NEW GRADUATE NURSE TRANSITION INTO PRACTICE:

PSYCHOMETRIC TESTING OF THE SIMS FACTOR H ASSESSMENT SCALE

Caroline E. Sims

Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
Doctor of Philosophy
in the School of Nursing,
Indiana University

November 2012

Accepted by the Faculty of Indiana University, in partial
fulfillment of the requirements for the degree of Doctor of Philosophy.

Patricia R. Ebright, PhD, RN, FAAN, Chair

Tamilyn Bakas, PhD, RN, FAHA, FAAN

Doctoral Committee

Pamela M. Ironside, PhD, ANEF, FAAN

June 21, 2012

Christine M. Pacini, PhD, R.N.

ACKNOWLEDGEMENTS

It is only through the support of many others that I have been able to complete this final work of my doctoral program, and it is with heartfelt appreciation that I wish to acknowledge their contributions. First I would like to recognize my dissertation committee for their guidance and support throughout this process. My chairperson, Dr. Patricia Ebright, has consistently offered her expertise, encouragement, and support. Your knowledge and experience in the clinical setting was invaluable as you helped guide me through this process. Talking with you always left me feeling engaged and excited about the work to be done. This was such a blessing.

Dr. Tamilyn Bakas not only was an excellent resource for complex data analysis, but also taught me to actually enjoy theory. You not only have expert knowledge related to measurement, but also have a great talent in your ability to teach these complicated concepts to a novice. Dr. Pamela Ironside brought a great perspective. Your expert knowledge and skills related to nursing education helped me broaden my thinking related to my focus. I have learned so much from you. Dr. Christine Pacini has also been an excellent support. Your expert knowledge and experience in staff development in an acute care setting helped not only with the work of my dissertation, but also with understanding how this education will prepare me to better support staff development in my work setting.

I also want to acknowledge the support I have received from leaders and mentors at Columbus Regional Hospital, Columbus, Indiana. Although she is no longer at Columbus Regional, it was during her time as our CNO that Cherona Hajewski RN, MSN, offered me the opportunity to pursue my PhD with the support of the organization.

You have mentored me as a leader and always encouraged me to stretch farther. These things I will never forget. Doug Leonard, our former CEO and now President of the Indiana Hospital Association was also instrumental in his support of my work. You have always been a role model of the transformational leader. It has been a pleasure knowing and working with you. I also want to thank Jim Bickle, our current CEO for his support. I realize that from the view of the CEO, this work may have seemed to be taking a lot of my time and focus, but you were always supportive and encouraging.

Last but certainly not least I want to acknowledge my friends and family. Thank you to the Staff Development Coordinators at Columbus Regional Hospital. Your patience, support, encouragement, and help has been appreciated far more than you know. I was hesitant to take on a new role while completing this work, but working with high performers makes it all possible. Ruth Galloway and Kathy Wallace, thank you for your amazing support through all of this. You always told me I could do this even when I really was not so sure. Your friendship and encouragement are such a great support. To Carolyn O'Neal and Julie Stamper, thanks for cheering me on every time I headed out to recruit. It was great to have friends who really cheered me on. I was also so fortunate to have a "coach". Dr. Connie Rowles was there to push me and keep me on focus. Our lunches gave me a place to ask questions that I otherwise did not know who to ask. "So what will you have done next time we have lunch?" kept me accountable to keep the work moving. I always knew, though that lunch also meant laughter and encouragement.

No one is more affected by the demands of my education than my family, and they have been a tremendous source of support and strength. To my mom, what can I say? Not only did you raise me to believe that I can do anything, but you also supported

me every step of the way to make sure I could. Thanks for all the times you stepped in to take care of Gerrison and Maredeth or took them to practices, games, and other activities. I could always count on you cheering me on just like you have for all of my life. Gerrison and Maredeth, it has been a long road for you as well. You have both been supportive and tolerant of how life at home had to be adjusted to meet my time away for recruiting students and studying. You two are always my inspiration in all I do. Last but not least my husband, Scott, who was cheerleader backup to my "mom" duties. You tolerated my stress and distraction for all these years; now we can focus on the future without wondering if I will be done with school by then.

They say it takes a village to raise a child. I think the same is true of earning a PhD in nursing. I have been blessed to have such a village.

ABSTRACT

Caroline E. Sims

New Graduate Nurse Transition into Practice:

Psychometric Testing of the Sims Factor H Assessment Scale

Factor H is a newly identified phenomenon which describes a constellation of attributes of the new graduate nurse reflecting personality traits, intellectual abilities, and clinical judgment. In a previous pilot study conducted by this researcher nurse managers and experienced Registered Nurse (RN) preceptors described characteristics demonstrated by new graduate nurses demonstrating Factor H and the new graduate nurse's ability to transition quickly and successfully into the RN role in the acute care environment. There is currently no instrument available to measure this phenomenon. The specific aim of this research was to develop and psychometrically test a scale designed to identify the presence of attributes of Factor H in the new graduate nurse.

The Sims Factor H Assessment Scale (SFHAS) was developed and piloted with a sample of one hundred one new graduate nurses within three months of completing the their nursing program at one of three nursing schools in central and south central Indiana. Evidence of content validity was demonstrated through the use of the Content Validity Index conducted with a panel of four experts. Evidence of face validity was demonstrated through interviews with a group of new graduate nurses, nurse managers, and experienced RN preceptors. Principle Axis Factoring with Varimax rotation was used to demonstrate evidence of construct validity and the scale was found to have a single component which was identified as nursing personality. Evidence of criterion-related

validity was demonstrated utilizing analysis of the SFHAS and the criterion scale for personality traits (NEO-FFI). Evidence of internal consistency reliability was demonstrated through analysis of inter-item correlations, Cronbach's coefficient correlations, and item-total correlations. Test re-test reliability using interclass correlation was also conducted to demonstrate stability of the scale.

The SFHAS was found to be reflective of nursing personality and not general mental ability or clinical judgment. Use of the SFHAS will allow organizations to evaluate the nursing personality of the new graduate nurse for fit into the work environment. Further study is recommended to gain clarity around the attributes which support successful transition of the new graduate nurse into practice in the acute care environment, also known as Factor H.

Patricia Ebright, PhD, RN, FAAN, Chair

TABLE OF CONTENTS

LIST OF TABLES

1. Nature of the Study

Introduction

Healthcare reform is a issue causing many highly emotional debates. Regardless of political or personal opinions, hospital and healthcare leaders clearly recognize that the cost of healthcare is being strongly scrutinized and cost reduction is continuing to be a major focus. Nine out of ten hospitals report making cutbacks to address economic concerns with nearly half reporting reducing staffing (American Hospital Association, 2009). Along with the current financial crisis, a projected national shortage of Registered Nurses (RNs) is likely to worsen in the future as Baby Boomers begin to sign up for Medicare. At the same time hospitals are being pushed to improve quality and outcomes which are being publicly reported through the Centers for Medicare and Medicaid's (2009) work with the Agency for Healthcare Research and Quality through the Hospital Consumer Assessment of Healthcare Provider Service (2009) reports. Registered Nurses are expected to manage more patients with higher complexity (Harper & McCully, 2007).

How do we support the least experienced of these nurses, the new graduate RN? Nurse leaders can quickly identify new graduate RNs who have thrived in the acute care environment, yet there is a paucity of research to identify what it is that differentiates these new graduate RNs from those who struggle in the same environment. The development of an instrument that identifies those new graduate nurses who have the attributes recognized as contributing to successful new graduate nurse transition into practice will offer support to the nurse leader in hiring decisions. Such a tool will also offer the opportunity to identify areas of deficiency in the new graduate leading to

tailored orientation and education programs to support successful transition of those who may not have been able to excel given previous approaches.

When a new graduate nurse completes orientation and begins her/his independent role in an acute care environment, many people are watching her/his performance and role transition. Experienced nurses report to the nurse manager that a new nurse is not "getting it" and may need more orientation or a different unit or population focus. Other new graduates are reported to be "getting there; we just need to allow a little more time"- a typical situation for the advanced beginner. Then there is the new graduate nurse who demonstrates a phenomenon not currently defined, but which for the purpose of this study will be termed "Factor H." Peers as well as the nurse manager say, "Wow, I wish we had five more just like this one. She (or he) has really got it!" What is "it" and how do new graduates get "it"? Further, how do we measure this potential during the hiring process to assure we are creating more effective orientation plans so that the investment we are making in orientation and training in the acute care environment will result in a high performing new graduate nurse? What about those who represent the "average" new graduate who just needs a little more time? If we better understand strengths and deficiencies around the Factor H phenomenon, are we able to design an orientation plan that will support this new graduate to transition more rapidly and successfully?

There has been a significant focus on the culture of safety in reports such as the Institute of Medicine's (IOM) Quality Chasm report (IOM, 2001) and the initiation of The Joint Commission on the Accreditation of Hospitals and Healthcare Organizations (JCAHO, 2009) patient safety goals (numbering 16 for 2009). The Institute of Medicine's report on *The Future of Nursing: Leading Change, Advancing Health* (2010) calls for

nursing to advance our education and become full partners with physicians and other healthcare leaders. There are specific recommendations related to support to the new graduate nurse during transition into practice. At the bedside the nurse has more technology designed to make nursing work safer and hopefully more efficient and effective. Technology offers support to the work of the nurse and the perception of being able to deliver high quality, safe, and efficient care. However, when systems require more time and attention from the nurse, they add complexity to the work of the nurse (Kossman & Scheidenhelm, 2008; Wong, et al., 2009; Zuzelo, et al., 2008). For the new graduate nurse increased complexity adds to stress of working to gain a baseline understanding of the role of the RN in the acute care environment.

For the new graduate nurse changes in patient complexity also add to the need for rapid and effective transition into the RN role. Patients are entering healthcare settings with higher acuity and complexity, and in more advanced stages of illness. Although acute care settings have been seeing increasing acuity and complexity in general (Aiken, et al., 2001; Alexander, 2003; Brennan & Daly, 2009), research has shown that the uninsured present with higher acuity or more advanced disease states (Newton, et al., 2008; Kuzmiak, et al., 2008; Giacovelli, et al., 2008). Rates of unemployment have increased from 6.1% to 8.3% in the past three years (United States Department of Labor, 2012) leading to increasing numbers of uninsured individuals (Dove, Weaver, & Lewin, 2009). Patient acuity is increasing and length of stay is decreasing requiring nurses to be able to meet care requirements and prepare the patient for discharge in a shorter period of time. It is imperative that the nurse at the bedside be well prepared for these demands. The work environment itself is also increasingly complex. Ebright, et al. (2003) speak to

this complexity identifying eight patterns of work complexity which include issues such as interruptions, inconsistencies in care communication, and difficulty accessing resources. These are compounding issues for the new graduate whose student clinical experiences were in a much more controlled or protected environment where an RN had full accountability for the patients the student was assigned.

While hospitals and healthcare facilities search for ways to reduce costs, new graduate nurse orientation and nursing education are areas often targeted (Lindy & Reiter, 2006). This often means reducing the time allocated for orientation. Studies have shown that orientation not only impacts new graduate nurse competency, but also impacts retention of these new nurses (Connelly & Hoffart, 1998; Thomason, 2006). These studies suggest that new graduate nurses who are satisfied with their orientation program tend to be more satisfied with their role, have better retention rates, and increased confidence in their clinical skills. In a report by PricewaterhouseCoopers' Health Research Institute (2007) voluntary turnover of new graduate nurses in the first year of practice was found to be 27.1%. Turnover rates of new graduate nurses have been estimated as high as 35%-60% in the first year of practice (Maxwell, 2011). Given the impact of orientation on retention, decreasing orientation time without thoughtful consideration of content and outcomes has the potential to lead to increased turnover. While limiting orientation may reduce front end costs of nursing services, it has potential for increasing overall costs. The reported cost of replacing a RN varies widely with estimates as high as $82,000-$88,000 (Jones, 2008; & Maxwell, 2011). It is, therefore, in the best financial interest of the organization to find ways of retaining new graduate

nurses and orientation has been demonstrated to be a key first step (Connelly & Hoffart, 1998; Thomason, 2006).

The loss of an RN has not only a financial impact on the organization, but also a quality impact. Benner (1984) suggests that the new graduate functions at the advanced beginner stage and that it takes approximately five years for a nurse to reach the expert stage if she/he does at all. This turnover in the first one to two years leaves a gap in the numbers of nurses who are expert on the unit and who by Benner's definition have extensive experience, and an ability to utilize intuition developed from this experience to respond efficiently and effectively to patient needs.

As one considers the importance of orientation, there must be attention given to the effectiveness of orientation in the acute care environment. Review of staff development literature over the past five years suggests a strong focus on orientation and retention of new graduate nurses. At the same time, research is limited in relation to orientation processes and programs which demonstrate improved outcomes. In fact, there is a paucity of literature which reflects new graduate nurse orientation outcomes in terms of work performance or quality outcomes. Outcome measures of orientation literature are focused on satisfaction and turnover of the new graduate nurse in the first year to eighteen months. While this is of considerable interest as the turnover rates are of concern as noted previously, quality and work performance are also of concern in our current complex environment. Many articles in the literature discuss orientation programs, but most employ surveys or descriptive methods to examine new graduate nurse perceptions and experiences. There are few articles that use experimental or quasi-experimental designs in this area. Studies show the deliberate intent of organizations to

develop structured orientation programs, especially those targeted at new graduate nurses (Floyd, et al., 2005; Marcum & West, 2004). The structured orientation programs vary by institution and by specialty, but typically include several consistent components. These components include the use of preceptors and the development and measurement of competency in a framework that is organization specific and time limited.

There is a focus on the use of a more experienced nurse as a preceptor whose role is to train and educate the new graduate nurse on expectations of this new role. Some organizations have structures related to how preceptors are selected and trained, while others do not (Connelly, & Hoffart, 1998; Casey, et al. 2004; Lampe, et al., 2011). There is also variation in how the preceptor role is operationalized related to responsibilities, support, and workload of the preceptor (Floyd, et al., 2005). Organizations identified as having strong orientation programs, as demonstrated by orientee satisfaction and retention of new graduate nurses during the first year of practice, also include some form of didactic or classroom education to support the orientation program (Thomason, 2006; Floyd, et al., 2005).

