduce the risk of Type II errors and strengthen statistical conclusion validity" (Polit & Beck, 2012, p 422). Power calculations were based on an assumed medium effect size, the conventional standard of 0.80 power, and an alpha level of 0.05, because having "a stricter criterion requires sample sizes much larger" than this

researcher could perform. The power analysis performed with these criteria determined that a sample size of 64 participants would be required. (See Table 2).

Table 2: Power Analysis



An information letter (Appendix B) was included with each survey. This letter provided information about the study, procedure for completion of the survey, risks and benefits to the participant, confidentiality, and the researcher's contact information. The information letter, along with the demographics questionnaire (Appendix C) and survey, was distributed to registered nurses throughout two rural western states. All registered nurses known by this researcher were invited to participate and be included in this sample. A total of 128 surveys were sent out and 50 responded resulting in a 39.06% response rate.

Discussion of Rights of Human Subjects and Consent Process

The study was submitted to the Montana State University's Institutional Review Board for approval. The purpose of the study was identified to all participants by the information letter attached to the survey. The information letter explained that no risks or additional effects were likely to result from participation in this study and, in the unlikely event of harm arising from participation, that no reimbursement, compensation, or free medical/mental health treatment would be offered by Montana State University or the researcher. The information letter also discussed potential benefits from participating in the study, explaining that, although there was no direct benefit for participation in this study, the results from this study provided information that may be used to help develop current nurse-leadership competencies and nurse leaders of the future. This study helps in the development of a valid and reliable instrument to test nursing-leadership competencies. Consent was implied, as identified in the consent letter, when a participant completed the survey and returned it to the researcher.

Design

The research design used in this study was descriptive correlational design. This design would "describe relationships among variables rather than to support inferences of causality" (Polit & Beck, 2012, p.226). "Correlational studies" could "play a role in developing an evidence base for causal inferences" and pave the way for more in-depth, "rigorous prospective studies" (Polit & Beck, 2012, p. 229). It is the general thinking that

correlational design cannot support causality, but that perhaps it can, indeed, provide an evidence base that supports causality.

The purpose of this study was to develop and psychometrically examine an instrument designed to assess a nurse's leadership competencies with leadership being the dependent variable and the nurse's age, gender, level of education, and years of experience being the independent variables. This instrument was developed based on a published (Grossman, 2007) checklist, and was designed to be used by all nurses.

Using a methodologic study approach, "the goal of developing a high-quality instrument" was achieved and the researcher was able to use this instrument to obtain quantitative data (Polit & Beck, 2012, p. 268). Within this reality of methodology lies phenomenological research. "Parse secured nursing as a human science" and her theory has been used in qualitative research studies, but also can be linked to quantitative research studies (Alligood & Tomey, 2010, p. 504). Parse understood that nursing requires a unique knowledge base that guides its practice and research, and that humans are intentional in their actions and are ever changing. The participants in this study are registered nurses with a unique knowledge base and are always changing. "Human beings live what was, is, and will be in the now moments of their intersubjective relationships with the universe" (Alligood & Tomey, 2010, p. 505). Understanding that things are always changing is the reality of this research and that the data collected was the reality of the participants' own unique views about life and nursing leadership.

Instrumentation

The survey instrument was designed to collect data to discover how registered nurses view leadership competencies and was designed in a Likert scale for reliability and validity testing. Grossman's Leadership and Management Competency Checklist (Grossman, 2007) was adapted into a Likert scale with her permission (see her permission document in Appendix D). The original competency checklist consisted of 79 identified leadership behaviors, and those 79 leadership behaviors were also included in the instrument. The content of the original checklist was not altered; only changed into an instrument for testing. The instrument (in Likert scale form), along with the information letter and demographic-data questionnaire, was designed using Microsoft Word and Survey Monkey.

Respondents were asked to evaluate the frequency of use of each item in the typical five-level Likert scale item with responses as:

- Always
- Frequently
- Sometimes
- Rarely
- Never

Enclosed with the survey was a demographic-data questionnaire that included: (a) age, (b) gender, (c) level of education, and (d) years of experience in nursing practice. These demographics were selected because "this information is critical in interpreting results

and understanding the population to whom findings can be generalized" (Polit & Beck, 2012, p. 293).

The revised instrument's content validity was reviewed by the research committee. "Content validity is the determination of the content representativeness or content relevance of the elements/items of an instrument by the application of a two-stage process" (Lynn, 1986, p.382). Using a two-stage process to determine and quantify content validity is fundamental to the validation of virtually all instrumentation" (Lynn, 1986, p. 382). Expert review of the items on the instrument is advisable, and the experts should be knowledgeable about the key construct and the target population (Polit & Beck, 2012). With three or four experts, "all must agree on the content validity for their rating to be considered a reasonable representation of the universe of possible ratings" (Lynn, 1986, p. 383) using the standard four-point scale of relevance (Polit & Beck, 2012).

Procedures for Data Collection

The research materials were distributed to registered nurses in two rural western states via email. Recruitment of RNs for the survey was accomplished by personal contact of the researcher. The researcher used her known community status to recruit local RNs from within a community and asked other RNs outside of the community to complete the survey via email. Completed survey data was collected by the researcher and analyzed using SPSS version 22.

Analysis

Content validity was assessed using a panel of three judges. This content-validity assessment answered research question one: Does the proposed instrument have content validity?

Data from the completed surveys was entered and analyzed using SPSS version 22 (*SPSS*, 2013). A factor analysis was completed using SPSS with this data. The researcher used the demographic data as descriptive data. The descriptive data was examined for understanding the data and identification of variables.

The data was also examined to answer the second research question: Does the proposed instrument show validity through factor analysis? A factor analysis was used to answer this question.

Summary

The population and sample for this study were registered nurses with valid licensure in two rural western states. The consent process was completed and permission was obtained to start the collection of data. An information letter was attached to every survey that explained no risks or additional effects were likely to result from participation in this study and that there was no direct benefit. A descriptive correlational design was used for this study to find potential relationships between variables, with the goal of developing a high-quality instrument to assess nursing leadership. Data collection procedures were followed as this researcher contacted every registered nurse known, as well as registered nurses referred from outside resources. A total of 128 personal emails

of registered nurses in two western states were utilized. The instrument was revised from a previous Leadership and Management competency checklist for critical-care nurses developed by Sheila Grossman, PhD, APRN-BC, FNP. This original checklist consisted of 79 items. These 79 items were carried over into Survey Monkey by this researcher. Content validity was performed on the revised instrument using a four-option rating scale (1 = not relevant; 2 = unable to assess relevance without item revision or item is in need of such revision that it would no longer be relevant; 3 = relevant, but needs minor alteration; and 4 = very relevant and succinct) by this researcher's chair and committee members. After content validity was performed and minor alterations made to the instrument, the instrument was sent out to 128 registered nurses via email. The survey opened June 26, 2014, and was closed on September 21, 2014. A factor analysis was completed using SPSS version 22 (*SPSS*, 2013). The following chapter will discuss the results of the content validity and the factor analysis.

CHAPTER FOUR

RESULTS

The purpose of this study was to revise an instrument that assessed nurse-leadership competencies for use by all nurses, and also to psychometrically examine the reliability and validity of that instrument. A 79-item checklist developed for critical-care nurses by Grossman (2007) was revised by this researcher into a Likert-scale instrument.

The instrument was revised based on a content-validity review by three judges. "External review of the revised items by a panel of experts should be undertaken to assess the scale's content validity" (Polit & Beck, 2012, p. 357). The research results reported included data from the following: (1) results of the content validity testing, (2) descriptive data of the survey participants, (3) results of the item analysis through the testing of the instrument, and (4) the reliability and validity results from the testing of the instrument.

Analysis Regarding Research Question One: Does the Proposed Nurse-Leadership Competency Instrument Have Content Validity?

The revised instrument was formatted on Survey Monkey (www.surveymonkey.com) and submitted to a panel of three judges (researcher's research committee) for a content validity assessment. "There are no completely objective methods of ensuring adequate content coverage on an instrument, but it is common to use a panel of experts to evaluate the content validity of new instruments" (Polit & Beck, 2012, p. 337).

The panel of content validity judges were Christina L. Sieloff, PhD, RN, Associate Professor, College of Nursing, Montana State University, who has expertise in instrument development, nursing management and administration, and group empowerment; Teresa Seright, PhD, RN, CCRN, Associate Teaching Professor, Montana State University; and Jane Scharff, Associate Clinical Professor, Montana State University College of Nursing.