Competency focus is a primary characteristic of RN orientation. Regulatory agencies require validation of competency including specifically "orientation" (Joint Commission on the Accreditation of Healthcare Organizations Comprehensive Accreditation Manual for Hospitals, 2005; Healthcare Facilities Accreditation Program Accreditation Requirements for Healthcare Facilities, 2009; Indiana State Department of Health, 2009). Orientation is the beginning of required ongoing evaluation of competency of the new graduate nurse. Organizations identify key competencies and develop methods of transferring this competency to new graduate nurses. Some orientations are described

as “competency-based” meaning they identify the required competency, current level of competency, and the gap between the two. This gap leads to goal development related to competency acquisition, which guides orientation plans (Connelly & Hoffart, 1998). Competencies can be focused on clinical skills (such as IV initiation), patient management skills, communication skills, and/or critical thinking skills (Marcum & West, 2004; Casey, et al., 2004). Successful orientation can be documented using clearly written performance outcomes expectations and the actual performance by the new graduate nurse (Connelly & Hoffart, 1998).

While all these reflect factors seen as important in the transition of the new graduate nurse into practice, understanding Factor H offers a different approach. Evaluation of Factor H in each individual offers opportunity to focus not only on the content needed to complete orientation and be considered competent to practice in the acute care setting, but also on what types of learning would be appropriate to enhance the demonstration of Factor H. Gaining an understanding of Factor H offers opportunity to address the transition of the new graduate nurse in a manner that supports rapid yet successful transition into the RN role.

In a pilot study this author surveyed nurse managers and experienced RN preceptors to identify the attributes that influence their perception as to whether the new graduate nurse demonstrates Factor H. The study had a descriptive mixed methods design. The convenience sample consisted of nurse managers and experienced RN preceptors from acute care settings at two Midwestern hospitals. The first hospital was a 400 bed religiously affiliated, not-for-profit, non-Magnet hospital system in an urban area. The second was a 225 bed regional referral center, not-for-profit, non-religious

based, Magnet hospital. All nurse managers of acute care units within the two facilities who hire new graduate nurses were invited to participate.

Those nurse managers who chose to participate were asked to complete a survey form consisting of a description of the phenomenon known as Factor H with an open ended question asking them to identify attributes they perceive as critical in recognizing this phenomenon. The survey also asked them to identify attributes that negate or verify the absence of Factor H. They were then asked to rank the attributes from most influential to least influential in determining their perception of the presence of Factor H. Nurse managers were asked to identify one experienced RN preceptor from each unit for which they had responsibility to participate as well. Demographic data collected included facility, role, age, gender, type of unit, and years of experience as a nurse manager or RN preceptor.

Six nurse managers and seven experienced RN preceptors participated at the regional referral center for a 100% participation rate across eligible units. In the hospital system three nurse managers and three experienced RN preceptors participated for a rate of 13% of eligible units. Average age of participants was 54 years for experienced RN preceptors and 53.4 years for nurse managers. RN preceptors averaged 26 years of RN experience and nurse managers averaged 24.4 years. All participants were female. The data was compared by role (nurse manager vs. RN preceptor), organization, and demographic categories.

Three consistent concepts arose across roles, organizations, and types of units. Grouping of attributes within these themes suggested three concepts which contribute to development of Factor H in the new graduate nurse and include personality factors,

general mental ability (GMA), and a third initially identified as critical thinking (Table 1). In order to validate this researcher's analysis resulting in three main concepts, five nurse managers who had participated in the survey were asked to assign the "Factor H present" attributes under the concepts of the model. Any that would not readily fit were to be set aside. Definitions for all concepts within the model were provided. Results of the nurse managers' groupings supported the concepts identified by the researcher. This literature review, therefore, discusses how these concepts influence work performance and therefore how they are expected to influence perception of Factor H in the new graduate nurse.

Table 1

Model Concepts by "Factor H Present" Attributes

Personality factors	**General mental ability**	**Critical thinking**
Eager	Seeks new experiences	Asks questions
Organized		Thinks outside box
Confident	Time management	Critical thinking
Open to feedback	Self-motivated	Prioritizes
Caring and Compassionate	Can explain what is happening and why	Observes others' practice
Helps without being asked	Anticipates problems	Recognizes changes in patient
	Engaged	
Good people skills	Multi-tasker	Recognizes what they don't know
"Go-getter"	Follow-through	
Enthusiastic	Studies and researches to learn more	
Good communicator		
Listener		
Positive outlook Attention to detail	Respects policy and procedures	
Structured	Focused	
Responsible	Work reflects knowledge	
Integrity		
Trustworthy		
Ownership		
Flexible		
Available		
Keeps cool head		
Punctual		
Wants to be here		
Shares experiences		

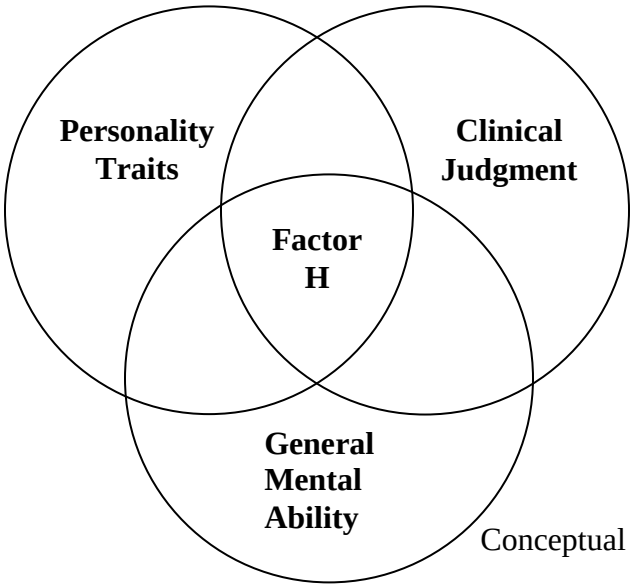
After extensive literature review as will be reflected in Chapter 2, it became evident that the third component, critical thinking, may be mislabeled. The literature surrounding critical thinking was discussed including the multiple facets of this concept with components such as confidence, self reflection, inquisitiveness, logical reasoning, and reflection (Scheffer & Rubenfeld, 2000; Zori & Morrison, 2009). Although these components clearly supported what was being described by the nurse managers and experienced RN preceptors, there was also a very patient-focused perspective that was missed in these definitions. Definitions of clinical reasoning and clinical judgment as reflected by the work of researchers such as Benner, Tanner, and Chesla (1996), Pesut and Herman (1999), and Facione and Facione (2008) reflected the patient aspects included in the responses of nurse managers and experienced RN preceptors that critical thinking definitions were not addressing. The work of these authors incorporates the patient situation into the clinical decision making. For these reasons this concept label was changed to clinical judgment. These concepts will be discussed in more detail in the literature review in Chapter 2.

Problem Statement

Selection of new graduate nurses who will be highly successful in the acute care environment is an important issue for nursing leadership. New graduate nurses will need to be well prepared to face the increasing challenges in acute care, and they will need to be ready to take these challenges on quickly. In a pilot study this author surveyed nurse managers and experienced RN preceptors to identify the attributes they believe the new graduate nurse with Factor H (as described previously) demonstrates. Many consistent attributes arose across roles, organizations, and types of units. Results of this study

suggested three concepts contribute to development of Factor H in the new graduate nurse; personality factors, general mental ability (GMA), and clinical judgment. This suggested a conceptual model as shown below (Figure 1) in which these concepts contribute to the demonstration of Factor H in the new graduate nurse.

Figure 1



Conceptual Model of Factor H

Given Factor H was a newly conceptualized phenomenon, there was no tool to measure its presence. Development of such a tool had potential to reduce costs via targeted and efficient focus on those attributes either present or absent in the new graduate nurse.

Purposes

The purpose of this study was to develop and psychometrically test the Sims Factor H Assessment Scale (SFHAS). This scale was designed to identify the presence of attributes of Factor H in the new graduate nurse. The conceptual framework utilized for development of the phenomenon of Factor H was Walker and Avant's concept synthesis framework (2005), since Factor H was a phenomenon not previously identified or described. Work prior to this study in the pilot study had supported the first three steps of

this framework. These steps include classifying acquired data, examining data for any hierarchical structure, and naming the concept. The next step in this framework was verifying the new phenomenon empirically. In order to accomplish this, an instrument needed to be developed to measure the phenomenon. This was the purpose of this study.

Specific Aims and Hypotheses

The specific aim of this research was to develop and psychometrically test Sims Factor H Assessment Scale which is designed to identify the presence of attributes of Factor H in the new graduate nurse.

Specific Aim 1: Develop the Sims Factor H Assessment Scale (SFHAS) and evaluate content validity of individual items.

Hypothesis 1a: Evidence suggesting face validity for the SFHAS related to relevance to the transition of the new graduate nurse into practice and the demonstration of Factor H will be demonstrated using a sample of five new graduate nurses, three nurse managers, and three experienced RN preceptors.

Hypothesis 1b: Content validity will be analyzed utilizing the Content Validity Index (CVI) with four content experts who are doctorally or masters prepared in education research or nursing administration. Content will be rated on a four point scale (four representing highly relevant and succinct) related to representativeness and relevance to highly successful new graduate nurse practice (Factor H). Interrater agreement (IR) for relevance and representativeness will be evaluated across content experts. Lynn (1986) suggests a CVI of > .83. Items not meeting this standard required revision or were deleted.

Specific Aim 2: Demonstrate evidence of construct validity of SFHAS.

Hypothesis 2a: The Kaiser-Meyer-Olkin measure and the Bartlett Test of Sphericity will demonstrate factor analysis to be appropriate (Dziuban and Shirkey, 1974).

Hypothesis 2b: An exploratory factor analysis will be used to determine the structure of the concept of Factor H. The SFHAS will have subscales reflective of the concepts contributing to Factor H.

Specific Aim 3: Demonstrate evidence of criterion-related validity for SFHAS.

Hypothesis 3: Strength of correlations between SFHAS and NEO-PI-R, WAIS-R, and the Lasater Clinical Judgment in Simulation Rubric (LCJSR) will be analyzed in order to evaluate evidence of criterion-related validity.

Specific Aim 4: The SFHAS will demonstrate evidence of internal consistency reliability.

Hypothesis 4a: A one-sample Kolmogorov-Smirnov Test will be analyzed to evaluate normality with a goal of a result that is not significant at the $p<.001$ (Pallant, 2007).

Hypothesis 4b: Evidence of internal consistency reliability will be demonstrated utilizing SPSS. The subscales identified during the factor analysis were analyzed to evaluate inter-item correlations of >.30 and < .70, item-total correlations of >.30 and < .70as suggested by Ferketich (1991) and Cronbach's coefficient correlation of $\geq$.70 as suggested by Netemeyer (2003).

Specific Aim 5: The SFHAS will demonstrate evidence of test re-test reliability.

Hypothesis 5: Evidence of test re-test reliability will be demonstrated by administering the SFHAS twice to the same participants two weeks apart as recommended by Yen and Lo (2002). The results will be analyzed utilizing the Interclass Correlation Coefficient. Results from the ICC will reflect strength of stability of the tool: 0-.20

suggests weak stability, .21-.40 suggests fair, .41-.60 suggests moderate, .61-.80 suggests substantial, .81-1.0 suggest near perfect stability (Landis and Koch, 1977).

Conceptual and Operational Definitions

New graduate nurse

Conceptual Definition: New graduate from a pre-licensure program preparing Registered Nurses

Operational Definition: A nurse who is transitioning into a first time position in acute care nursing after graduating from a nursing program, who has completed new graduate nurse orientation, and is working independently as evidenced by caring for an assigned patient load without oversight of a preceptor indicative of the advanced beginner level of performance.

Factor H

Conceptual Definition: A constellation of attributes of a new graduate nurse which reflects personality traits, general mental ability, and clinical judgment which is able to be recognized by nurse managers and experienced RN preceptors.

Operational Definition: The Sims Factor H Assessment Scale is a 20 item newly developed scale to reflect personality traits, general mental ability, and clinical judgment as discussed in the literature. Participants scored each item on a scale from strongly disagree to strongly agree as the item relates to her/his nursing practice. Further development and testing of this scale was the purpose of this study.

Personality traits

Conceptual Definition: Personality traits are defined as, "characteristics of an individual that exerts pervasive influence on a broad range of trait-relevant responses," (Ajzen, 1988).

Operational Definition: The Revised NEO Personality Inventory (NEO PI-R) is a psychological personality inventory which measures the Five Factor Model (FFM) of personality. The five factors measured are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. A shorter version of the NEO-PI-R is the NEO-FFI which consists of sixty items related to the FFM rated on a 5-point scale. The NEO-FFI has also been shown to demonstrate evidence of reliability and validity and will be used in this study to in order to decrease participant burden as compared to the full NEO-PI-R.

General mental ability

Conceptual Definition: General mental ability is defined as the general capability to engage in reasoning, planning, problem solving, abstract thinking, learning quickly and from experience, and comprehending complex reasoning (Lubinski, 2004).

Operational Definition: General mental ability is most commonly measured by the Wechsler Adult Intelligence Scale (WAIS-R) (Dreary, et al.., 2006). A shortened version of this tool, the Wechsler Abbreviated Scale of Intelligence (WASI), is also available and yields scores for full scale IQ, performance IQ, and Verbal IQ. The WASI has also been shown to demonstrate evidence of high correlation with the WAIS-III, the most current version of the WAIS and evidence of internal consistency and test-re-test reliabilities for

all three measures (Ryan, et al., 2003; Axelrod, 2002). The WASI will be used in consideration of participant burden.

Clinical judgment

Conceptual Definition: Tanner (2006) defines clinical judgment as, "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response," (p. 204). She differentiates clinical judgment from clinical reasoning in that clinical reasoning is the process(es) by which nurses reach these conclusions. Additionally Benner, Tanner, and Chesla (1996) describe the clinical judgment of the expert nurse as including not only rational decision making, but also a focus on "what is good and right" (p. 5), practical knowledge gained from experience, the nurse's emotional engagement and response, intuition "born of experience" (p. 8), and understanding the patient's story and patterns of responses. In the eyes of the nurse manager or experienced RN preceptor this may be seen as the new graduate nurse who involves the patient and family in deciding on next steps, who seeks to identify previous patient history or experience that adds to or limits effectiveness of options, and/or who seeks to understand how the patient's cultural values and beliefs will be impacted by implementation of the standard approach to the situation or diagnosis. It is demonstrated by behaviors that look beyond just the usual treatment or intervention to integrate the patient's life story into the care to be given.

Operational Definition: The Lasater Clinical Judgment in Simulation Rubric (LCJSR) is a scale designed to measure clinical judgment in a simulation situation by evaluating four aspects: noticing, interpreting, responding, and reflecting. Each aspect is defined by

dimensions of behaviors associated with the aspect. Each dimension is scored on a scale with clearly defined behaviors with a range of scores from exemplary to beginning. The LCJSR has demonstrated evidence of reliability and validity. This tool will be used to measure clinical judgment in this study.

Demographics

Conceptual Definition: Demographics which were collected from all participants will include: Age, previous clinical experience, non-clinical experience, school of nursing attended, semester graduating, gender, self described ethnicity, and graduation year.

Operational Definition: A demographic form developed by this investigator will be used to collect demographic data.

Assumptions

1. New graduate nurses responded honestly to the items within the instrument.
2. The Lasater Clinical Judgment in Simulation Rubric (LCJSR) was also reliable and valid when applied to case studies, as was done for this study.

Limitations

1. A non-probability, convenience sample was used for this study.
2. There were no instruments considered to be the "gold standard" for measurement of clinical reasoning or clinical judgment.
3. Factor H is a newly conceptualized phenomenon, therefore there is no literature or previous research specific to this phenomenon.
4. There was no evidence to support that the Lasater Clinical Judgment in Simulation Rubric is also reliable and valid when applied to case studies.

These assumptions and limitations were considered acceptable given the purpose and descriptive nature of this study of a new phenomenon. There has been no previous study of Factor H and its ability to reflect potential successful transition of the new graduate nurse into the RN role.

Overview of Chapters

This dissertation consists of five chapters. Chapter 1 includes an introduction and definition of the phenomenon, describes the background and significance, and defines key terms and concepts. As used in this study phenomenon refers to a unique or exceptional constellation of behaviors which are recognized in the new graduate nurse who is successful in transitioning into her/his first RN role. In this chapter specific aims, hypotheses, assumptions, and limitations of the study are also discussed. Chapter 2 includes a review of literature related to the phenomenon. Given Factor H is a newly identified phenomenon, this section reviews literature relevant to new graduate nurse transition into practice, personality traits, general mental ability, and clinical reasoning and clinical judgment. Chapter 3 is a description of the psychometric testing used, study design, and methodology for collecting and analyzing data. Chapter 4 is the report on the results of the psychometric testing of the SFHAS, and Chapter 5 includes descriptions of application and implications of these results for new graduate nurse transition into practice.

2. Literature Review

Factor H

As noted in the introduction Factor H is a newly identified phenomenon, therefore there is no literature directly describing it. The nursing literature speaks to concepts such as orientation, role transition, clinical competency, and professionalism in reference to the development of the new graduate nurse. While all of these may contribute to Factor H, their definitions do not encompass this phenomenon. Orientation and role transition are defined as programs or processes (Newhouse, et al., 2007 and Casey, et al., 2004). While these may contribute to Factor H, they do not define the concept. During orientation and role transition clinical competency is an important focus. Clinical competency is a measurement of clinical skills that should be acquired during the orientation process in order to prepare the new graduate nurse for independent practice (Connelly & Hoffart, 1998). Factor H cannot be explained simply by or as clinical competence although Factor H certainly reflects the new graduate who demonstrates a successful transition into RN practice.

Professionalism is another concept frequently discussed in relation to the new graduate nurse's entry into practice. Professionalism has been defined by Huber (2006) as the "extent to which a person adheres to standards, practices ethically, and identifies with the profession," (p. 64). While those recognizing Factor H certainly suggest they see these attributes of professionalism, Factor H is not limited to this definition. Patricia Benner's work in *Novice to Expert: Excellence and Power in Clinical Nursing Practice* (1984) identified five stages of development from the novice nurse to the expert (novice, advanced beginner, competent, proficient, and expert). Her later work with Tanner and

Chesla (1996) looked more deeply at the advanced beginner and the reasoning developing as well as the influence of anxiety, self-evaluation and understanding on the new graduate nurse's practice. While Benner's work has had invaluable influence on the understanding of the transition of the new graduate nurse into professional practice, Factor H looks at a different aspect of the new graduate nurse during transition into practice.

Emotional Intelligence

Another concept considered to support the measurement of Factor H was Emotional Intelligence. Blattner and Bacigalupo (2007) define Emotional Intelligence (EI) as, "the ability to recognize and understand emotions and the skill to use this awareness to manage self and the relationships with others," (p. 210). There is, however, a lack of consensus on how EI should be defined and conceptualized (Zeidner, Roberts, & Matthews, 2008; Joseph & Newman, 2010). Over the past two decades since its introduction EI has been gaining popularity in work focused on improving leadership skills as well as in applicant selection in the work environment. In an integrative meta-analysis of 68 studies however, Joseph and Newman (2010) did not find strong support of EI as a stronger predictor of performance over personality and cognitive traits. They did find a stronger potential for EI as a predictor of work performance in those occupations seen as requiring high levels of emotional control. Although nursing was not called out in this study clearly nursing requires a high level of understanding and control of emotions.

In evaluating the use of EI as a component of Factor H in the new graduate nurse, review of fit with the previous pilot study was important since the participants in the pilot study defined Factor H by key characteristics possessed by the new graduate nurse

demonstrating Factor H. Mayer and Salovey (1997) defined four characteristics of EI as follows:

- Perception, appraisal, and expression of emotion
- Emotional facilitation of thinking
- Understanding and analyzing emotions; employing emotional knowledge
- Reflective regulation of emotions to promote emotional and intellectual growth

Although these attributes may in fact support demonstration of Factor H in the new graduate nurse, they are not in close alignment with the characteristics identified in the pilot study. The focus of Factor H is on a composite of characteristics of the new graduate nurse which support the ability to efficiently and effectively make the transition from advanced beginner to competent practice.

Five Factor Model of Personality

As the attributes identified in the pilot study within the concept of personality traits were reviewed, patterns emerged which were closely aligned with the Five Factor Model (FFM) of personality: five factors with six personality facets within each factor (Table 2). The Five Factor Model of personality is commonly credited to Tupes and Christal who built on the 1940's work of Guilford, Cattell, and Eysenck. Tupes and Christal found five factors that recurred in their analyses of personality and published this work in 1961 (McCrae & John, 1992). Since that time the FFM has been used as a measurement tool to study personality and its relationship to a broad range of topics from effectiveness of sales representatives (Barrick, Mount, and Strauss, 1993) to political attitudes (Riemann, et al., 1993). FFM describes personality in terms of five factors of personality; Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience (McCrae & John, 1992). Extroversion is defined by Costa, McCrae, and

Dye (1991) in terms of the following facets: “warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotions”. They describe agreeableness as having facets of “trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness”. Together these two factors describe the interpersonal skills of the individual. They go on to describe conscientiousness in terms of the facets: “competence, order, dutifulness, achievement striving, self-discipline, and deliberation”. Costa, McCrae, and Dye discuss neuroticism as pertaining to facets of “anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability.” Howard and Howard (2004) have also suggested that for workplace use, the neuroticism term should instead be described as “need for stability.” In either case it describes the individual’s response to stress. Openness is described by Costa, McCrae, and Dye (1991) as measuring intensity of the facets “fantasy, aesthetics, feelings, actions, ideas, and values.” This is generally considered to be an indicator of affinity towards the arts.

Table 2
FFM Facets and Alignment of Attributes Identified in Factor H Pilot Study

Five Factor Model with Associated Facets	**Cumulative Attributes From Pilot Study**
Extraversion	
Warmth	shares experiences with others, socialized into facility
Gregariousness	good people skills, people person
Assertiveness	can explain what is happening and why, confident
Activity	Eager
Excitement Seeking	wants to be here
Positive Emotion	enthusiastic, positive outlook, cheerful
Openness	
Fantasy	Engaged
Aesthetics	
Feelings	open to feedback, trustworthy
Actions	seeks new experiences, asks questions, spends time studying and researching to learn more
Ideas	asks questions, recognizes what they don't know, observes others practice
Values	solicitous, listener
Agreeableness	
Trust	
Straightforwardness	
Altruism	works well with team, available
Compliance	keeps cool head
Modesty	
Tender mindedness	caring and compassionate
Conscientiousness	
Competence	work reflects knowledge, "go getter", experience as a student, strong clinical skills and experience
Order	punctual, critical thinking, organized, time management
Dutifulness	applies problem solving, respects policy and procedure, responsible
Achievement Striving	prioritizes, self-motivated, flexible
Self-Discipline	ownership, anticipates problems, helps without being asked, follow through, integrity, attention to detail
Deliberation	focused, structured, communicator
Neuroticism	
Anxiety	
Hostility	
Depression	
Self-Consciousness	
Impulsiveness	
Vulnerability to Stress	

The NEO-PI-R is the most commonly used measure for the Five Factor Model of personality in adults and adolescents as demonstrated by its wide acceptance and use in studies surrounding personality as well as by repeated demonstration of strong reliability and validity of the tool (Widiger & Lowe, 2007; Gaughan, et al., 2009). The level or

amount present of the two other attributes identified in Factor H (GMA and clinical judgment), are not measured in the NEO PI-R. It consists of 240 personality items and 3 validity items. It was designed to provide a general description of normal personality relevant to clinical, counseling, and educational situations. NEO PI-R items and materials were designed to be easily read and understood. The five factors measured by the NEO PI-R provide a general description of personality, while the factors associated facet scales allow more detailed analysis (Sigma Assessment Systems, 2007). This tool has been used extensively across multiple disciplines. Internal consistency coefficients range from .86 to .95 for factor scales and from .56 to .90 for facet scales, demonstrating evidence of reliability and validity (Costa & McCrae, 2005).

Conscientiousness

McCrae and Costa's work with the FFM has served as a foundation for further research looking more specifically at these five personality factors and work performance. Barrick and Mount (1991) performed a meta-analysis on research conducted related to the five factors and job performance. One hundred seventeen studies over 21 years were reviewed. Sample sizes ranged from 13 to 1,401 for a total of 23,994. The factor that showed most significant effect on the measures of job proficiency and training proficiency was conscientiousness. In another meta-analysis of 80 research reports dated through the end of 2007 which included a total of 70,000 participants across studies, conscientiousness was shown to be the strongest predictor of academic performance even when measured independently of intellect (Poropat, 2009). This was consistent with previous studies indicating conscientiousness was also the strongest

predictor of work performance of the personality traits (Barrick & Mount, 1991, Barrick, et al., 2001).

Conscientiousness has potential for contributing to perception of the presence of Factor H given that how quickly and well the new graduate learns and performs her/his new role are indicators of success or "getting it." They describe the factor as measuring "accomplishment of work tasks". The completion of tasks (such as dressing changes and ambulating a patient) is only one small portion of the work of the RN. More significant is the work of reasoning associated with these tasks as reflected by assessment, planning, intervention, and evaluation; the nursing process. This includes the analytical thinking necessary to organize and prioritize these processes.

In a study of experienced teachers, conscientiousness was found to be unrelated to job performance (Emmerich et al., 2005). Nurses are involved in significant amounts of teaching. Emmerich's study focused specifically on the experienced teacher and the focus of Factor H is on the new graduate nurse. Schmidt and Hunter (2006) and Barrick, et al. (2001) also speak to the consistent results of studies over time suggesting that there is a significant correlation between conscientiousness and work performance. Even with the outlier of the Emmerich study, consideration should be given to the influence of conscientiousness on the demonstration of Factor H in the new graduate nurse given the strength of evidence supporting its influence on work performance (Barrick & Mount, 1991; Barrick, et al., 2001; Poropat, 2009).

Extraversion

Barrick and Mount (1991) also discuss the identified influence of the other factors. Extraversion was seen to be reflective of performance in roles such as

management and sales which the authors describe as work that requires a significant portion of the job in interaction with others. The RN role is highly engaged in interpersonal communication with patients, families, physicians, and other disciplines. This would suggest that if the defining characteristic of extroversion being a positive predictor of success in management and sales is the effect of interpersonal interaction, it may also have some predictive ability in nursing, even though the analysis in this study suggests that it would be less predictive in professionals. Extroversion and openness to experience were also found to be predictive of training proficiency (Barrick & Mount, 1991). This would suggest extroversion and openness support success in the RN role transition as education and training are important aspects of this process. Perceptions of others of the new graduate nurse's ease of mastering education and training may contribute to the overall perception of demonstration of Factor H. Hartman and Betz (2007) found conscientiousness and extroversion to be the strongest predictors of career-related self- efficacy of the five factors. Given this previous discussion, one could suggest that this would also be true of Factor H in the new graduate nurse.

Openness and Agreeableness

The factors openness to experience and agreeableness were not shown to be significantly predictive of job performance. Agreeableness has been studied related to interpersonal communication and conflict resolution, important activities in the role of the Registered Nurse who communicates ongoingly with patients, families, physicians, and other disciplines. These interactions can be potential sources of conflict that the nurse must be able to manage. Graziano et al. (1996) studied how agreeableness impacted the interpersonal interactions and conflict resolution with a sample of 263 participants. The

findings suggest that agreeableness is the most related of the five factors to interpersonal relationships. They found that those who were highly agreeable found less conflict in their interactions, and they also elicited less conflict with others than do those who are low in agreeableness. Initially one might suggest that "low agreeableness" is a positive characteristic for a nurse to have given the potential of conflict in the acute care environment. Given that the Joint Commission on Accreditation of Hospitals has found the leading cause of sentinel events to be related to communication failure (Nadzam, 2009), does the agreeableness factor, especially in the new graduate nurse, decrease their likelihood to appropriately challenge and advocate for the patient? The new graduate nurse demonstrating Factor H would not be described as argumentative, but would be described as assertive in communication and advocating for the patient. In communication with the patient the ability to balance agreeableness in such manner as to communicate clearly and effectively related to care options and anticipated outcomes and to still support a patient's right to make decisions about his/her own care is of paramount importance.