Background information of the panel judges include the following: Dr. Christina Sieloff is an Associate Professor in the College of Nursing at Montana State University. She received her BSN, MSN, and PhD from Wayne State University's (WSU) College of Nursing, Detroit, Michigan. WSU was well-known at the time for their emphasis on the use of nursing theory. It was during her PhD that she began meeting with Dr. Imogene King (one of the original nurse theorists) who served as her mentor. Also, during her doctoral studies, she developed the middle-range theory of group empowerment within organizations, and the related instrument, the Sieloff-King Assessment of Group Empowerment with Organizations, both from within Dr. King's conceptual system. Since that time, she has published 26 articles, two editorials, 16 book chapters, edited two theory books, and had an additional theory book translated into Swedish. In addition, she has presented 27 times, from local to international conferences. Her theory and instrument have also been used by national and international researchers, with her instrument translated into Finnish, Hebrew, and, currently, Korean. Along with Dr. King, Dr. Sieloff was a founding member of the King International Nursing Group and served as its president. Her passion is nursing theory and its contribution to the profession, and

she requires each graduate student with whom she works to use a nursing theorist as a basis for their research. She welcomes any opportunity to speak to nurses about nursing theory and its use in practice.

The second content validity panel judge was Teresa Seright, PhD, RN, CCRN. Teresa Seright is a PhD-prepared RN, holding critical-care certification (CCRN), and Associate Teaching Professor at Montana State University. Her 30-year career has included leadership roles in management, supervision, medical flight crew, involvement and leadership in performance improvement projects in acute and critical care, and service on local professional boards (AACN and STTI). In her management of an Emergency Trauma Center (ETC) at a Level II trauma facility, she provided training and facilitated implementation in areas including: ESI triage system, sexual assault evidence collection, and annual competencies for RNs. Teresa served as a flight RN from 1996–2002, working in partnership with a critical-care-trained paramedic and physicians. These flights frequented rural hospitals and rural scene responses for transport of critically ill patients. As a full-time nursing faculty since 2005, Teresa has maintained clinical relevance and competency through direct-care nursing in critical-care areas, including interventional cath lab, ER, and Peri-Anesthesia Services. Her research activities have centered on rural nurses—specifically decision making in novice nurses and most recently leadership within rural critical-access hospitals.

The third content validity panel judge was Jane Scharff, who obtained her bachelor's degree from Montana State University in 1976 and her master's degrees from Montana State University in 1987. Jane went on to complete her post graduate work at

the University of Colorado in 1979, where she focused on adult-geriatric primary care at the University of Rochester (ABD). She is currently completing her PhD at the University of Missouri. Her contribution to this project is in statistics and leadership. These three panel judges performed the content validity testing of the instrument using a relevance scale described below.

A four-option rating scale was used (1 = not relevant; 2 = unable to assess relevance without item revision or item is in need of such revision that it would no longer be relevant; 3 = relevant, but needs minor alteration; and 4 = very relevant and succinct) for the content validity assessment (Lynn, 1986). Each item was rated by the judges on this four-point scale of relevance.

There were 79 items on the instrument that were assessed. Zero items were rated as "not relevant." Zero items were rated as "unable to assess relevance without item revision or item is in need of such revision that it would no longer be relevant." Five items were rated "relevant, but needs minor alteration," and 74 items were rated "very relevant and succinct." The five items that were judged as needing alteration were altered to reflect the suggested revisions from the content-validity judges. The table below reflects the original item and the item after revision. (See Table 3.)

Table 3: Items in Need of Revision

Original Item in Need of Revision	Item after Revision
Demonstrate a patient advocacy role for obtaining interventions for patient's needs.	Demonstrate a patient advocacy role for obtaining interventions for patients' needs such as discussing patient needs with the clinical team and advocating for decisions that would enhance patient care.
Communicate effectively with a patient's family regarding difficult issues such as poor diagnosis, need for life-threatening procedure, request for organ transplant, and impending death.	Communicate effectively with a patient's family regarding difficult issues such as poor diagnosis, need for life-threatening procedure, request of organs for transplant, and impending death.
Report to appropriate people in organizational structure.	Report to appropriate people (i.e., supervisor, case manager, physician) within organizational structure.
Connect to appropriate networks.	Connect to appropriate networks provided by organizational structure.
Assess situations, back up assessment with thorough rationales, and act without immediate supervision.	Assess situations, back up assessment with thorough rationales, and act without immediate supervision (i.e., collect antibiotic sensitivity report, obtain new order, and educate patient on antibiotic change related to sensitivity report).

The item CVI (I-CVI) was computed by taking the number of judges (3) that rated the items with a 3 or 4 and dividing this number by the number of judges. All 79 items on the instrument were given a rating of 3 or 4, thus the I-CVI is 1.00 for all 79 items. Thus, the answer to research question one ("Does the proposed nurse-leadership competency instrument have content validity?") was yes. The proposed nurse-leadership competency instrument has demonstrated initial content validity. Refer to Appendix E for details of the content validity review. (See Appendix E).

Description of the Sample

A sample of 128 registered nurses was selected through a convenience sampling process. Of the 128 registered nurses selected, 50 registered nurses responded, giving a 39.06% response rate for this survey. Out of the 50 respondents, one of the surveys was

deleted after data entry into SPSS (*SPSS*, 2013) was completed due to zero of the 79 items being completed. Forty-nine respondents resulted in a response rate of 38.28% for this survey.

Sample Descriptive Data

The following demographic and descriptive data were collected on the nurses that completed the survey: (1) age, (2) gender, (3) level of education, (4) years of experience in nursing practice, (5) current position, and (6) current employer by type. The data was separated and reported below.

Age

Subjects were asked to identify their age by selecting from seven numerical groupings (18–24, 25–34, 35–44, 45–54, 55–64, 65–74, and 75 or older). Subjects in the age range of 18–24 comprised 0% of the subjects. Subjects in the age range of 25–34 comprised 18% of the subjects. Subjects in the age range of 35–44 comprised 20% of the subjects. Subjects in the age range of 45–54 comprised 22% of the subjects. Subjects in the age range of 55–64 comprised 34% of the subjects and are highlighted below. Subjects in the age range of 65–74 comprised 4% of the subjects, and subjects in the age range of 75 or older comprised 1% of the subjects. All responding subjects identified their age. (See Table 4.)

Table 4: Age of Participants

Age	18–24	25–34	35–44	45–54	55–64	65–74	75 or older
n =	0	9	10	11	17	2	1
percent	0%	18%	20%	22%	34%	4%	1%

Gender

Subjects were asked to identify if they were male or female. Four percent (4%) of the total number of responding subjects were male. Ninety-two percent (92%) of the total number of responding subjects were female. All responding subjects identified their gender. (See Table 5.)

Table 5: Gender of Participants

Gender	Female	Male
n =	46	4
percent	92%	8%

Level of Education

Subjects were also asked to identify their level of education. The subjects were asked to select from the options of Diploma, Associate Degree, Bachelor Degree, Master's Degree, Doctorate Degree, Basic Nursing, or Other. The Other option gave the subject the ability to specify their level of education. The associate degree was identified as the level of nursing education by forty-six percent (46%) of the subjects. Twenty-four

percent (24%) of the responding subjects identified the baccalaureate degree as their level of education. Twenty percent (20%) of the responding subjects identified their level of education as a master's degree. Four percent (4%) of the responding subjects identified PhD in Nursing as their level of education. Responding subjects who did not report their level of education comprised 2% of the sample. (See Table 6.)

Table 6: Level of Education of Participants

Education	Diploma	Associate Degree	Baccalaureate Degree	Master Degree	Doctorate	Basic Nursing	Other	No response
n =	0	23	12	10	4	0	0	1
percent	0%	46%	24%	20%	8%	0%	0%	2%

Years of Experience in Nursing Practice

Subjects were asked to identify their total years of experience in nursing practice by typing in their numerical response. Responding subjects with 1–5 years of experience comprised 20% of the subjects. Responding subjects with 6–10 years of experience comprised 12% of the subjects. Responding subjects with 11–20 years of experience comprised 28% of the subjects. Responding subjects with 21–30 years of experience comprised 20% of the subjects, and responding subjects with 31 or more years of experience comprised 20% of the subjects. All responding subjects reported their years of experience. (See Table 7.)