Neuroticism

In a meta-analysis of 117 studies, Barrick and Mount (1991) found the factor Neuroticism (or as they describe it "emotional stability") to have low predictive ability for job performance except in cases of an exaggeratedly high neuroticism. In such a case the individual was not likely to be in the work force at all. It was of interest however, that they found that in professionals neuroticism occurring in a negative direction (though not severely negative) actually was consistent with better performance. The authors suggested this difficult to explain except to suggest that pressures of professional jobs

may result in demonstration of some behaviors consistent with neuroticism. On the other hand, it may be plausible to suggest that those more prone to worry and nervousness will be more likely to deliver on the demands of the role in order to avoid potential negative outcomes (discipline or termination). In a second-order meta-analysis utilizing a total of 11 meta-analyses Barrick, Mount, and Judge (2001) found that high emotional stability (considered opposite to neuroticism) was a valid positive predictor of work performance across jobs. Occupations were grouped as sales, managerial, professional, police, or skilled or semi-skilled. The ability to predict depends on the specific indicator being scored. Judge, et al. (2006) found that neuroticism was negatively associated with work performance. They further found that it was especially a liability in three categories of jobs. The first was in a role in which being able to accurately judge one's own skills and talents is important. When considering the new graduate nurse, one recognizes the importance of the ability to recognize when to seek other resources for unfamiliar responsibilities. The second type of work that is problematic for the high neuroticism (recognizing high neuroticism as opposite of the high end of emotional stability) is the work environment where teamwork and collegiality are important. Again the work of the nurse in an acute care setting is typically very team oriented and interaction and collaboration with other team members (including other nurses, other disciplines, and physicians) is crucial to patient outcomes. The final situation is a setting in which 360 degree rating systems are in place as those with high neuroticism will attempt to enhance their own scores, responding potentially with hostility when others do not rate them highly. This may be an issue in acute care nursing depending on the culture of the organization. Many organizations employ 360 degree rating systems, and in Magnet

nursing facilities, peer review is a requirement of accreditation (American Nurses Credentialing Center, 2009). Hartman and Betz's study (2007) also supported neuroticism as a strong, consistent predictor of inefficacy which is consistent with the person with high neuroticism generally being someone whose perceptions are less happy and fulfilled. Given the rapidly changing environment of acute care nursing, neuroticism appears to clearly be a trait that has potential to be a barrier to actualization of Factor H.

Lodi-Smith and Roberts (2007) in a recent meta-analysis of 94 studies for a total of 35,459 total participants found, "those individuals who are conscientious, agreeable, and/or emotionally stable tend to be more active in structuring and defining institutions of society, such as the meaning of work…" (p. 80). In terms of nursing work these would be individuals more likely to be engaged in elevating the practice of nursing in whatever role they are working. This study supported the previously discussed influence of personality traits on work performance thereby suggesting demonstration of Factor H may also be supported by these influences.

McCrae et al. (2001) stated, "It appears that FFM personality structure is almost entirely the result of genetic influences," (p. 530). This suggests that one's genetically pre-determined personality make up cannot be influenced by external stimuli. However, in a review of 92 studies, Roberts et al. (2006) concluded that life experiences and life lessons influenced one's personality traits especially those experienced in young adulthood. This was reflected by examples that suggested as young adults meet new expectations of performance and behavior, they must learn to adapt behaviors that are reflective of one's personality (such as responding to expectations of one's first employer to be on time and complete a certain amount of work to receive one's pay). This suggests

a potential for external factors to impact some level of change in the demonstration of personality traits. This would suggest that Factor H might also be influenced externally, and amenable to change by nursing education, nursing pedagogies, and orientation plans in acute care settings. While personality factors have been shown to influence work performance, Schmidt and Hunter (2004) reinforce that in terms of job performance and ultimate occupational level general mental ability (GMA) has been shown to be more predictive than personality.

General Mental Ability

The term general mental ability (GMA) was first discussed by Charles Spearman in a 1904 article in the *American Journal of Psychology*. Spearman held that all intellectual activity required an amount of "g" or general mental ability. He stated that this factor was consistent for an individual across time, and that this g was a strong predictor of performance (Lubinski, 2004). Lubinski goes on to discuss the difficulty in coming to an agreed upon definition of general mental ability among scientists. A group of 52 experts concluded that the essence of g is the general capability to engage in reasoning, planning, problem solving, abstract thinking, learning quickly and from experience, and comprehending complex reasoning. In other words it is not only about the actual intellect as may be measured by psychometric tests such as IQ, but also has to do with intellectual activity or how one reasons, evaluates, and makes sense of data. In nursing we might consider this associated with clinical reasoning and with the nursing process. Hunt (1995) suggested that our society has moved past the focus on industrialization to knowledge work. Workers who have skills in analysis, knowledge, and skill acquisition and capabilities that support abstract reasoning are best prepared for

the new work environment. Schmidt and Hunter's (2004) work demonstrated that general mental ability has significant predictive ability of work performance as measured by supervisor ratings of job performance. Certainly the complexity of nursing care requires a strong ability to think, reason, learn, and understand. For the new graduate nurse the ability to acquire knowledge quickly and effectively is an important factor in success and certainly is likely to be characteristic of the new graduate nurse demonstrating Factor H.

These attributes of intelligence (also called cognitive functioning) which include analysis, knowledge, and skill acquisition and capabilities that support abstract reasoning are often classified as fluid and crystallized intelligence. Fluid intelligence speaks to one's ability for cognitive flexibility, problem-solving, and finding meaning amidst confusion (reasoning) whereas, crystallized intelligence is one's ability to use knowledge, skills, and experience (Cavanaugh & Blanchard-Fields, 2006). The most commonly used tool to measure general mental ability is the Wechsler Adult Intelligence Scale (WAIS-R), (Dreary, et al., 2006). The WAIS-R consists of six verbal subtests and five performance subtests. "The reliability coefficients: (internal consistency) are .93 for the Performance IQ averaged across all age groups and .97 for the Verbal IQ, with an r of .97 for the full scale," (Wechsler Adult Intelligence Scale website, 2004). General intelligence is a heritable trait, and studies across time have shown that approximately 50% of variance in intelligence can be attributed to genetics (Petrill, et al., 2004; Plomin & Spinath, 2004).

Genetic influence on general mental ability

There have been hundreds of studies searching for the structure of human intelligence, however few traits specific to cognition have been mapped to specific genes

or chromosomal regions (Buyske et al., 2006). Herbst, et al., (2000) attempted to find an association between D4 Dopamine receptor gene (D4DR) and temperament dimensions of novelty seeking and harm avoidance (comparable to Openness and Neuroticism). In their studies they were unable to show a significant association. Buyske et al. (2006) studied non-language traits and were able to identify three regions on chromosomes 11 and 14 that appeared to contribute specifically to these aspects of intelligence. They utilized five neuropsychological tests in this study. These findings, while of great importance in beginning to localize intelligence within the genes, were based on data from a sample of individuals who were engaged in a study related to alcoholism. The question then arises as to whether these results are common in non-alcohol dependent individuals as well. It does support the heritability of intelligence. Burdick, et al. (2006) were also able to identify a connection between genes and intelligence. They found that a specific region on chromosome 6p was associated with genotype and general cognitive ability, thus reinforcing the ability to trace g to genetic codes. Applicable to Factor H, one could suggest that a certain level of intelligence is required to be accepted into a nursing program, to be successful in completing it, and becoming licensed. That being a given, then how does the level of intelligence influence the actualization and variation of Factor H in the new graduates' practice?

General mental ability and work performance

Many studies have made a positive connection between general mental ability and success in the work place. Ree and Earles (1991) in their work in the United States Air Force found that g was the best predictor of training aptitude. Kuncel, et al. (2004) speak to the connection between intelligence and success in the work place stating that general

cognitive (or mental) ability positively influences work performance. Schmidt and Hunter (2004) suggest further that, "the major effect of GMA is on the acquisition of job knowledge: People who are higher in GMA acquire more job knowledge and acquire it faster" (p. 170). How do these reflect the new graduate nurse who demonstrates Factor H? Certainly they can be described as learning the needed knowledge and skills and learning them faster than the new graduate who does not demonstrate Factor H. Blair (2006) suggests that, "g is not a thing in and of itself but a manifestation of some yet undefined properties of brain structure and function," (p. 110). Perhaps in a similar manner there are some constructs within the brain that pre-determine the actualization of Factor H.

External influence on general mental ability.

General mental ability is more commonly considered to be less impacted by external influence. In his review of studies related to general intelligence and cognitive components Ceci (1991) found a low positive correlation between schooling and IQ, however he suggests that the influence of schooling on IQ test results are difficult to translate as there are many other factors that are difficult to control (such as maturation, affluence, and home environment). He does suggest that across cultures schooling does influence "perceptual skill acquisition and use." Other aspects influenced by schooling include concept formation, memory, and students modes of cognizing or understanding. Based on the previous definition of general mental ability, this suggests that GMA can be influenced by exogenous factors. In a study by Dreary, Spinath, and Bates (2006) findings suggest the family environment has a recognizable effect on children until they reach adolescence when this influence becomes minimal. Perhaps the ability to influence

then is evident in schooling, but dissipates with maturation. A concept related to GMA is executive function. Lezak (as cited in Floyd et al.., 2006) defines executive function as, "mental operations that promote the organization of thought and behavior. These operations include organization, mental flexibility, self-directed speech, planning, and problem solving," (p. 304). Friedman et al. (2006) suggested that there are components of executive function that are not directly related to GMA. These include inhibiting (ability to control automatic or dominant responses) and shifting (ability to switch between tasks; an important skill in nursing). If these are not directly related to GMA, then there is potential that these may be able to be influenced by external stimuli.

Critical Thinking

Within the nursing literature there is a consistent identification of thinking as an important skill of the nurse. Throughout the literature terms such as critical thinking, clinical reasoning, and clinical judgment have been used to describe the significance of how nursing knowledge, thought, and/or reasoning are used to reflect the general collection of abilities related to nursing specific thought patterns and processes.

Critical thinking has become a commonly used term across nursing education and practice. Critical thinking has been described as a "hallmark of the educated professional," (Lauder and James, 2001) and yet there is a lack of agreement on one accepted definition, (Fesler-Birch, 2005; Walsh & Seldomridge, 2005; Riddell, 2007; Edwards, 2007). The literature reflects definitions which include descriptions such as confidence, self reflection, inquisitiveness, logical reasoning, and reflection (Scheffer & Rubenfeld, 2000; Zori & Morrison, 2009). Ennis (1985) discussed critical thinking in terms of "reflective and reasonable thinking," (p. 45). In a Delphi study sponsored by the

American Philosophical Association(APA), the APA Delphi Panel described critical thinking as "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference," (as cited in Zori & Morrison, 2000, p. 76). Scheffer and Rubenfeld's study (2000) suggested that in addition to the definition provided by the APA study creativity and flexibility should be added as descriptors of critical thinking as it applies to nursing.

There are several tools used to measure the concept of critical thinking. The Watson-Glaser Critical Thinking Appraisal (WGCTA), The California Critical Thinking Skills Test (CCTST), and The California Critical Thinking Disposition Inventory (CCTDI) are the three most commonly used instruments for the measurement of critical thinking or one's disposition to think critically. Historically the WGCTA was one of the most frequently used in measuring critical thinking in nursing (Spelic, et al., 2001). Recent studies in health care and specifically nursing reflect a movement towards the use of the California Critical Thinking Skills Test although the WGCTA and CCTDI are still used. The Health Sciences Reasoning Test (HSRT) is less well known and is designed specifically to assess the critical thinking skills of health sciences students and professionals. The HSRT focuses on critical thinking questions in health sciences and clinical practice, and does not suggest the person being tested has specialized technical knowledge (Insight Assessment, 2008). The California Critical Thinking Disposition Inventory looks at the disposition of critical thinking. "A disposition is a cluster of preferences, attitudes, and intentions, plus a set of capabilities that allow the preferences to become realized in a particular way," (Tishman & Andrade, 2008). Colucciello (1997) developed the Model for Evaluation of Critical Thinking Skills in Baccalaureate Nursing

Students which included dimensions, variables, and outcomes of critical thinking. The Critical Thinking Model for Nursing Judgment suggests there are three levels of critical thinking: basic, complex, and commitment (Kataoka-Yahiro & Saylor, 1994).

In acknowledgment of the importance of critical thinking in nursing education it became an "explicit program outcome" of the National League for Nursing Accrediting Commission (Walsh & Seldomridge, 2005, p. 159) and a "required outcome measure in the evaluation and accreditation of baccalaureate and higher degree programs," of the American Association of Colleges of Nursing (McMullen & McMullen, 2007). Adams (1999) reviewed 20 research studies related to critical thinking in nursing students. Results across the studies showed mixed results related to whether nursing education significantly improved critical thinking in nursing students. These findings were consistent with previous integrative reviews by Beck et al. (1992) and Hickman (1993). Such findings raise questions not only about the ability of nursing education programs to develop/improve critical thinking in the student, but also questions related to how critical thinking is defined and measured.

If critical thinking is only a cognitive action, how do nurse managers and preceptors see this behavior and presume that the new graduate is demonstrating critical thinking? This suggests that critical thinking may not be the concept nurse managers and experienced RN preceptors were describing in the pilot study. In the pilot study conducted by this author several of the attributes initially identified and labeled as reflecting critical thinking appeared to reflect not only the thought processes and decision making related to the general patient data in isolation, but also reflected attention to the individual patient's circumstances. In re-examining these attributes in light of the

conceptual confusion around critical thinking they appeared to be related to one another and to reasoning processes. The focus of the literature review then turned to search for the more appropriate label for this concept.

Clinical Reasoning

As mentioned previously, critical thinking is very focused on rational decision making given a specific set of data (i.e. diagnosis, vital signs, laboratory results, etc.), but does not reflect the significance of the individual patient characteristics or circumstances or the nurse's engagement with the patient. The literature suggests that critical thinking is seen as contributing to clinical reasoning (Pesut & Herman, 1999; Facione & Facione, 2008). Pesut and Herman (1999) defined clinical reasoning as, "the reflective, concurrent, creative, and critical thinking embedded in nursing practice," (p. 4). They also describe the clinical reasoning process as supporting the ability to make clinical decisions to achieve the desired outcome. Their Outcome-Present State-Test model begins with the patient's story including the context surrounding the story. This information works as cues triggering logic based on knowledge the nurse possesses. The data is framed in terms of the present state of the patient and the desired outcome state. The nurse then tests possible responses. The most appropriate response is determined by the nurse's reflection on knowledge and experience. The decisions and actions that result from this clinical reasoning demonstrate clinical judgment. This supports Benner's work which suggests that a nurse's judgment is influenced by her/his knowledge of the patient and her/his patterns as well as the experiences of the nurse (Benner, et al., 1996).

Tanner (2006) described clinical reasoning similarly to Pesut and Herman while also including deliberate processes of idea generation, comparing alternatives to the

evidence and choosing the best option in order to support clinical judgment. She describes clinical judgment as determining appropriate actions based on the patient's needs and choosing to act (or not to act if deemed most appropriate) using current or more innovative approaches as required by the situation and the patient's response. Therefore, clinical reasoning is the process by which appropriate nursing actions are evaluated for implementation, and clinical judgment is the corresponding decision about which nursing actions to take or not to take. In the pilot study as nurse managers and experienced RN preceptors identified attributes that influence their perception of Factor H demonstrated in the new graduate nurse, they were describing behaviors reflective of the reasoning, given that reasoning is not "visible".

Clinical Judgment

Benner, Tanner, and Chesla (1996) discussed the concept of clinical judgment in terms beyond those of rational decision making processes. Rational decision making suggests the goal of weighing options and choosing the best option based on knowledge and/or theory alone. In describing the clinical judgment of the expert nurse they discussed how other aspects of reasoning and judgment develop from practice and experience. For the expert nurse there is an underlying foundation for seeking "what is good and right" for the patient (p. 5). This is reflective of the nurse's role as advocate for the patient and family. They described nurses who seek comfort and pain management for their patients and families and how these concerns influence the clinical judgments of these nurses. While the expert is able to integrate aspects of care in a meaningful way specific to the patient and/or family, Benner et al.. also discuss that the advanced beginner, or new graduate nurse, does not have this skill. The new graduate nurse has a focus on

"recognizing concrete manifestations of clinical signs and symptoms," (p. 51). It is not until the phase of the competent nurse 1 ½ to 2 years into practice that the nurse begins to gain the skills needed to alter routines or protocols to fit the patient or family circumstances specifically (Benner, et al., 1996).

These authors also discuss practical knowledge gained from experience as influencing clinical judgment. The expert nurse who has cared for numerous patients has developed a sense of how patients typically progress and what factors may impede progress. They are quick to recognize when these factors are present and do not require the conscious deliberation as to what these signs may be indicating. This ability to quickly identify issues that the less experienced nurse may miss is also reflective in what the authors described as intuition "born of experience" (p. 8). This intuition allows the expert nurse to be able to quickly respond to issues she/he identifies based on many previous similar experiences. The advanced beginner again has not yet developed this skill in that she/he has not had the extensive range of experiences from which to identify similarities and expected outcomes and progression. With experience the competent nurse is able to begin to recognize similarities to previous experiences and to develop the ability to anticipate potential patient needs and expected outcomes (Benner, et al., 1996).

The nurse's emotional engagement and response is also described as a factor contributing to clinical judgment. While logic often dictates that emotion is counterproductive in reasoning and decision making, in the clinical environment the emotional engagement of the nurse with the patient and family influences judgment. Rather than allowing emotion to cloud judgment, the expert nurse utilizes the emotion to enhance her/his ability to connect to the patient and family and their situation. This

engagement allows the nurse to be able to support the patient and family through caring and compassionate response and judgment. Understanding the patient's story and patterns of responses is a final aspect described by Benner, Tanner, and Chesla (1996) as influencing clinical judgment in the expert nurse. What appears logical or reasonable to the physician or nurse from a scientific perspective may not fit for the patient given his/her values, beliefs, roles in life, or culture. While one option is clearly best for one patient, it may not work at all in the context of a patient with a very similar medical diagnosis.

All these pieces help demonstrate the complexity of clinical judgment in the healthcare environment. Emotions may in fact impede the work and reasoning of the advanced beginner. This nurse experiences anxiety related to their level of knowledge, experience, and ability to manage complex situations. This anxiety can hinder her/his ability to reason and determine best actions to take or to omit. The competent nurse has developed an ability to use emotion as a way of assessing and anticipating patient needs. The anxiety experienced serves as a way of alerting her/him to potential complications or newly identified patient needs (Benner, et al., 1996).

In a review of 191 studies Tanner (2006) identified five conclusions about clinical judgment:

> 1. Clinical judgments are more influenced by what nurses bring to the situation than the objective data about the situation at hand;
> 2. Sound clinical judgment rests to some degree on knowing the patient and his or her typical pattern of responses, as well as an engagement with the patient and his or her concerns;
> 3. Clinical judgments are influenced by the context in which the situation occurs and the culture of the nursing care unit;
> 4. Nurses use a variety of reasoning patterns alone or in combination; and
> 5. Reflection on practice is often triggered by a breakdown in clinical judgment and is critical for the development of clinical knowledge and improvement in clinical reasoning.
>
> (p. 204)

From this work Tanner developed her Clinical Judgment Model which consists of four phases; noticing, interpreting, responding, and reflecting. She identified the first three phases as the skills related to thinking-in-action and the fourth as thinking-on-action thereby reflecting the nurse's response as influenced by her/his own experiences as well as the context of the patient situation. Benner's description of the new graduate nurse's focus on "concrete manifestations" rather than the integration of these signs and symptoms into the patient's story (living arrangements, values, beliefs, knowledge, culture, and etc.), suggests the evidence related to Factor H which the nurse managers and experienced RN preceptors were describing was in fact this higher level of reasoning and action. The new graduate nurse who demonstrates this capacity would approach the care of patients and families much differently than those new graduates not possessing this attribute. This would certainly be a reflection of a new graduate nurses who have a higher understanding of professional nursing practice. In the words of the nurse managers and experienced preceptors, "They get it."

Medicine has also been focused on identifying ways to evaluate clinical judgment in physician and/or medical students. Several studies reflect the use of the Script Concordance Test with support to its reliability and validity in measuring decision making in medical students (Lubarsky, et al., 2009; Gagnon, et al., 2006; Meterissian, et al., 2007; Carriere, et al., 2009). The Script Concordance Test is designed to investigate whether the knowledge of the examinee is able to be adapted to clinical actions. The responses of examinees are compared with those from a panel of experts for the degree of concordance between the two. No literature was found to demonstrate the use of this test in nursing at this point.

Although the nursing literature related to teaching and developing clinical judgment in the nurse and in particular in the nursing student continues to grow, reliable and valid tools to measure clinical judgment are lacking. Lasater (2007) developed a rubric for use with clinical simulation based on Tanner's Clinical Judgment Model. Lasater's tool, the Lasater Clinical Judgment in Simulation Rubric is a scale designed with four aspects, noticing, interpreting, responding, and reflecting. Each aspect is defined by dimensions of behaviors associated with the dimension. Each dimension is scored on a scale with clearly defined behaviors with a range of scores from exemplary to beginning. Gubrud-Howe (2008) conducted psychometric testing of this tool with nursing students in a clinical simulation setting. Reliability was supported by an alpha coefficient of .87. Cronbach coefficient alphas of .886 for the Noticing aspect, .931 for Interpreting, .887 for Responding and .914 for Reflecting of the rubric supported acceptable internal consistency. Inter-rater reliability at post-test was 96% among raters. This tool is also being used by some organizations as a part of new nurse orientation. In some instances it

is being used in conjunction with case studies rather than simulation although this application has not been psychometrically tested at this point. Those using it for this purpose report it works well in this application (Lasater, personal communication, October, 12, 2009). This tool will be used to evaluate clinical judgment in this study.

Summary

Although Factor H is a newly described phenomenon, nursing literature demonstrates that for decades nursing scholars have recognized the need to better understand how nurses gain the knowledge needed to think and practice in a professional, expert manner (Benner, 1984; Benner, et al., 1996; Pesut & Herman, 1999). In a pilot study conducted by this author nurse managers and experienced RN preceptors identified attributes which influenced their perceptions of the presence of Factor H in new graduate nurses. These attributes reflected three recurring themes: personality traits, general mental ability, and clinical judgment. There is extensive literature surrounding personality traits (particularly the Five Factor Model of personality) and general mental ability and how these concepts influence work performance, education, and training. While this literature is not specific to nursing, such issues are translatable into nursing work. The nursing literature is extensive related to nursing knowledge and reasoning. The increasing focus on clinical judgment is a good fit in support of the study of Factor H in the new graduate nurse. Although there is a gap in the literature related to Factor H as specifically described (given it is a newly described phenomenon), there is ample literature to support the concepts hypothesized to be the key concepts within this phenomenon and to support the importance of this study.

3. Methodology

Design

This was a study designed to test a new instrument for measuring Factor H, the Sims Factor H Potential Scale (SFHAS). The process used was a five step process modeled after DeVilles (2003) guidelines for scale development. The first step included development of a pool of items. The second step required content validity verification through the review of the item pool by content experts. Pre-testing through interviews with a participant pool that were similar to the targeted population was the third step. The fourth step was instrument testing, and the final step was the analysis of data generated in the instrument testing.

Step 1- Scale development

Items for the SFHAS were generated through the analysis of data generated in a previous pilot study conducted by this researcher. The previous study produced lists of attributes identified by nurse managers and experienced Registered Nurse preceptors as influencing their perception of Factor H in the new graduate nurse (see Table 1). An extensive literature review related to success in the workplace and the transition of the new graduate nurse into practice further supported the attributes identified. From this list of 48 attributes, three categories emerged grouping similar attributes together. A review of tools used to measure general mental ability, personality traits, and clinical judgment were reviewed along with literature which reflected key components of these attributes to drive the development of the initial 50 item pool. Since the tools and literature related to general mental ability and personality are not focused on a nursing perspective content was adapted to reflect nursing skills, knowledge, and accountabilities. Clinical judgment

was easily transitioned into nursing reflective questions as the focus of the tool and the literature is on nursing professional practice development.

Step 2- Content validity

Content validity was tested by utilizing a panel of experts in the areas of nursing work in acute care settings, transition of the new graduate nurse into practice, quality outcomes measures, and nursing work complexity. This group of experts includes one doctorally prepared nurse educator who has experience both as a clinical nurse specialist and as a nurse manager. This nurse's research is focused on nursing work complexity. She has also studied work behaviors and decision making, as well as near misses in the new graduate nurse population. A second expert is also doctorally prepared and has extensive experience in nursing education in the acute care setting. The other two experts are masters prepared in nursing administration. One is board certified as an advanced nursing executive. The other is also a certified nurse executive. Both function as Chief Nursing Officers in hospitals in southern Indiana. All four experts were contacted personally and asked if they were willing to participate as expert reviewers.

Step 3- Pre-testing

Institutional Review Board (IRB) approval was sought following endorsement of the study by this researcher's dissertation committee. Approval was acquired from IRB through Indiana University Purdue University at Indianapolis (IUPUI) as well as recruitment sites in south central Indiana. Following IRB approval participants were recruited through e-mails to nursing students graduating from Associate of Science in Nursing (ASN) and Bachelor of Science in Nursing (BSN) programs. To test face validity a convenience sample of 5 new graduate nurses was recruited from a Magnet hospital in

south central Indiana. Participants who volunteered were interviewed individually by the primary researcher. The focus of the interviews was on participant responses to understandability of each item and relevance to the transition of the new graduate nurse into RN practice. Also participants were asked whether the items within the pool reflected factors they felt to be important or concerning as they transition into their first RN role. They were asked to identify any other factors they perceived as important in this transition which they felt were not present in the tool. To further test face validity three nurse managers and three experienced RN preceptors from acute care environments also reviewed questions for relevance to Factor H in the new graduate nurse.

The feedback from new graduate nurses, nurse managers, and experienced RN preceptors was used to revise items which were found to be confusing or unclear. No issues were identified by participants as important, but missing in the draft tool. As the pool of items was finalized time required for each participant to complete the instrument was also considered.

Step 4- Instrument testing

DeVellis (2003) suggests a sample of 5-10 subjects per item is adequate. This instrument was narrowed to twenty items through the use of content experts who verified face validity (see Appendix B). It was then tested in 101 new graduate nurses graduating from one of three Registered Nurse programs in south central Indiana. These new graduate nurses were within three months of graduation (prior to or after). They had not worked previously in an LPN role. Any new graduates who participated in the pre-testing step were excluded from the testing of the final instrument. Demographic information including age, gender, basic degree, previous clinical and non-clinical experience in a

hospital, self reported ethnicity, and anticipated graduation date were collected on all participants. This information supports use and generalizability across these categories of new graduates.

Instrumentation

Content validity measures

The content validity evaluation tool was developed by the primary investigator. The cover page included directions for completing the tool as well as conceptual definitions of Factor H, personality traits, general mental ability, and clinical judgment (see Appendix B). The directions contained a description of the process of scoring. The item pool generated for the SFHAS consisted of 50 items which were included in the content validity evaluation tool. Each item was to be categorized reflective of the components of Factor H; personality traits, general mental ability, or clinical judgment. The item then was rated on the relevance to the category identified; 1= No relevance, 2=Slightly relevant/need for major revision, 3=Moderately relevant/need of minor revision, or 4=Very relevant and succinct. There was also a column for any comments and an area at the end that allowed respondents to add any items which they felt were not addressed in the pool.

Demographic form

The demographic form which was utilized was developed by the primary investigator (see Appendix F). This form was also the cover page of the SFHAS and included the conceptual definition of Factor H, purpose of the study, and directions. Age in years and gender were the first questions which were both open ended. Race offered options of Caucasian/white, Black/African American, Hispanic and Other (with a space

left for description). Date of Graduation from RN Program was requested as mm/yyyy. This was to assist with sorting by semester of graduation. Nursing degree options were listed as ASN/AND, BSN, or Diploma. Although the sample did not include a diploma program, one of the schools' IRB required inclusion of this degree. Years experience working in a clinical position (defined as CNA, student, tech) in a hospital prior to graduation as well as a separate question of years experience working in a non-clinical position in a hospital prior to graduation were the final two demographic questions. These were both open ended.