Table 7: Years of Experience of Participants

Years of experience	1–5 years	6–10 years	11–20 years	21–30 years	30 or more years
n =	10	6	14	10	10
percent	20%	12%	28%	20%	20%

Current Position

Subjects were asked to identify their current position in the field of nursing by typing in their response. Responses were grouped into four categories: (1) registered nurse; no management, (2) registered nurse; management, (3) advanced-practice registered nurse, and (4) education/professor. Forty-eight percent (48%) of responding subjects identified their current position as a registered nurse with no management. Thirty-four percent (34%) of responding subjects identified their current position as a registered nurse with management. Two percent (2%) of responding subjects identified their current position as an advanced-practice registered nurse, and sixteen percent (16%) identified their current position as being in the education/professor category. All responding subjects reported their years of experience. (See Table 8.)

Table 8: Current Position of Participants

Current position	RN, no management	RN with management	APRN	Education
n =	24	17	1	8
percent	48%	34%	2%	16%

Current Employer by Type

Subjects were asked to identify their current employer by type by entering their response. Responding subjects' current employers were put into 9 categories: (1) hospital, (2) home health/hospice, (3) long-term care, (4) education/professor, (5) psychiatric hospital, (6) outpatient clinic, (7) school nurse, (8) provider, and (9) outpatient psychiatric clinic. Forty-four percent (44%) of responding subjects reported a hospital as their current employer. Eighteen percent (18%) of responding subjects reported a psychiatric hospital as their current employer. Fourteen percent (14%) of responding subjects reported education/professor as their current employer. Six percent (6%) of responding subjects reported psychiatric outpatient clinic as their current employer and six percent (6%) reported outpatient clinic. Four percent (4%) of responding subjects reported home health/hospice as their current employer and four percent (4%) reported long-term care. Two percent (2%) of responding subjects reported school nurse as their current employer and two percent (2%) reported providers. All responding subjects reported their type of employment. (See Table 9.)

Table 9: Type of Current Employer of Participants

Type of Employment	Hospital	Home health / Hospice	Long Term Care	Education/ Professor	Psychiatric Hospital	Outpatient Clinic	School Nurse	Provider	Outpatient Mental Health Clinic
n =	22	2	2	7	9	3	1	1	3
percent	44%	4%	4%	14%	19%	6%	2%	2%	6%

Analysis Regarding Research Question Two: Does the Proposed Instrument Show Validity Through Factor Analysis?

Data from Survey Monkey was entered into SPSS version 22 (*SPSS*, 2013) by this researcher. A confirmatory factor analysis was performed as a method to construct validation for this instrument. No limit was imposed on the number of factors that could emerge. A factor analysis was performed because it pulls apart complex relationships among items on a scale and can identify items that go together as unified concepts (Polit & Beck, 2012). "Factor analysis offers an objective, empirical method of clarifying the underlying dimensionality of a large set of measures" (Polit & Beck, 2012, p. 363). This was important for this research as the instrument has 79 Likert-type items. The factor analysis extracted one factor (one construct) having an eigenvalue of 52.65 and accounting for 66.65% of the total instrument variance. Orthogonal and rotated views demonstrated similar loading of all variables onto one factor. There were no clusters of items that could be determined as other factors.

After the factor analysis, a Cronbach's alpha was used for evaluating internal consistency. "Cronbach's alpha is an index of internal consistency to estimate the extent to which different subparts of an instrument (i.e., items) are reliably measuring the critical attribute" (Polit & Beck, 2012, p. 333). The Cronbach's alpha for this instrument was 0.992 meaning there are too many items that measure the same construct. Please see Appendix F for SPSS factor analysis and Cronbach's alpha.

Summary

A 79-item checklist was revised into a Likert-item scale to undergo reliability and validity testing. The instrument was revised and then subjected to the content-validity study. Survey Monkey was used to administer this instrument via a Likert-item-scale format for survey purposes. The survey was initially sent out to 128 registered nurses from two, rural, western states with 50 respondents resulting (one form of which was blank and thus disregarded). A factor analysis using SPSS version 22 (*SPSS*, 2013) was completed using the data from the remaining 49 respondents. The factor analysis determined this instrument had one factor and that the instrument assessed nursing leadership well (M. Slagel, personal communication, October 1, 2014).

CHAPTER FIVE

DISCUSSION

This chapter will discuss the results of the research findings. The findings include results addressing the limitations, implications for practice, nurse managers, nurse educators, and recommendations for future research. This chapter will also discuss the findings related to the reliability of the instrument and additional research that should be initiated.

Study Limitations

The sample size used for this study was based on a nonprobability sampling convenience method. Using G Power (G*Power, 2008) for the power analysis, the sample size required for this study was 64 respondents. Due to financial and time constraints, the researcher was not able to reach the 64 respondents. The study obtained 50 respondents to the survey; one being deleted for being blank, leaving 49 valid respondents. The size and convenience of the sample limit the generalizability of this study.

The response rate to the survey was 38.28 percent. One hundred twenty-eight (128) surveys were sent out to registered nurses in two western states. The survey consisted of 79 items to rate on a Likert scale. The response rate may have been low related to the length of the survey.

A small panel of three judges was used for content validity. There was only one round of content validation performed with these three judges. The first round of content validation with more expert judges could have changed the relevance of some of the items on the instrument. A second round of content validation with a smaller group of expert judges was not performed and limits this study. By doing a second round of content validation, data from the first round could be analyzed with a view toward evaluating the performance of the experts, not just the items on the scale (Polit & Beck, 2012).

Implications

The implications include the factor analysis, implications for practice, nurse managers, nurse educators, and recommendations for future research. These implications are all revolved around the importance of transforming healthcare and the recommendations of *The Future of Nursing* report (IOM, 2011).

The factor analysis determined that this instrument assesses nursing leadership very well. The tightness of the factor analysis could actually be interpreted as a sign that the instrument could be downsized, with items being removed, and still have a good tool to measure nursing leadership at this time (M. Slagel, personal communication, October 1, 2014). The Cronbach's alpha was 0.992, meaning that there were too many items and that item deletion could be performed.

The results of this study had some statistical significance; however, due to the sample size, the results could be misinterpreted. The factor analysis showed that there

was one common factor in this instrument: nursing leadership. Another study needs to be performed to revise this instrument to where it will continue to measure nursing leadership with fewer items on the scale. The instrument needs to be tested on a larger sample size so another factor analysis can be performed to ensure reliability. This researcher believes that, if the instrument had item reduction, it would increase the completion percentage from registered nurses due to time constraints.

Implications for Practice

The Future of Nursing report emphasizes the importance of transforming nursing practice to improve care. The IOM urges nurses to practice to the full extent of their education, training, and competencies along with other health professionals as to foster interprofessional collaboration. "The nursing profession's history includes many examples of the effect of nursing leadership on changes in systems and improvements in patient care" (IOM, 2011, p. 228). Nurses have been an enabling force for change in health care along many dimensions and, with every passing decade, nursing has become a more and more integral part of health care. Looking forward, it is impossible to imagine a future without nurses (IOM, 2011).

Implications for Nurse Managers

The research suggests (IOM, 2011):

> Although the public is not used to viewing nurses as leaders, and not all nurses begin their career with thoughts of becoming a leader, all nurses must be leaders in design, implementation, and evaluation of, as well as advocacy for, the ongoing reforms to the system that will be needed.

Nurses will need leadership skills and competencies to integrate and collaborate with physicians and other health care professionals, and having a core nurse-leadership competency instrument for nursing is a good start.

Implications for Nurse Educators

There is not a reliable and valid instrument that assesses nurse-leadership competency, although there is clearly a need for one. It is critical that nursing and healthcare leaders identify the skills that will be needed by nurse leaders, and begin now to create educational models and programs necessary to assure these competencies are present (Huston, 2008). Validating a revised instrument that measures such competencies and skills for nurse leadership can be the start for educational program changes that are needed now.

The IOM has recommended building a more educated work force for nursing and building future nurse leaders. Educating the future nurses for nurse leadership starts with the development of this instrument. This instrument, with further revision, can be an excellent tool that colleges and universities could use to re-align their leadership programs to prepare nurses for the future. Competency-based education is growing and beginning to be embraced by many nursing schools (IOM, 2011). “Defining an agreed-upon set of core competencies across” the nursing profession is ideal, and “it would help provide direction for standards across nursing education” (IOM, 2011, p. 200-201).

Healthcare is changing, and planning now for these future changes is necessary. There is an inadequate number of nurses that have the skills needed to lead in

increasingly complex healthcare environments, and the preparation must begin now (Huston, 2008). Leadership is only one aspect of what nurses will need to be adequately prepared for the complex healthcare systems, but it is an extremely important one. Core competencies for nursing leadership have been identified and they are valid.

Recommendations for Future Research

The nurse-leadership-competency instrument contains 79 items. Through the factor analysis, it was determined that this instrument assesses nurse leadership well and that the instrument could be downsized while still representing nurse leadership. The Cronbach's Alpha was 0.992 also suggestive of too many items that measured the same construct: nurse leadership. Another study needs to be performed so reduction of items can occur, but where the instrument continues to measure nursing leadership. Once item revision occurs, the instrument should "undertake a quantitative assessment of the items, which requires that they be administered to a fairly large development sample" Polit & Beck, 2012, p.360). Some have suggested that 300 is an adequate number to support a factor analysis while others suggest 10 per every item on the instrument; but either way, a large, dispersed sample size is essential to ensure stability of the instrument (Polit & Beck, 2012). A validation study should be performed on the revised instrument, comparing the original and new factor analyses. If the instrument continues to show validity and reliability, further steps are needed such as developing a manual. The manual should include the items; the underlying conceptual rationale; the process used to develop, refine, and evaluate items; instructions for using the instrument, including

scoring and interpretation; and information about the instrument's psychometric properties.

Conclusion

The purposes of this study were twofold. The first was to revise an instrument that assessed nurse-leadership competencies that could be used by all nurses. This proposed instrument was then tested for content validity. Secondly, this study psychometrically examined the instrument for validity and reliability through factor analysis. There were multiple literature sources that existed on the importance of nursing leadership and the benefits of leadership related to positive patient outcomes; however, there was not a valid and reliable tool that measured leadership-competency standards. Nurses will need to achieve higher levels of education and training to keep up with the future of nursing requirements. Having a valid and reliable tool to measure these leadership requirements is necessary. Competency has been identified as an essential aspect of high-quality, safe, and cost-effective health care; yet there was a lack of guidelines surrounding the competencies needed. A critical-care-nurse-leadership checklist was revised into a tool that could be used by all nurses. This tool, in its beginning stages of validity and reliability, looks promising to ensure nursing will have a valid and reliable instrument for nurses made by nurses to assess leadership competencies.

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APPENDICES

APPENDIX A

SEARCH RESULTS

Search Results

Nurse leadership competency checklist	0	0	0	0
Nurse competency checklist	0	0	0	0
Leadership competency checklist	1	0	0	0
Reliable nurse leadership competency checklist	0	0	0	0
Valid nurse leadership competency checklist	0	0	0	0
Reliable nurse competency Checklist	0	0	0	0
Valid nurse competency checklist	0	0	0	0
Reliable leadership competency checklist	0	0	0	0
Valid leadership competency Checklist	0	0	0	0
Nurse leadership competency	9	0	6	0
Leadership competency	27	3	27	0
Nurse leadership	90	13	26	13
Nurse Competency	48	0	15	2
Parse	7	0	7	2
Instrument	3336	1	63	2

APPENDIX B

INFORMATION LETTER

Title: Nursing Leadership Competency

Researcher: Sarah Beth Bandy-Hinton, RN, BSN

Information Letter

A. Introduction and Purpose

You are being asked to participate in a research study conducted by a graduate student from Montana State University, College of Nursing. The purpose of this study is to psychometrically examine a revised instrument assessing nurse-leadership competencies that could be used by all nurses. Currently, there is not such an instrument in place that has been tested for reliability and validity. This study will aide in the development of such an instrument for nursing leadership competencies.

B. Procedure

You will be asked to complete a questionnaire which has been distributed to you via email or postal mail by the researcher. The estimated completion time for this questionnaire is 45 minutes.

C. Benefits

There is no direct benefit to you for participation in this study. The results from this study will provide information that may be used to help develop current nurse-leadership competencies and nurse leaders of the future. This study will help in the development of a valid and reliable instrument to test nursing leadership competencies.

D. Risks

No risks or additional effects are likely to result from your participation in this study. In the unlikely event of harm arising from your participation, no reimbursement, compensation, or free medical/mental health treatment will be offered by Montana State University or the researcher.

E. Voluntary Participation/Withdrawal

Your participation is this study is voluntary and you are free to withdraw at any time. If you should choose to not participate in this study you will in no way be compromised. Since you are not asked to sign this survey or are not asked for any other identifier, after your information has been returned to the researcher it will no longer be identifiable.

F. Costs

There are no costs involved in your participation in this study.

G. Compensation

There is no compensation being offered for your participation in this study.

H. Confidentiality

All information collected from this survey will be kept confidential to the extent permitted by law. All identification in the research records will be identifiable only by the completed demographics section. The completed paper surveys will be stored in a locked filing cabinet only accessible to the researcher and the completed electronic surveys once completed and returned will be stored on a jump drive only accessible to the researcher. All results will be summarized and presented together; no individual study participant will be identifiable.

I. Questions

If you have any questions about the items on the questionnaire or the purpose of the study, please feel free to contact the researcher at your earliest convenience. Sarah Beth Bandy-Hinton can be reached at 208-420-3854 or at snchinton@msn.com. If you would like information regarding your rights as a research participant, please feel free to contact the chairman of Montana State University Internal Review Board, Mark Quinn at 406-994-6783.

J. Consent to participate in a research study

The return of your completed questionnaire is evidence of your willingness to participate in this study. You will not be asked to a sign a separate "willingness to participate" document because of participant anonymity. Please retain this information letter in case you have any questions or would like additional information about this study.

APPENDIX C

DEMOGRAPHICS QUESTIONNAIRE

Nursing Leadership Competency Demographics Questionnaire

Thank you for choosing to participate in this nursing leadership competency research project. This is an anonymous survey to evaluate nursing leadership.

Demographics:

Age: _____ Gender: Male / Female

Level of Education:

Associate degree RN

Diploma degree RN

Bachelor degree RN

Master degree RN

Doctorate Nursing Practice

Other _____

Years of experience in nursing practice:_____

APPENDIX D

GROSSMAN'S PERMISSION EMAIL

Hi Sarah,

Great you are working on this and hopefully it will be really helpful for many. Here are my responses to your ?s:

1. Why did you develop a checklist versus developing a reliable and valid instrument? Because I had no time and had developed an instrument and knew the amount of work and time that would be needed. I actually have 4 books with multiple editions plus work full time as a professor and one day/week as an APRN FNP in a clinic plus a life so I ran out of time.

2. Was there any further research that resulted from your work? Not from this checklist.

I was also wondering if you would be willing to review and give feedback on the survey when it is completed? I am soon going to be out of the country for my research and to do some teaching so I am not making any commitments at this time. Why not ask me closer to the time you will need my feedback and I will see if I have the time then.

Good luck with your work!

Best,

Sheila Grossman

Sheila Grossman, PhD, APRN, FNP-BC, FAAN

Professor & FNP Track Coordinator

School of Nursing

Fairfield University

North Benson Rd.