Criterion validity measures

Personality measures

The NEO-PI-R is the most commonly used measure for the FFP reflected in the literature and measures the interpersonal, motivational, emotional, and attitudinal styles of adults and adolescents. The level or amount present of the two other attributes (GMA and clinical judgment), are not measured in this tool. It consists of 240 personality items and 3 validity items. The NEO PI-R was designed to provide a general description of normal personality relevant to clinical, counseling, and educational situations. NEO PI-R items and materials were designed to be easily read and understood. The five domains (factors) measured by the NEO PI-R provide a general description of personality, while the facet scales allow more detailed analysis" (Sigma Assessment Systems, 2007). This tool has been used extensively across multiple disciplines. Internal consistency coefficients range from .86 to .95 for factor scales and from .56 to .90 for facet scales. This tool, however, takes on average approximately 35-45 minutes to complete. Given

the need for multiple measures there was concern related to respondent burden with this tool.

A shorter version of the NEO-PI-R is the NEO-FFI. This tool has also been shown to demonstrate evidence of reliability and validity with correlations of .77-.92 for the NEO-FFI with the NEO PI-R domain scales. Internal consistency values range from .68 to .86 for the NEO-FFI (Costa & McCrae, 2005). Other studies have been able to support the evidence of reliability and validity of this tool (Koerner, et al., 2008; Aluja, et al., 2009). This NEO-FFI (see Appendix G) consists of 60 items which are rated on a 5-point likert-type scale ranging from Strongly Disagrees to Strongly Agrees and takes on average approximately 10-15 minutes to complete (Costa & McCrae, 2005). This scale can be done online or on paper as some participants preferred. Given the comparable results and evidence of reliability and validity with less burden to the participant, it was used to measure the personality attributes of Factor H in order to analyze criterion related validity of the SFHAS for these attributes. Given the need to measure not only the presence of attributes such as components of GMA and clinical judgment but also the level of the attribute present, it is not a comprehensive tool for this phenomenon.

General mental ability.

General mental ability, general capability to engage in reasoning, planning, problem solving, abstract thinking, learning quickly and from experience, and comprehending complex reasoning (Lubinski, 2004) is most commonly measured by the Wechsler Adult Intelligence Scale (WAIS) (Dreary, et al., 2006). The WAIS consists of six verbal subtests and five performance subtests. “The reliability coefficients: (internal consistency) are .93 for the Performance IQ averaged across all age groups and .97 for

the Verbal IQ, with an r of .97 for the full scale," (Wechsler Adult Intelligence Scale website, 2004). This instrument takes approximately 60-90 minutes to complete (The Psychological Corporation, 2009).

A shortened version of this tool, the Wechsler Abbreviated Scale of Intelligence (WASI) which takes 30-60 minutes to complete is also available. This scale consists of four subtests (Vocabulary, Block Design, Similarities, and Matrix Reasoning) and yields scores for full scale IQ, performance IQ, and Verbal IQ. The WASI has also been shown to demonstrate evidence of high correlation with the WAIS-III, the most current version of the WASI and evidence of internal consistency and test-re-test reliabilities for all three measures (Ryan, et al., 2003; Axelrod, 2002). Average reliability coefficient has been reported as FSIQ .96-.98, and test-retest reliability: FSIQ .88-.92 (The Psychological Corporation, 2009). The time frame of 30-60 minutes is still an issue related to participant burden given the other tools to be completed.

The manual also offers the option of using only the Vocabulary and Matrix Reasoning subtests. These two subtests will yield only the FSIQ. The time needed for these is 15-30 minutes which was a much more reasonable time demand. The Vocabulary subtest consists of 34 items (for the age group 17-89 year olds which encompassed all participants). Each Item is a single word which the participant must define. Each answer is scored on a 0-2 scoring system in which 2 is the highest score. The scoring is very clearly defined for each word and requires close review of acceptable definition parameters. The Matrix Reasoning subtest consists of pages (29 for 12-44 year olds, 28 for 45-79 year olds) on which there are sets of pictures or symbols with one missing picture or symbol. At the bottom of the page are five corresponding pictures or symbols

from which to choose to fill in the missing portion. These get increasingly more difficult as the pages progress. Scoring is either 1 (correct) or 0 (incorrect). Scoring requires totaling scores from each section and correlating the score on the Vocabulary and the Matrix Reasoning sections and cross referencing participant age. The scoring yields FSIQ. Given the strong correlations reported between the WASI and the WAIS-III and to reduce respondent burden, the WASI (subtests of Vocabulary and Matrix Reasoning) was used to evaluate criterion related validity of the SFHAS related to general mental ability (see Appendix H).

Although the literature suggests this test has evidence of reliability and validity, it is not focused on all the aspects of Factor H. Although one could suggest that having a high level of general mental ability would support the demonstration of Factor H, there is potential to have high GMA and still not demonstrate Factor H. Therefore, this test is also not comprehensive for measuring Factor H. It was used to measure general mental ability in order to analyze criterion related validity of the SFHAS related to these attributes.

Clinical judgment.

There is currently no widely accepted tool utilized to measure clinical judgment. Schools of medicine have been studying the use of the Script Concordance Test to assess clinical decision making and clinical judgment in medical students. Although to date there is support for the validity and reliability of this test in this population (Lubarsky, et al., 2009; Gagnon, et al., 2006; Meterissian, et al., 2007; Carriere, et al., 2009), this tool's use has been focused on diagnosing and has not been integrated into the evaluation of nursing clinical judgment. As noted previously, the Lasater Clinical Judgment in Simulation Rubric (LCJSR) is a rubric designed to measure development of clinical

judgment in the student nurse in clinical simulation. The scale was designed with four aspects, noticing, interpreting, responding, and reflecting. There are 11 dimensions which further define behaviors associated with clinical judgment. Each dimension is scored on a scale with clearly defined behaviors with a range of scores from1-4 reflecting beginning to exemplary clinical judgment. Psychometric testing of this tool with five nursing students in a clinical simulation setting evaluated by three raters using the LCJR resulted in an alpha coefficient of .87 reflecting acceptable inter-rater agreement (Gubrud-Howe, 2008). Cronbach coefficient alphas of .886 for the Noticing aspect, .931 for Interpreting, .887 for Responding and .914 for Reflecting of the rubric supported acceptable internal consistency reliability (Gubrud-Howe, 2008). This tool was used to evaluate criterion related validity of the SFHAS related to clinical judgment utilizing an unfolding evidence-based case study (see Appendix I). The case study is reflective of care knowledge, reasoning, and judgment expected of the advanced beginner level new graduate nurse. Individually these are instruments with extensive use with successful results, yet none of them measures all the attributes identified as contributing to the presence of Factor H in the new graduate nurse.

Twenty-item Factor H measure.

The SFHAS was used to measure Factor H in the new graduate nurse. It consisted of twenty items rated on a 5-point likert-type scale ranging from Strongly Disagree (coded as "1") to Strongly Agree (coded as "5") corresponding boxes in which the participant is requested to place an "X" in the one which best describes her/his thoughts and feelings as she/he begins the role of new graduate Registered Nurse (see Appendix F). The items were generated from the literature review related to personality traits,

general mental ability, and clinical judgment and in alignment with the results of the previous pilot study results.

Procedure

Content validity

Content experts were contacted via electronic mail to request their participation. A cover letter describing the purpose of the study, the background and definition of Factor H, specific aims and hypotheses to be tested, was sent. Upon agreement to participate the SFHAS content validity grid was sent along with instructions for scoring. After identifying the category to which they felt the item related (personality traits, general mental ability, or clinical judgment), experts were asked to rate each item for relevance to the conceptual definition using 1= No relevance, 2=Slightly relevant/need for major revision, 3=Moderately relevant/need of minor revision, or 4=Very relevant and succinct. They were also asked to identify any aspects they perceive to contribute to this phenomenon in the new graduate nurse which are not addressed in this tool. Experts were asked to submit the scoring electronically within two weeks. These responses were used to calculate a content validity index for the entire instrument as well as each item utilizing the procedure suggested by Lynn (1986). A content validity index of .83 was required to indicate the measure was valid. A content validity index of less than .83 on a majority of the individual items or need for extensive revision of multiple individual items would have required the process to be repeated.

Pre-testing for clarity and burden

Pre-testing was completed using a convenience sample of five new graduate nurses recruited from a Magnet hospital in south central Indiana. The participants were

identified by the nurse manager of the resource pool in which most new graduate nurses begin their role in this organization. The nurse manager asked the identified nurses if they would be willing to participate and all agreed. Participants who volunteered were interviewed by the primary researcher. The focus of the interviews was on participant responses to understandability of each item and relevance to the transition of the new graduate nurse into RN practice. Each item was read aloud to the participant and the participant was asked 1) if the items were clear and easy to understand, 2) what they perceived it was asking, 3) how relevant they thought it was to their transition into practice. The tool used by content experts for content validity was adapted to a "Y" for Yes and "N" for No scale to track responses related to relevance and comments on clarity. Notes related to clarity were used in item revisions. They were also asked to identify any other factors they perceived as important in this transition which they felt were not present in the tool. To further test face validity three nurse managers and three experienced RN preceptors from acute care environments also reviewed questions for relevance to Factor H in the new graduate nurse. This again was a convenience sample from the same facility. The three nurse managers identified were experienced nurse managers (greater than five years in their roles) and managed medical/surgical units in which new graduate nurses often work. The nurse managers were asked to identify one experienced RN preceptor to participate. The nurse managers assured the preceptor was willing before forwarding the name to me. All nurse managers and preceptors requested to receive the tool by e-mail for review at their convenience. All returned the tool with the two week time frame requested.

Testing the SFHAS.

This study was an exempt study as it was considered minimal risk to participants. Approval was through Indiana University Purdue University Indianapolis IRB and Institutional Review Boards at the individual sites. After approval was received, potential participants were identified through the support of nursing faculty at the individual sites. Faculty posted announcements related to recruitment for the study in online courses and/or forwarded e-mails from the investigator to the students. Faculty in schools from which participants were recruited, were very supportive. Faculty from two other schools was contacted, and after multiple e-mails and phone calls, they determined they did not have students who would be interested. Participants received information via e-mail and/or announcements in online courses detailing times and locations for testing. These times were flexible and were set up for the participants' convenience. All participants were informed of the voluntary nature of the study and completed documentation of informed consent. All participants were to complete the SFHAS, the NEO-FFI, the WASI, and complete a case study which was evaluated using the LCJSR. The NEO-FFI was completed online. The WASI was completed on paper as was the unfolding case study to be scored by the LCJSR. The initial SFHAS was completed on paper. All participants were given a "thank you" card which contained their $20 compensation. The note also reminded them that they would receive an e-mail with the tool attached in two weeks and reinforced the importance of returning it in a timely manner. The SFHAS was also sent out via e-mail 2 weeks after the initial testing in order to re-test the scale electronically and respondents were asked to return it via e-mail. Three did choose to print it out, complete it, and return it via mail. Sixty-seven percent of participants chose

to complete the second SFHAS. The entire initial testing took most participants approximately one hour. The participant who completed it most quickly completed it in 45 minutes while the longest time to complete was one hour 40 minutes.

Data Analysis

All data entered into SPSS statistical software program was evaluated for potential error prior to analysis. Data cleaning procedures included visual comparison of all entered values to the recorded data, assessment of outliers, and review for wild codes Polit & Beck, 2004). Data were analyzed for each specific aim and hypothesis as described below.

Specific Aim 1: Develop the Sims Factor H Assessment Scale (SFHAS) and evaluate content validity of individual items.

Hypothesis 1a: Content validity will be analyzed utilizing the Content Validity Index (CVI) with the five content experts. Content will be rated on a four point scale (four representing highly relevant and succinct) related to representativeness and relevance to highly successful new graduate nurse practice (Factor H). Interrater agreement (IR) for relevance and representativeness was evaluated across content experts. Lynn (1986) suggests a CVI of > .83. Items not meeting this standard required revision or were evaluated for deletion.

Hypothesis 1b: Evidence suggesting face validity for the SFHAS related to relevance to the transition of the new graduate nurse into practice and the demonstration of Factor H was demonstrated using a sample of 5 new graduate nurses, three nurse managers, and three experienced RN preceptors.

Specific Aim 2: Demonstrate evidence of construct validity of SFHAS.

Hypothesis 2a: The Kaiser-Meyer-Olkin measure and the Bartlett Test of Sphericity was used to evaluate appropriateness of factor analysis.

Hypothesis 2b: Given the Kaiser-Meyer-Olkin measure and the Bartlett Test of Sphericity demonstrated factor analysis was appropriate, an exploratory factor analysis was conducted to determine the structure of the concept of Factor H. It was anticipated that the SFHAS would have subscales reflective of the concepts contributing to Factor H. For this reason Principle Axis Factoring with Varimax rotation was used. Eigenvalues greater than 1.0 in combination with the scree test were used to evaluate subsets present. Subsets identified were to be labeled as groupings suggested. These would be the subsets used during the reliability analysis. Theoretically, it was anticipated that the subsets would group into three groups reflecting personality, general mental ability, and clinical judgment as is demonstrated in the model.

Specific Aim 3: Demonstration of evidence of criterion-related validity for SFHAS.

Hypothesis 3: Although there was no instrument that evaluates Factor H, evidence of criterion-related validity was to be demonstrated using a combination of scales for FFP, GMA, and clinical reasoning. Strength of correlations between SFHAS and NEO-PI-R, WAIS-R, and the Lasater Clinical Judgment in Simulation Rubric (LCJSR) were anticipated to demonstrate evidence of criterion-related validity. SPSS was used to evaluate correlations. Evidence of criterion-related validity was demonstrated utilizing a scatterplot and by a Correlation coefficient of at least .30-.69 which will suggest a moderate relationship (Polit & Beck, 2004).

Specific Aim 4: The SFHAS was expected to demonstrate evidence of internal consistency reliability.

Hypothesis 4a: A one-sample Kolmogorov-Smirnov Test was anticipated to demonstrate normality with a result that were not significant at the $p<.001$ (Pallant, 2007).

Hypothesis 4b: Evidence of internal consistency reliability was expected to be demonstrated utilizing SPSS. The subscales identified during the factor analysis were to be evaluated related to inter-item correlations, item-total correlations, and Cronbach's coefficient correlation as suggested by Ferketich (1991). These correlations were to demonstrate how items relate to each other and to the overall subset. Inter-item correlations with a value of <.30 were evaluated for deletion, and those with values >.70 were evaluated for redundancy. Before items were deleted the Cronbach's alpha if item were deleted value should demonstrate an increase by deleting the item. Otherwise this deletion was given further consideration for revision rather than deletion. Consideration also had to be given to the significance of the item to the overall concept before deleting. Cronbach's correlation of $\geq$.70 were acceptable as it increases as inter-item correlation increases and decreases with multidimensionality, (Netemeyer, 2003).