Fairfield, CT 06824-5195

Phone- 203 254 4000 x 2705

Fax – 203 254 4126

Sgrossman@fairfield.edu

APPENDIX E

CONTENT VALIDITY

Nursing Leadership Competencies. Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Communicate effectively with patients	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate a patient advocacy role for obtaining interventions for patients ' needs	**0.00%** 0	**0.00%** 0	**33.33%** 1	**66.67%** 2	**0.00%** 0	3	3.67
Communicate effectively with a patient's family regarding routine issues of hospitalization, referral, and discharge	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Communicate effectively with a patient's family regarding difficult issues such as poor diagnosis, need for life-threatening procedure, request of organs for transplant, and impending death	**0.00%** 0	**0.00%** 0	**33.33%** 1	**66.67%** 2	**0.00%** 0	3	3.67
Assertively articulates ideas to all members of team	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Set up appropriate consultations for patient needs	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Participate fully in all multidisciplinary rounds and conferences	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Identify and address conflict	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Assist individuals in conflict identify solutions	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Role model collaborative negotiations	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor revision	Very relevant and succinct	(no label)	Total	Average Rating
Knowledgeable of organizational structure	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Report to appropriate people in organizational structure	**0.00%** 0	**0.00%** 0	**33.33%** 1	**66.67%** 2	**0.00%** 0	3	3.67
Demonstrate political awareness of authority and power	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Connect to appropriate networks	**0.00%** 0	**0.00%** 0	**33.33%** 1	**66.67%** 2	**0.00%** 0	3	3.67
Assess situations, back up assessment with thorough rationales, and act without immediate supervision	**0.00%** 0	**0.00%** 0	**33.33%** 1	**66.67%** 2	**0.00%** 0	3	3.67
Demonstrate collaborative practice with all members of health care team	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Participate daily, and when appropriate, with multidisciplinary rounds	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate appropriate case management or work collaboratively with designated case manager	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Demonstrate the use of the five stages of nursing process autonomously	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Able to prioritize appropriately	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate high critical thinking ability	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate the use of the nursing model of my organization or consistently use one nursing model	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Explain rationale for my clinical decisions	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate creative planning in all aspects of care delivery	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Knowledgeable of organizational structure	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Reports to appropriate people in organizational structure	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrates political awareness of authority and power	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Follow evidence-based practice	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Develops new protocols displaying evidence based practice	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Audit my own and my peer's performance	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Participate in implementing new protocols	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Work within state's definition of RN role	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate use of Policy and Procedure Manuals	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Use incident report appropriately	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Aware of need to notify physician and Supervisor	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Role model ethical actions	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate knowledge of Patient Rights	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Demonstrate authority (position power) of staff nurse position	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Use information power appropriately	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Use expert power appropriately	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Use personal power appropriately	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Use connection power appropriately	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Use perceived power if individual has developed reputation	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate confidence with decision making	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Display appropriate attire and demeanor	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Hold membership in at least one professional organization	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Have goals to be promoted and certified	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Participate fully in unit, departmental, institutional committees	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Knowledgeable and able to apply care pattern fit for situation	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Flexible to presenting situation, capable of making change(s) midstream with patient assignment	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Follow appropriate communication and delegation path of the care delivery system	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Follow a safe nurse-patient and ancillary worker's assignment	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate awareness of unsafe condition and notify my supervisor for assistance when appropriate	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate assessment of patient acuity	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00
Demonstrate ability to manage stressful situation such as code, fire drill, or family/patient/visitor violence	**0.00%** 0	**0.00%** 0	**0.00%** 0	**100.00%** 3	**0.00%** 0	3	4.00

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Not relevant	Unable to assess relevance	Relevant but needs minor alteration	Very relevant and succinct	(no label)	Total	Average Rating
Make decisions	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Delegate appropriately	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Create innovative solutions for conflict or change	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Take risks	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Accept constructive feedback and make changes appropriately	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Assume leadership when appropriate	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Give honest feedback in a timely fashion	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Demonstrate high self-esteem or self-worth	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Enthusiastic and able to influence other's work	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Role model to others, able to precept and coach other staff	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Act as a mentor or preceptor for students and new staff	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Independent with beliefs and not influenced easily by other's opinions	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Challenge others appropriately	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Accept responsibility when appropriate	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Show trustworthiness and integrity	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Demonstrate respect for all	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Articulate my goals	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Demonstrate awareness of group stages	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Disrupt groupthink attitude when I see it	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Demonstrate ability to lead group	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Actively participate in the accomplishment of group goals	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Display awareness of cultural differences between staff	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Use knowledge appropriate for managing issues between culturally diverse individuals	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00
Identify additional activities depending on my goals	0.00% 0	0.00% 0	0.00% 0	100.00% 3	0.00% 0	3	4.00

APPENDIX F

FACTOR ANALYSIS AND ALPHA

Communalities

	Initial	Extraction
VAR00001	1.000	.729
VAR00002	1.000	.773
VAR00003	1.000	.697
VAR00004	1.000	.621
VAR00005	1.000	.675
VAR00006	1.000	.660
VAR00007	1.000	.823
VAR00008	1.000	.792
VAR00009	1.000	.823
VAR00010	1.000	.688
VAR00011	1.000	.789
VAR00012	1.000	.836
VAR00013	1.000	.807
VAR00014	1.000	.653
VAR00015	1.000	.590
VAR00016	1.000	.691
VAR00017	1.000	.882
VAR00018	1.000	.842
VAR00019	1.000	.722
VAR00020	1.000	.913
VAR00021	1.000	.916
VAR00022	1.000	.749
VAR00023	1.000	.857
VAR00024	1.000	.800
VAR00025	1.000	.838
VAR00026	1.000	.912
VAR00027	1.000	.828
VAR00028	1.000	.888
VAR00029	1.000	.436
VAR00030	1.000	.522
VAR00031	1.000	.637
VAR00032	1.000	.891
VAR00033	1.000	.747

VAR00034	1.000	.830
VAR00035	1.000	.897
VAR00036	1.000	.863
VAR00037	1.000	.918
VAR00038	1.000	.597
VAR00039	1.000	.936
VAR00040	1.000	.810
VAR00041	1.000	.901
VAR00042	1.000	.872
VAR00043	1.000	.782
VAR00044	1.000	.871
VAR00045	1.000	.868
VAR00046	1.000	.529
VAR00047	1.000	.658
VAR00048	1.000	.666
VAR00049	1.000	.870
VAR00050	1.000	.841
VAR00051	1.000	.846
VAR00052	1.000	.908
VAR00053	1.000	.831
VAR00054	1.000	.837
VAR00055	1.000	.867
VAR00056	1.000	.791
VAR00057	1.000	.747
VAR00058	1.000	.811
VAR00059	1.000	.333
VAR00060	1.000	.646
VAR00061	1.000	.913
VAR00062	1.000	.881
VAR00063	1.000	.897
VAR00064	1.000	.842
VAR00065	1.000	.903
VAR00066	1.000	.699
VAR00067	1.000	.820
VAR00068	1.000	.916
VAR00069	1.000	.917
VAR00070	1.000	.907
VAR00071	1.000	.856

VAR00072	1.000	.872
VAR00073	1.000	.706
VAR00074	1.000	.710
VAR00075	1.000	.825
VAR00076	1.000	.883
VAR00077	1.000	.812
VAR00078	1.000	.911
VAR00079	1.000	.878

Extraction Method: Principal Component Analysis.

Total Variance Explained

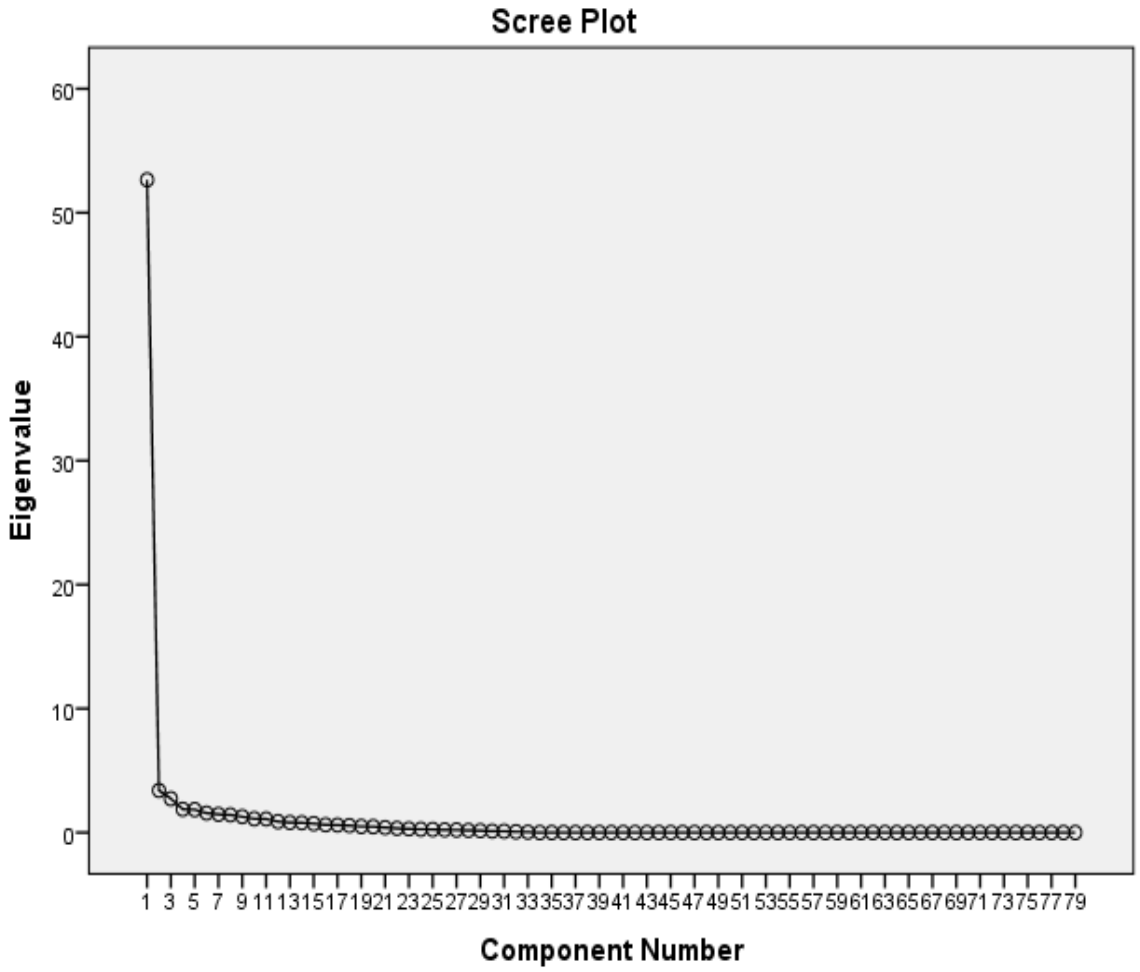
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	52.652	66.649	66.649	52.652	66.649	66.649	23.738	30.049	30.049
2	3.394	4.296	70.945	3.394	4.296	70.945	16.775	21.234	51.283
3	2.728	3.453	74.399	2.728	3.453	74.399	9.018	11.415	62.698
4	1.879	2.379	76.778	1.879	2.379	76.778	8.611	10.900	73.598
5	1.849	2.340	79.118	1.849	2.340	79.118	4.361	5.520	79.118
6	1.566	1.983	81.101						
7	1.471	1.862	82.963						
8	1.427	1.807	84.770						
9	1.275	1.614	86.384						
10	1.109	1.404	87.788						
11	1.092	1.382	89.170						
12	.879	1.113	90.283						
13	.813	1.030	91.313						
14	.795	1.006	92.319						
15	.719	.910	93.228						
16	.621	.787	94.015						
17	.599	.759	94.774						
18	.564	.714	95.488						
19	.495	.626	96.114						
20	.469	.593	96.707						
21	.400	.506	97.213						
22	.336	.425	97.638						
23	.292	.369	98.008						
24	.268	.339	98.346						
25	.248	.314	98.660						
26	.214	.271	98.931						
27	.208	.263	99.193						
28	.171	.217	99.410						
29	.151	.191	99.601						
30	.110	.139	99.740						
31	.103	.131	99.871						
32	.065	.082	99.953						

33	.037	.047	100.000							
34	1.744E-15	2.207E-15	100.000							
35	1.377E-15	1.743E-15	100.000							
36	1.200E-15	1.519E-15	100.000							
37	8.985E-16	1.137E-15	100.000							
38	8.545E-16	1.082E-15	100.000							
39	7.551E-16	9.558E-16	100.000							
40	7.145E-16	9.044E-16	100.000							
41	6.531E-16	8.267E-16	100.000							
42	6.396E-16	8.096E-16	100.000							
43	5.532E-16	7.003E-16	100.000							
44	4.665E-16	5.905E-16	100.000							
45	4.399E-16	5.569E-16	100.000							
46	4.173E-16	5.283E-16	100.000							
47	3.582E-16	4.534E-16	100.000							
48	3.464E-16	4.384E-16	100.000							
49	2.331E-16	2.951E-16	100.000							
50	1.867E-16	2.364E-16	100.000							
51	1.357E-16	1.717E-16	100.000							

52	1.160E-16	1.468E-16	100.000						
53	6.924E-17	8.764E-17	100.000						
54	1.011E-17	1.280E-17	100.000						
55	-5.811E-18	-7.355E-18	100.000						
56	-3.681E-17	-4.660E-17	100.000						
57	-5.832E-17	-7.383E-17	100.000						
58	-8.038E-17	-1.017E-16	100.000						
59	-1.001E-16	-1.266E-16	100.000						
60	-1.251E-16	-1.584E-16	100.000						
61	-1.832E-16	-2.318E-16	100.000						
62	-2.291E-16	-2.899E-16	100.000						
63	-2.766E-16	-3.502E-16	100.000						
64	-3.383E-16	-4.283E-16	100.000						
65	-3.666E-16	-4.640E-16	100.000						
66	-4.000E-16	-5.063E-16	100.000						
67	-4.527E-16	-5.730E-16	100.000						
68	-4.694E-16	-5.942E-16	100.000						
69	-4.969E-16	-6.289E-16	100.000						
70	-6.236E-16	-7.893E-16	100.000						

71	-6.558E-16	-8.302E-16	100.000						
72	-7.383E-16	-9.345E-16	100.000						
73	-7.736E-16	-9.792E-16	100.000						
74	-8.729E-16	-1.105E-15	100.000						
75	-8.982E-16	-1.137E-15	100.000						
76	-1.040E-15	-1.316E-15	100.000						
77	-1.092E-15	-1.382E-15	100.000						
78	-1.963E-15	-2.485E-15	100.000						
79	-2.068E-15	-2.618E-15	100.000						

Extraction Method: Principal Component Analysis.


Scree Plot
Eigenvalue
60
50
40
30
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10
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1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79
Component Number

	Component				
	1	2	3	4	5
VAR00069	.954				
VAR00070	.948				
VAR00021	.942				
VAR00052	.939				
VAR00039	.936				
VAR00020	.930				
VAR00078	.926				
VAR00035	.924				
VAR00061	.924				
VAR00037	.922				
VAR00041	.922				
VAR00049	.921				
VAR00026	.919				
VAR00071	.915				
VAR00036	.913				
VAR00065	.907				
VAR00044	.906				
VAR00050	.902				
VAR00032	.898				
VAR00063	.897				
VAR00042	.896				
VAR00051	.895				
VAR00077	.895				
VAR00055	.893				
VAR00067	.891				
VAR00079	.889				
VAR00064	.885				
VAR00034	.874				
VAR00045	.874				
VAR00054	.874				
VAR00012	.870				
VAR00025	.869				
VAR00053	.866				
VAR00056	.864				

VAR00023	.862				
VAR00002	.854				
VAR00075	.852				
VAR00076	.852	.354			
VAR00033	.848				
VAR00011	.847				
VAR00019	.845				
VAR00028	.843	-.362			
VAR00062	.841		-.325		
VAR00072	.839		-.373		
VAR00068	.839	.308			
VAR00027	.826				
VAR00057	.826				
VAR00040	.824				
VAR00013	.823				.314
VAR00066	.816				
VAR00058	.812				
VAR00005	.802				
VAR00016	.801				
VAR00024	.794				
VAR00074	.790				
VAR00008	.789			.340	
VAR00073	.788				
VAR00060	.785				
VAR00009	.784		-.319		
VAR00001	.781				
VAR00043	.760	-.308	-.309		
VAR00010	.755				
VAR00003	.735				-.382
VAR00022	.680	-.388		.369	
VAR00018	.670	.448	.390		
VAR00047	.664			-.326	
VAR00017	.651	.436	.511		
VAR00015	.649		.380		
VAR00014	.636				.384
VAR00030	.616				
VAR00006	.614		.313		
VAR00048	.601	.504			

VAR00029	.590				
VAR00031	.584	.409			.331
VAR00038	.528	-.510			
VAR00007	.505	.475	.536		
VAR00046	.479			-.515	
VAR00004	.446			.433	-.471
VAR00059	.384				.396

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix

	Component				
	1	2	3	4	5
VAR00028	.848	.356			
VAR00022	.786	.301			
VAR00039	.781	.416			
VAR00024	.767	.321			
VAR00042	.766	.383			
VAR00038	.765				
VAR00041	.757	.370			
VAR00045	.738			.398	
VAR00023	.734	.415		.313	
VAR00040	.732		.328	.361	
VAR00021	.720	.413		.363	
VAR00011	.712		.341		
VAR00012	.697		.420		
VAR00051	.696	.322		.385	
VAR00035	.681	.346	.310	.443	
VAR00032	.679		.302	.445	
VAR00052	.675	.392	.316	.421	
VAR00027	.674	.372			.446
VAR00070	.667	.457	.304	.364	
VAR00053	.658	.344		.455	
VAR00050	.658	.470		.313	
VAR00020	.657	.387	.342	.458	
VAR00043	.654	.460			
VAR00033	.654	.355		.316	