Specific Aim 5: The SFHAS was expected to demonstrate evidence of test re-test reliability.

Hypothesis 5: Evidence of test re-test reliability was demonstrated by administering the SFHAS twice to the same participants two weeks apart as recommended by Yen and Lo (2002). The results were analyzed utilizing the Interclass Correlation Coefficient. Results from the ICC reflected strength of stability of the tool: 0-.20 suggests weak

stability, .21-.40 suggests fair, .41-.60 suggests moderate, .61-.80 suggests substantial, .81-1.0 suggest near perfect stability (Landis & Koch, 1977).

4. Results

This chapter discusses the results for the psychometric testing of the SFHAS. It will begin with data cleaning procedures used to assure data integrity and will continue through analysis of results. As noted previously, participants completed three established scales along with the SFHAS to demonstrate criterion validity, all of which were included in the analysis process.

Data Cleaning Procedures

All data were collected in person with the exception of the SFHAS re-test which was collected via e-mail. All materials were coded with the subject identification number and were entered into SPSS Version 19 statistical software program. All data were double checked for accuracy and completeness. Data cleaning procedures included visual comparison of all entered values to the recorded data, assessment of outliers, and review for wild codes (Polit & Beck, 2004). Missing data was minimal. One participant had previously worked as an assistant to a mental health professional, and as part of that role had administered the WASI. For this reason she did not complete this tool. Two participants had other appointments and ran out of time before completing all tools. One did not complete the LCJSR and the other did not complete the NEO-FFI. All participants completed the SFHAS and 67 also completed the SFHAS as a re-test.

The Lasater Clinical Judgment in Simulation Rubric (LCJSR) was designed to be used in a clinical simulation, but (with the author's permission) the tool was used with an evidence based unfolding case study. For this reason all responses were scored by the primary researcher as well as a Master's prepared nurse educator independently.

Discrepancies were reviewed together and decisions made consistent with previous scoring. Minimal discrepancies were identified, and all were resolved.

Sample

In order to recruit 100 new graduate nurses, faculty for final semester courses were contacted at all participating schools of nursing. All were willing to post recruitment announcements in the online portion of their courses. Initially specific dates and times were identified for each individual participant. Recruitment was very slow. The primary researcher contacted the faculty and requested any suggestions to enhance recruitment. Suggestions included scheduling blocks of time when students could come in which were in alignment with class or school activities (ex. before or after class or the day of class pictures) and bringing food. Open sessions including food were advertised in the online portion of final semester courses. This worked well for the two BSN programs. Faculty from the ASN program personally invited students and forwarded request letters and announcements from the primary researcher out to her senior students. A total of approximately 400 students were targeted for recruitment and 101 participated. All students who agreed to participate met participation criteria, therefore none were excluded.

New graduate nurse age, previous clinical experience, and non-clinical experience are displayed in Table 3. New graduate nurses' ages ranged from 21 to 50 years and the mean age was 24.73 years. Although previous clinical experience ranged from 0 to 6.5 years and previous non-clinical experience ranged from 0 to 12 years the means were 1.65 years and 1.56 years respectively. The range of years of experience is reflective of

the range of ages such that some have had much more opportunity for clinical and/or non-clinical experience.

Table 3

New Graduate Nurse Age and Years of Clinical and Non-Clinical Experience

Characteristics	*n*	Mean (SD)	Median	Range
Age	101	24.73 (5.39)	23	21-50
Previous Clinical Experience (years)	101	1.65 (1.68)	1.00	0-6.5
Previous Non-Clinical Experience (years)	101	1.56 (2.55)	1.56	0-12

New graduate nurse's school, semester graduating, gender, self described ethnicity, and graduation year are displayed in Table 4. School "A" has a large BSN program graduating approximately 100 students spring and fall semesters with approximately 40 graduating in summer session. School "B" is a second site of the same university as school "A". This is also a BSN program, but graduates students only in spring with a graduating class size of approximately 50 students. School "C" has a smaller ASN program which graduates approximately 55 students spring and fall. Participants graduated between summer 2010 and spring 2011. As is noted schools "A" and "B" had the highest percentage of participants, however school "A" was recruited from for 3 semesters. School "B" was only recruited from for one semester, and school "C" was recruited from for 2 semesters as these were the only semesters eligible students were graduating.

Consistent with the graduation patterns of the three schools the greatest percentage of participants (59.4%) were recruited during the spring semester, the time when the most eligible students were graduating with 42.6% during fall, and 5.9% during summer semester. Of the sample 41.6% graduated in 2010 leaving 58.4% graduating in 2011. The majority (94.1%) were in BSN programs. Across all schools and semesters only one male new graduate nurse participated. Participants self reported ethnicity. The majority of participants described themselves as Caucasian/white (83.2%) while 12.8% described themselves as Caucasian/African American. None described themselves as Hispanic.

Table 4

Participant Ethnicity, Gender, and Program Descriptions

Characteristics	*n*	*f* (%)
School	101	
"A"		52 (51.5)
"B"		43 (42.6)
"C"		6 (5.9)
Semester	101	
Spring		60 (59.4)
Summer		6 (5.9)
Fall		35 (34.7)
Gender	101	
Male		1 (1)
Female		100 (99)
Ethnicity	101	
Caucasian/white		84 (83.2)
African American		2 (2.0)
Hispanic		0 (0)
Caucasian/African American		13 (12.8)
Asian/Caucasian		1 (1.0)
Other		1 (1.0)
Graduation Year	101	
2010		42 (41.6)
2011		59 (58.4)
Degree	101	
ASN		6 (5.9)
BSN		95 (94.1)

The last section of this chapter discusses the research findings as they relate to the specific aims and hypotheses.

Data Analysis

After conscientious entry of the data analysis was initiated. The research findings associated with this analysis are presented next with a focus on the specific aims and hypotheses.

Specific Aims and Hypotheses

***Specific Aim 1*:** Develop the Sims Factor H Assessment Scale (SFHAS) and evaluate content validity of individual items.

***Hypothesis 1a*:** Content validity will be analyzed utilizing the Content Validity Index (CVI) with the five content experts. Content will be rated on a four point scale (four representing highly relevant and succinct) related to representativeness and relevance to highly successful new graduate nurse practice (Factor H). Interrater agreement (IR) for relevance and representativeness will be evaluated across content experts. Lynn (1986) suggests a CVI of >.83. Items not meeting this standard will require revision or will be considered for deletion.

Hypothesis 1a was met. An initial pool of 50 items was generated based on the literature review described in Chapter 2 and the previous pilot study results. These items reflected general mental ability, personality traits, and clinical judgment. Four content experts were contacted personally to request participation in content validity review. All four agreed and were sent a cover letter describing the content validity grid (Appendix B) and its use and conceptual definitions needed to complete the tool. In the same e-mail was the content validity grid with the pool of 50 items. The instructions asked that the expert first identify to which subcategory of Factor H the item belonged. They were then to rate each item on a 1-4 scale describing level of relevance to the identified subcategory of Factor H. All four experts completed and returned the tool. Using Lynn's guideline of CVI >.83 with only four experts required that only those items agreed upon by all four experts would meet these criteria. This resulted in 21 items being deleted and the remaining 29 demonstrating content validity. After the revisions generated by content and

face validity, the items remaining were primarily related to personality. Only one item related to general mental ability and two items related to clinical judgment remained. Feedback was also received regarding wording of some questions and revisions were made to enhance clarity.

***Hypothesis 1b*:** Evidence suggesting face validity for the SFHAS related to relevance to the transition of the new graduate nurse into practice and the demonstration of Factor H will be demonstrated using a sample of five new graduate nurses, three nurse managers, and three experienced RN preceptors.

Hypothesis 1b was met. This group was a convenience sample from a not-for-profit Magnet hospital in southeastern Indiana. The five new graduate nurses were interviewed in person to discuss each of the initial pool of 50 items. An e-mail sent to the three nurse managers and three experienced RN preceptors requesting a time to meet to conduct an in person review of the tool and offering an alternative of receiving the face validity tool via e-mail to complete and return. All requested the tool be sent via e-mail for them to complete when convenient. The tool, along with instructions for completion, was sent. Response rate was 100%. The responses of the new graduate nurses, experienced RN preceptors, and the nurse managers were added to the content validity grid results from the four experts to evaluate the remaining 29 items. For those items which generated disagreement from 2 or more nurse managers and/or experienced RN preceptors were also deleted. Feedback from the new graduate nurses was primarily around clarity of the question. For those items which were approved by the experts, nurse managers, and experienced RN preceptors, but which were not clear to the new graduate nurses revisions were made to enhance clarity. The items were maintained.

***Specific Aim 2*:** Demonstrate evidence of construct validity of SFHAS

Hypothesis 2a: The Kaiser-Meyer-Olkin (KMO) measure and the Bartlett's Test of Sphericity will be used to evaluate appropriateness of factor analysis.

Hypothesis 2a was met. Initial analysis began with evaluation of construct validity. The result for Kaiser-Meyer-Olkin was .69 which is low but acceptable as Tabachnick and Fidell (2007) recommend a minimum of .6. A value of .8-.9 is preferred, however. The Bartlett's Test of Sphericity was significant at .000. These results suggested factor analysis was appropriate.

When an exploratory factor analysis was conducted the results based on Eigen values greater than 1.0 seven factors should be extracted. The scree plot appeared to reflect a similar solution; however it could also be interpreted to suggest that the data represented a single factor. Principle axis factoring with Varimax rotation produced very low loadings (<.30) on the majority of items suggesting lack of correlation of items with the seven factors. Results of a study conducted by Zwick and Velicer (as cited in Knapp & Brown, 1995) suggested that using eigen values greater than one alone can lead to extraction of too many factors. In analyzing the items grouped within the seven factors there were no common themes to suggest subcategories. In review of the SFHAS final tool after the revisions generated by content and face validity, the items remaining were primarily related to personality. Only one item related to general mental ability and two items related to clinical judgment remained. All three of these items showed poor performance related to low loadings on the one factor. This suggested that the factor was in fact personality. These three items were removed from the scoring along with four others with loadings less than .30. Three other items demonstrating floor effects greater

than 75% were also removed leaving a ten item tool for analysis. With the revision of the SFHAS to a ten item tool focusing on nursing personality, KMO result was .76 which is acceptable. The Bartlett's Test of Sphericity remained at .000 demonstrating statistical significance needed for factor analysis.

***Hypothesis 2b*:** Given the Kaiser-Meyer-Olkin measure and the Bartlett Test of Sphericity demonstrate factor analysis is appropriate, an exploratory factor analysis will be conducted to determine the structure of the concept of Factor H. It is anticipated that the SFHAS will have subscales reflective of the proposed concepts contributing to Factor H. For this reason Principle Axis Factoring with Varimax rotation will be used. Eigenvalues greater than 1.0 in combination with the scree test will be used to evaluate subsets present. Subsets identified will be labeled as groupings suggest. These will be the subsets used during the reliability analysis. Theoretically, it is anticipated that the subsets would group into three groups reflecting personality, general mental ability, and clinical judgment as is demonstrated in the model.

Hypothesis 2b was not met. It was hypothesized that three subscales would be generated reflective of general mental ability, clinical judgment, and personality supporting the proposed conceptual model of Factor H. As noted previously, no subscales were identified for this tool. Principle axis factoring with Varimax rotation produced very low loadings (<.30) on the majority of items suggesting lack of correlation of items with the seven factors. When the items were forced to load to one factor, loadings ranged from .37 to .62 suggesting that this one factor approach supported construct validity. In review of the items remaining after the revisions generated by content and face validity, the

items remaining were primarily related to personality. Only one item related to general mental ability and two items related to clinical judgment remained. All of these items showed poor performance related to low loadings on the one factor. These three items were removed from the scoring along with four others with loadings less than .30. Three other items demonstrating floor effects greater than 75% were also removed leaving a ten item tool for analysis. Table 5 depicts the loadings and Eigen values for the revised tool.

Table 5

Factor Analysis for SFHAS

SFHAS	Factor 1
When I am working I am very focused on what I am doing	.56
I take constructive criticism well	.60
When I don't understand something I look for resources	.53
I value punctuality	.45
I work very hard to achieve my goals	.58
I am consistently honest	.67
I can learn from other's experiences	.45
I am a good listener	.67
I am very organized in my approach to caring for my patient	.45
Others would describe me as a very caring person	.67

Specific Aim 3: Demonstrate evidence of criterion-related validity for SFHAS.

***Hypothesis 3*:** Although there is no instrument that evaluates Factor H, evidence of criterion-related validity will be demonstrated using a combination of scales for FFP, GMA, and clinical reasoning. Strength of correlations between SFHAS and NEO-PI-R, WAIS-R, and the Lasater Clinical Judgment in Simulation Rubric (LCJSR) will demonstrate evidence of criterion-related validity. SPSS will be used to evaluate these correlations. Evidence of criterion-related validity will be demonstrated utilizing a scatterplot and by a Correlation coefficient of at least .30-.69 which will suggest a moderate relationship (Polit & Beck, 2004).

Hypothesis 3 was partially met. Given that the scale was revised to ten items and only one factor (personality traits) it was only correlated with the NEO-FFI for criterion-related validity. Table 6 demonstrates Criterion Related Validity for SFHAS correlated to NEO-FFI. All subscales show significant correlation with the exception of openness. Correlations of SFHAS and NEO-FFI related to extraversion, conscientiousness, and agreeableness were significant at the $p<.01$ level, while the correlation between the SFHAS and NEO-FFI related to neuroticism was at the $p<.01$ level, but was inversely correlated. As SFHAS scores increase, neuroticism scores decreased. Criterion related validity was supported with the exception of the correlation with openness.

Table 6

Criterion Related Validity for SFHAS correlated to NEO-FFI

NEO-FFI Subscales	SFHAS
NEO-FFI Neuroticism	-.27**
NEO-FFI Extraversion	.42**
NEO-FFI Openness	-.12
NEO-FFI Conscientiousness	.59**
NEO-FFI Agreeableness	.40**

**p<.01

***Specific Aim 4*:** The SFHAS will demonstrate evidence of internal consistency reliability.

***Hypothesis 4a*:** A one-sample Kolmogorov-Smirnov Test will demonstrate normality with a result that is not significant at the p<.001 (Pallant, 2007).