VAR00037	.654	.333		.522	
VAR00049	.652	.417	.389		
VAR00056	.642	.429		.325	
VAR00067	.624	.458		.312	
VAR00069	.621	.549		.343	
VAR00026	.618	.543			.373
VAR00025	.617	.337		.456	.337
VAR00044	.614	.555			.321
VAR00054	.609		.450	.416	
VAR00078	.600	.598		.398	
VAR00036	.597	.485		.448	
VAR00071	.588	.534		.386	
VAR00002	.585	.477	.340		
VAR00016	.579	.388	.386		
VAR00019	.567	.447		.323	
VAR00034	.561	.329	.342	.523	
VAR00055	.561	.395	.498	.383	
VAR00013	.558		.419		.450
VAR00015	.543		.488		
VAR00001	.504		.429	.492	
VAR00066	.483	.458		.402	
VAR00029	.397	.374			
VAR00068		.813			
VAR00009	.319	.789			
VAR00072	.372	.760		.338	
VAR00058	.313	.725			
VAR00076		.713	.380	.353	
VAR00075	.377	.704		.310	
VAR00010	.365	.682			
VAR00008	.491	.660	.335		
VAR00062	.346	.646		.330	.460
VAR00074	.314	.637		.306	
VAR00063	.417	.636		.439	.304
VAR00079	.376	.618	.448		
VAR00065	.552	.591		.381	.308
VAR00061	.409	.579	.407	.424	
VAR00073	.340	.572		.423	
VAR00004	.307	.571			

VAR00057	.398	.567		.438	
VAR00060	.432	.536		.340	
VAR00064	.504	.531		.319	.400
VAR00005	.390	.530	.346		
VAR00077	.503	.517	.346	.379	
VAR00003	.450	.486	.306	.348	
VAR00007			.862		
VAR00017			.850		
VAR00018			.783		.302
VAR00006	.301		.629		.357
VAR00048		.394	.611		.320
VAR00014	.402		.495		.471
VAR00046				.657	
VAR00047		.501		.568	
VAR00030		.306	.354	.507	
VAR00059					.496
VAR00031		.366	.487		.491

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 11 iterations.

Component Transformation Matrix

Component	1	2	3	4	5
1	.644	.531	.349	.364	.220
2	-.708	.394	.571	.058	.117
3	.208	-.617	.729	-.041	-.206
4	.199	.263	.140	-.929	.097
5	-.037	-.335	-.008	-.005	.941

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Case Processing Summary

		N	%
Cases	Valid	35	71.4
	Excluded[a]	14	28.6
	Total	49	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.992	79

APPENDIX G

NURSE-LEADERSHIP INSTRUMENT

Please evaluate the following statements and select the option that best answers the question: to what extent do I:

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Communicate effectively with patients	**29.55%** 13	**61.36%** 27	**0.00%** 0	**9.09%** 4	**0.00%** 0	44	4.11
Demonstrate a patient advocacy role for obtaining interventions for patients' needs such as discussing patient needs with the clinical team and advocating for decisions that would enhance patient care	**58.14%** 25	**30.23%** 13	**4.65%** 2	**6.98%** 3	**0.00%** 0	43	4.40
Communicate effectively with a patient's family regarding routine issues of hospitalization, referral, and discharge	**31.82%** 14	**45.45%** 20	**9.09%** 4	**11.36%** 5	**2.27%** 1	44	3.93
Communicate effectively with a patient's family regarding difficult issues such as poor diagnosis, need for life-threatening procedure, request of organs for transplant, and impending death	**25.00%** 11	**27.27%** 12	**27.27%** 12	**11.36%** 5	**9.09%** 4	44	3.48
Assertively articulates ideas to all members of team	**40.91%** 18	**40.91%** 18	**9.09%** 4	**9.09%** 4	**0.00%** 0	44	4.14
Set up appropriate consultations for patient needs	**34.09%** 15	**34.09%** 15	**13.64%** 6	**11.36%** 5	**6.82%** 3	44	3.77
Participate fully in all multidisciplinary rounds and conferences	**29.55%** 13	**38.64%** 17	**15.91%** 7	**9.09%** 4	**6.82%** 3	44	3.75
Identify and address conflict	**25.58%** 11	**53.49%** 23	**13.95%** 6	**6.98%** 3	**0.00%** 0	43	3.98
Assist individuals in conflict identify solutions	**27.27%** 12	**52.27%** 23	**13.64%** 6	**6.82%** 3	**0.00%** 0	44	4.00
Role model collaborative negotiations	**25.58%** 11	**51.16%** 22	**16.28%** 7	**6.98%** 3	**0.00%** 0	43	3.95

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Knowledgeable of organizational structure	**48.84%** 21	**41.86%** 18	**2.33%** 1	**6.98%** 3	**0.00%** 0	43	4.33
Report to appropriate people (i.e., supervisor, case manager, physician) within organizational structure	**69.77%** 30	**23.26%** 10	**2.33%** 1	**4.65%** 2	**0.00%** 0	43	4.58
Demonstrate political awareness of authority and power	**48.84%** 21	**39.53%** 17	**4.65%** 2	**6.98%** 3	**0.00%** 0	43	4.30
Connect to appropriate networks provided by organizational structure	**37.21%** 16	**44.19%** 19	**13.95%** 6	**4.65%** 2	**0.00%** 0	43	4.14
Assess situations, back up assessment with thorough rationales, and act without immediate supervision (i.e., collect antibiotic sensitivity report, obtain new order, and educate patient on antibiotic change related to sensitivity report)	**34.88%** 15	**44.19%** 19	**13.95%** 6	**6.98%** 3	**0.00%** 0	43	4.07

Demonstrate collaborative practice with all members of health care team	**46.51%** 20	**41.86%** 18	**4.65%** 2	**6.98%** 3	**0.00%** 0	43	4.28
Participate daily, and when appropriate, with multidisciplinary rounds	**38.10%** 16	**38.10%** 16	**7.14%** 3	**14.29%** 6	**2.38%** 1	42	3.95
Demonstrate appropriate case management or work collaboratively with designated case manager	**34.88%** 15	**44.19%** 19	**4.65%** 2	**13.95%** 6	**2.33%** 1	43	3.95

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Demonstrate the use of the five stages of nursing process autonomously	**50.00%** 21	**35.71%** 15	**4.76%** 2	**9.52%** 4	**0.00%** 0	42	4.26
Able to prioritize appropriately	**52.38%** 22	**40.48%** 17	**0.00%** 0	**7.14%** 3	**0.00%** 0	42	4.38
Demonstrate high critical thinking ability	**57.14%** 24	**35.71%** 15	**0.00%** 0	**7.14%** 3	**0.00%** 0	42	4.43
Demonstrate the use of the nursing model of my organization or consistently use one nursing model	**33.33%** 14	**52.38%** 22	**2.38%** 1	**9.52%** 4	**2.38%** 1	42	4.05
Explain rationale for my clinical decisions	**45.24%** 19	**42.86%** 18	**2.38%** 1	**9.52%** 4	**0.00%** 0	42	4.24
Demonstrate creative planning in all aspects of care delivery	**32.50%** 13	**47.50%** 19	**12.50%** 5	**7.50%** 3	**0.00%** 0	40	4.05

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Knowledgeable of organizational structure	**45.24%** 19	**45.24%** 19	**2.38%** 1	**7.14%** 3	**0.00%** 0	42	4.29
Reports to appropriate people in organizational structure	**56.10%** 23	**34.15%** 14	**2.44%** 1	**7.32%** 3	**0.00%** 0	41	4.39
Demonstrates political awareness of authority and power	**54.76%** 23	**28.57%** 12	**9.52%** 4	**7.14%** 3	**0.00%** 0	42	4.31
Follow evidence-based practice	**42.86%** 18	**47.62%** 20	**2.38%** 1	**7.14%** 3	**0.00%** 0	42	4.26
Develops new protocols displaying evidence-based practice	**14.29%** 6	**40.48%** 17	**23.81%** 10	**21.43%** 9	**0.00%** 0	42	3.48
Audit my own and my peer's performance	**16.67%** 7	**52.38%** 22	**21.43%** 9	**9.52%** 4	**0.00%** 0	42	3.76
Participate in implementing new protocols	**16.67%** 7	**45.24%** 19	**21.43%** 9	**14.29%** 6	**2.38%** 1	42	3.60

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Work within state's definition of RN role	**85.71%** 36	**4.76%** 2	**2.38%** 1	**7.14%** 3	**0.00%** 0	42	4.69
Demonstrate use of Policy and Procedure Manuals	**64.29%** 27	**26.19%** 11	**2.38%** 1	**7.14%** 3	**0.00%** 0	42	4.48
Use incident report appropriately	**66.67%** 28	**26.19%** 11	**0.00%** 0	**7.14%** 3	**0.00%** 0	42	4.52
Aware of need to notify physician and Supervisor	**85.71%** 36	**7.14%** 3	**0.00%** 0	**7.14%** 3	**0.00%** 0	42	4.71
Role model ethical actions	**73.81%** 31	**19.05%** 8	**0.00%** 0	**7.14%** 3	**0.00%** 0	42	4.60
Demonstrate knowledge of Patient Rights	**78.05%** 32	**14.63%** 6	**0.00%** 0	**7.32%** 3	**0.00%** 0	41	4.63

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Demonstrate authority (position power) of staff nurse position	**41.46%** 17	**31.71%** 13	**14.63%** 6	**7.32%** 3	**4.88%** 2	41	3.98
Use information power appropriately	**53.66%** 22	**39.02%** 16	**0.00%** 0	**7.32%** 3	**0.00%** 0	41	4.39
Use expert power appropriately	**43.90%** 18	**43.90%** 18	**4.88%** 2	**7.32%** 3	**0.00%** 0	41	4.24
Use personal power appropriately	**53.66%** 22	**36.59%** 15	**0.00%** 0	**9.76%** 4	**0.00%** 0	41	4.34
Use connection power appropriately	**43.90%** 18	**46.34%** 19	**2.44%** 1	**7.32%** 3	**0.00%** 0	41	4.27
Use perceived power if individual has developed reputation	**29.27%** 12	**53.66%** 22	**4.88%** 2	**12.20%** 5	**0.00%** 0	41	4.00
Demonstrate confidence with decision making	**43.90%** 18	**43.90%** 18	**4.88%** 2	**7.32%** 3	**0.00%** 0	41	4.24
Display appropriate attire and demeanor	**73.17%** 30	**19.51%** 8	**0.00%** 0	**7.32%** 3	**0.00%** 0	41	4.59
Hold membership in at least one professional organization	**53.66%** 22	**17.07%** 7	**7.32%** 3	**17.07%** 7	**4.88%** 2	41	3.98
Have goals to be promoted and certified	**60.98%** 25	**19.51%** 8	**7.32%** 3	**12.20%** 5	**0.00%** 0	41	4.29
Participate fully in unit, departmental, institutional committees	**39.02%** 16	**24.39%** 10	**19.51%** 8	**17.07%** 7	**0.00%** 0	41	3.85

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Knowledgeable and able to apply care pattern fit for situation	**51.22%** 21	**39.02%** 16	**0.00%** 0	**9.76%** 4	**0.00%** 0	41	4.32
Flexible to presenting situation, capable of making change(s) midstream with patient assignment	**56.10%** 23	**31.71%** 13	**2.44%** 1	**9.76%** 4	**0.00%** 0	41	4.34
Follow appropriate communication and delegation path of the care delivery system	**53.66%** 22	**36.59%** 15	**0.00%** 0	**9.76%** 4	**0.00%** 0	41	4.34
Follow a safe nurse-patient and ancillary worker's assignment	**56.10%** 23	**34.15%** 14	**0.00%** 0	**9.76%** 4	**0.00%** 0	41	4.37
Demonstrate awareness of unsafe condition and notify my supervisor for assistance when appropriate	**58.54%** 24	**29.27%** 12	**2.44%** 1	**9.76%** 4	**0.00%** 0	41	4.37
Demonstrate assessment of patient acuity	**51.22%** 21	**39.02%** 16	**0.00%** 0	**9.76%** 4	**0.00%** 0	41	4.32
Demonstrate ability to manage stressful situation such as code, fire drill, or family/patient/visitor violence	**53.66%** 22	**36.59%** 15	**0.00%** 0	**9.76%** 4	**0.00%** 0	41	4.34

	Always	Frequently	Sometimes	Rarely	Never	Total	Average Rating
Make decisions	**60.00%** 24	**30.00%** 12	**2.50%** 1	**7.50%** 3	**0.00%** 0	40	4.42
Delegate appropriately	**40.00%** 16	**42.50%** 17	**7.50%** 3	**10.00%** 4	**0.00%** 0	40	4.13
Create innovative solutions for conflict or change	**37.50%** 15	**35.00%** 14	**20.00%** 8	**7.50%** 3	**0.00%** 0	40	4.03
Take risks	**10.00%** 4	**22.50%** 9	**47.50%** 19	**15.00%** 6	**5.00%** 2	40	3.17
Accept constructive feedback and make changes appropriately	**32.50%** 13	**55.00%** 22	**5.00%** 2	**7.50%** 3	**0.00%** 0	40	4.13
Assume leadership when appropriate	**47.50%** 19	**42.50%** 17	**2.50%** 1	**7.50%** 3	**0.00%** 0	40	4.30
Give honest feedback in a timely fashion	**37.50%** 15	**45.00%** 18	**10.00%** 4	**7.50%** 3	**0.00%** 0	40	4.13
Demonstrate high self-esteem or self-worth	**42.50%** 17	**47.50%** 19	**2.50%** 1	**7.50%** 3	**0.00%** 0	40	4.25
Enthusiastic and able to influence other's work	**40.00%** 16	**47.50%** 19	**5.00%** 2	**7.50%** 3	**0.00%** 0	40	4.20
Role model to others, able to precept and coach other staff	**45.00%** 18	**42.50%** 17	**5.00%** 2	**7.50%** 3	**0.00%** 0	40	4.25
Act as a mentor or preceptor for students and new staff	**47.50%** 19	**30.00%** 12	**15.00%** 6	**7.50%** 3	**0.00%** 0	40	4.17

Independent with beliefs and not influenced easily by other's opinions	**45.00%** 18	**47.50%** 19	**0.00%** 0	**7.50%** 3	**0.00%** 0	40	4.30
Challenge others appropriately	**25.00%** 10	**50.00%** 20	**17.50%** 7	**7.50%** 3	**0.00%** 0	40	3.92
Accept responsibility when appropriate	**65.00%** 26	**27.50%** 11	**0.00%** 0	**7.50%** 3	**0.00%** 0	40	4.50
Show trustworthiness and integrity	**72.50%** 29	**20.00%** 8	**0.00%** 0	**7.50%** 3	**0.00%** 0	40	4.58
Demonstrate respect for all	**75.00%** 30	**17.50%** 7	**0.00%** 0	**7.50%** 3	**0.00%** 0	40	4.60
Articulate my goals	**42.50%** 17	**45.00%** 18	**5.00%** 2	**7.50%** 3	**0.00%** 0	40	4.22
Demonstrate awareness of group stages	**27.50%** 11	**55.00%** 22	**7.50%** 3	**10.00%** 4	**0.00%** 0	40	4.00
Disrupt groupthink attitude when I see it	**15.00%** 6	**50.00%** 20	**25.00%** 10	**10.00%** 4	**0.00%** 0	40	3.70
Demonstrate ability to lead group	**32.50%** 13	**47.50%** 19	**12.50%** 5	**7.50%** 3	**0.00%** 0	40	4.05
Actively participate in the accomplishment of group goals	**35.00%** 14	**45.00%** 18	**12.50%** 5	**7.50%** 3	**0.00%** 0	40	4.08
Display awareness of cultural differences between staff	**43.59%** 17	**46.15%** 18	**2.56%** 1	**7.69%** 3	**0.00%** 0	39	4.26
Use knowledge appropriate for managing issues between culturally diverse individuals	**40.00%** 16	**50.00%** 20	**2.50%** 1	**7.50%** 3	**0.00%** 0	40	4.22
Identify additional activities depending on my goals	**30.00%** 12	**52.50%** 21	**10.00%** 4	**7.50%** 3	**0.00%** 0	40	4.05