Hypothesis 4a was met. The Kolmogrov-Smirnov Test yielded a p of .04 which is not statistically significant at the .001 level therefore demonstrating normality.

***Hypothesis 4b*:** Evidence of internal consistency reliability will be demonstrated utilizing SPSS. The subscales identified during the factor analysis will be evaluated related to inter-item correlations, item-total correlations, and Cronbach's coefficient correlation as suggested by Ferketich (1991). These correlations will demonstrate how items relate to each other and to the overall subset. Inter-item correlations with a value of <.30 will be evaluated for deletion, and those with values >.70 will be evaluated for redundancy. Before items are deleted the Cronbach's alpha if item were deleted value should demonstrate an increase by deleting the item. Otherwise this deletion must be given further consideration for revision rather than deletion. Consideration must also be given to the significance of the item to the overall concept before deleting.

Cronbach's alpha of $\geq$.70 is acceptable as it increases as inter-item correlation increases and decreases with multidimensionality (Netemeyer, 2003).

Hypothesis 4b was partially met as no subscales were identified. Table 7 displays factor analysis for SFHAS items in the revised scale. Inter-item correlations were low (ranging from .18 to .50) with a mean of .28. Approximately one third did fall in the .30 to .70 range. However, none if deleted would significantly improve the Cronbach's alpha. No inter-item correlations were greater than .70 demonstrating no redundancy. Cronbach's alpha was .75 which is acceptable based on Nunnally's recommendation of acceptable Cronbach's alpha being .70 or greater (1978). All items demonstrated a floor effect greater than desired, yet means and standard deviations demonstrated some variation among respondents. There were no ceiling effects. Item-total correlations were .30-.53 supporting satisfactory correlation.

Table 7

Item Statistics for the SFHAS

SFHAS Item	M (SD)	Range	% Ceiling	%Floor	Item to total Correlation	Cronbach's Alpha if Item Deleted
When I am working I am very focused on what I am doing	4.48 (0.52)	(3-5)	0.0	48.5	0.42	0.73
I take constructive criticism well	4.08 (0.69)	(2-5)	0.0	25.7	0.44	0.72
When I don't understand something I look for resources	4.52 (0.52)	(3-5)	0.0	53.5	0.44	0.73
I value punctuality	4.55 (0.64)	(2-5)	0.0	62.4	0.31	0.74
I work very hard to achieve my goals	4.67 (0.53)	(3-5)	0.0	70.3	0.44	0.73
I am consistently honest	4.69 (0.46)	(4-5)	0.0	69.3	0.52	0.72
I can learn from other's experiences	4.74 (0.44)	(4-5)	0.0	74.3	0.35	0.74
I am a good listener	4.61 (0.58)	(3-5)	0.0	66.3	0.51	0.71
I am very organized in my approach to caring for my patient	4.08 (0.77)	(2-5)	0.0	29.7	0.30	0.75
Others would describe me as a very caring person	4.64 (0.50)	(3-5)	0.0	63.7	0.53	0.71

Specific Aim 5: The SFHAS will demonstrate evidence of test re-test reliability.

Hypothesis 5: Evidence of test re-test reliability will be demonstrated by administering the SFHAS twice to the same participants two weeks apart as recommended by Yen and Lo (2002). The results will be analyzed utilizing the Interclass Correlation Coefficient. Results from the ICC will reflect strength of stability of the tool: 0-.20 suggests weak stability, .21-.40 suggests fair, .41-.60 suggests moderate, .61-.80 suggests substantial, .81-1.0 suggest near perfect stability (Landis and Koch, 1977).

Hypothesis 5 was met. Participants were sent the SFHAS via e-mail two weeks after initial completion. Sixty-seven of 101 participants returned the re-test SFHAS. Interclass correlation was .77 supporting substantial evidence of substantial test re-test reliability.

Summary

Evidence of content validity of the SFHAS was demonstrated using a sample of four content experts, and evidence of face validity was demonstrated in a convenience sample of three nurse managers, three experienced RN preceptors, and five new graduate nurses from acute care environments. This led to revision of the fifty item pool to a final twenty item scale Psychometric testing of the SFHAS in 101 new graduate nurses led to revision of the twenty item scale to a final ten item scale which demonstrated evidence of internal consistency reliability and test re-test reliability. The revisions of the tool yielded a scale which is reflective of personality rather than the three factors identified as defining Factor H in the new graduate nurse. This revised tool demonstrated evidence of criterion-related validity with four of the five factors of the NEO-FFI which is a shortened version of the NEO-PI, the gold standard for assessment of the five factor

model of personality. The only sub-scale of the NEO-FFI for which the SFHAS did not demonstrate evidence of criterion related validity was openness. It did show evidence of criterion related validity for the subscales of conscientiousness, agreeableness, extroversion, and neuroticism. Substantial test re-test validity was demonstrated with a strong return rate of the re-test by participants.

5. Discussion

This chapter discusses the psychometric analysis of the Sims Factor H Assessment Scale. Discussion will begin with 1) hypotheses and specific aims and followed by the 2) theoretical, 3) research, 4) practice, and 5) education implications. Specific issues to be addressed include the impact of a one factor solution, fit with the conceptual model, and opportunities for use of the current tool and further research suggestions. Finally, study limitations as discussed in Chapter 1 will be addressed.

As the nurses function in an increasingly demanding environment in healthcare, they will be required to manage more complex patients and situations than ever before while maintaining and/or improving efficiency. At the same time there are looming predictions of nursing shortages and current shortages of nursing faculty. We must find ways to support the least experienced of these nurses, the new graduate Registered Nurse. Nurse leaders can quickly identify new graduate RNs who have thrived in the acute care environment, yet there has been no research to identify what it is that differentiates these new graduate RNs from those who struggle in the same environment. The development of an instrument that identifies those new graduate nurses who have the attributes recognized as contributing to successful new graduate nurse transition into practice will offer support to the nurse leader in hiring decisions. Such a tool will also offer the opportunity to identify areas of deficiency in the new graduate leading to tailored orientation and education programs to support successful transition of those who may not have been able to excel given previous approaches. For all these reasons it is imperative that we develop a method for identifying the best new graduate nurse candidates to fit the demands of the role of Registered Nurse.

Specific Aims and Hypotheses

Specific Aim 1: Develop the Sims Factor H Assessment Scale SFHAS) and evaluate content validity of individual items.

The SFHAS initial pool of 50 questions was developed based on the evidence identified in literature review of general mental ability, clinical judgment, and personality traits. These three factors were identified as key elements from a pilot study previously conducted by this researcher. Nurse managers and experienced RN preceptors identified key characteristics of the new graduate nurse who has "got it". The intent of findings from this research was to measure these three factors in new graduate nurses and to individualize orientation programs to enhance those factors in which the new graduate nurse demonstrated less strength. There would also be the potential to use such a tool in schools of nursing to increase student nurse insight into areas for further development. Evidence of content validity was demonstrated for 29 of the initial pool of 50 items.

Hypothesis 1a: Content validity will be analyzed utilizing the Content Validity Index (CVI) with four content experts.

The initial pool of 50 questions was composed of 25 items reflecting personality, 18 items reflecting clinical judgment, and 7 questions reflecting general mental ability. This variation in numbers of questions related to each factor is due to the number of components of each factor. Content validity was supported by the content experts for 29 of the items from the 50 item pool. Within these 29 items were four items reflecting clinical judgment and two reflecting general mental ability while the remaining 23 items reflected personality. The results demonstrated stronger support of the personality focused questions by the content experts. However with only 4 content experts items fell

below the guideline of CVI > .83 if even one expert did not support the question as valid and was removed from the pool. In reviewing responses across experts, no expert focused singularly on personality, and items related to general mental ability and clinical judgment were found most frequently to be rejected by only one expert. This finding is of particular interest given that the pilot study identified attributes consistent with general mental ability and clinical judgment as important in the new grad demonstrating Factor H, yet when reviewing the items personality items were more commonly accepted across experts. This leads to questions of whether this is related to the fact that evaluating personality in interview is easier than evaluating clinical judgment and general mental ability. Are the nurse leaders, nurse managers and experienced RN preceptors more focused on personality or is there truly less value placed on clinical judgment and general mental ability in recruitment? Perhaps there is a perception that clinical judgment will be learned "on the job". Another possible rationale for this result is that with increasing focus on patient satisfaction (i.e. Hospital Consumer Assessment of Healthcare Providers and Systems, 2012) some nursing leaders are looking to hire for "attitude" and train for competence.

Hypothesis 1b: Evidence suggesting face validity for the SFHAS related to relevance to the transition of the new graduate nurse into practice and the demonstration of Factor H will be demonstrated using a sample of 5 new graduate nurses, three nurse managers, and three experienced RN preceptors.

The results of the face validity analysis removed another 9 items which led to a scale with 20 items which were predominantly focused on personality traits. Only one item related to general mental ability, and two items related to clinical judgment

remained. Of the 29 items maintained after CVI, two of the clinical judgment and one of the general mental ability items were removed due to the perception of nurse managers and experienced RN preceptors that these lacked face validity. Inclusion of these items may have changed the analysis such that the three factors (general mental ability, clinical judgment, and personality) would have fallen out in the factor analysis. One potential explanation for this variation is that the nurse experts had much broader knowledge and experience than the convenience sample of nurse managers, experienced RN preceptors, and new graduate nurses who evaluated face validity. This does suggest an opportunity to further study how new graduate nurses are selected. Interestingly, when describing what attributes define the new graduate who excels nurse managers and experienced RN preceptors included all aspects identified as demonstrating Factor H, and yet when evaluating what is most important in hiring they focused primarily on personality. This leads to the question of what impact the focus on personality is having on selection of nurses who will excel in the acute care environment. Further, does this focus have an impact on the turnover of the new graduate in the first year of employment?

Specific Aim 2: Demonstrate evidence of construct validity of SFHAS

The initial exploratory factor analysis suggested that seven factors should be extracted. Analysis of the items grouped within the seven factors demonstrated no common themes to suggest subcategories. Principle axis factoring with Varimax rotation produced very low loadings (<.30) on the majority of items suggesting lack of correlation of items with the seven factors. In review of the SFHAS final tool after the revisions generated by content and face validity, the items remaining were primarily related to personality. The one item related to general mental ability and the two items related to

clinical judgment showed poor performance, suggesting they should be removed leaving all remaining items reflective of personality. When revised to a one factor analysis, loadings ranged from .37 to .62 suggesting that this one factor approach supported evidence of construct validity.

Specific Aim 3: Demonstrate evidence of criterion-related validity for SFHAS.

Since the general mental ability and clinical judgment items did not test well and were therefore removed, only one criterion related validity analysis was required. The gold standard for personality assessment is the NEO-PRI. Due to the length of the NEO-PRI measure and concerns related to respondent burden, a shortened version of the NEO-PRI, the NEO-FFI (which has also demonstrated reliability and validity) was utilized. Comparison of the SFHAS to the NEO-FFI showed significant correlation with the exception of the factor of openness (see Table 6). This suggests that the SFHAS does demonstrate evidence of criterion related validity. One might consider the population of the study when evaluating the lack of correlation with openness. McCrae and Costa (1991) defined the factor of openness as measuring the intensity of the facets "fantasy, aesthetics, feelings, actions, ideas, and values," (p. 368). The new graduate nurse, given the novice/advanced beginner perspective is expected to be focused on evidence based practices. The less experienced nurses are judged by their ability to meet expectations of technical skills and task completion (Romyn, et al., 2009). Benner's description of the novice nurse as, "recognizing concrete manifestations of clinical signs and symptoms," (p. 51), also reflects the new graduate nurse as one who is focused on the reality of the daily tasks and assigned accountabilities. To respond in terms that would suggest fantasy, feelings, and actions may not be seen as beneficial to these competencies. This would be

consistent with questions related to openness not testing well when evaluating content validity which in turn led to deletion of many of these items from the tool.

Specific Aim 4: The SFHAS will demonstrate evidence of internal consistency reliability.

Psychometric testing of the SFHAS demonstrated evidence of internal consistency reliability. The Kolmogrov-Smirnov Test yielded a p value of .04 which is not statistically significant at the .001 level and therefore, demonstrating evidence of normality. Skewness was acceptable with positive skew at 2.33, and kurtosis also was acceptable at 0.9.

All items demonstrated a floor effect greater than desired, and there were no floor effects. None of the items were negatively stated. Floor effects reflect the items' reflection of behaviors that are reinforced as positive in the work environment. "Being focused", "work[ing] hard to achieve goals", and being "caring" are all characteristics that are seen as positive behaviors in nurses. Although there was some variation in scores, it may be difficult for the new graduate nurse to admit to perceiving self as less than strongly demonstrating these characteristics. A potentially more accurate and value-added measure would be the perceptions of peers (Registered Nurses who work with the new graduate nurses) related to these behaviors as the new graduate nurse transitions into practice; given the definition of Fact H and associated attributes, how do the peers perceive the new graduate as possessing these attributes.

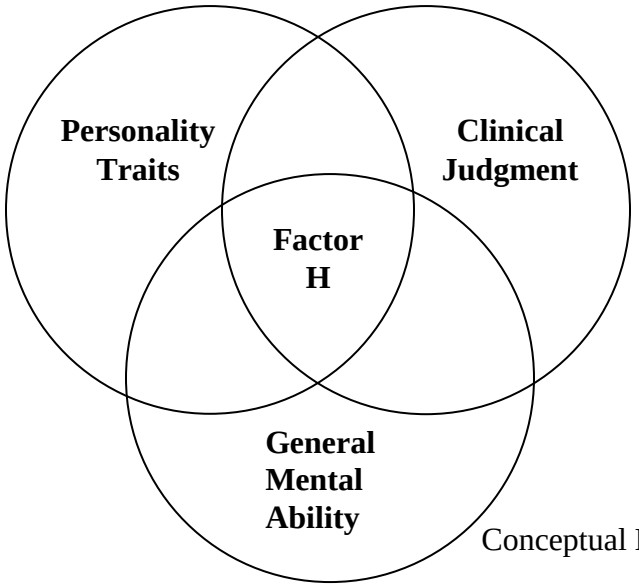
Specific Aim 5: The SFHAS will demonstrate evidence of test re-test reliability.

Sixty-seven of 101 participants returned the re-test SFHAS. Interclass correlation was .77 supporting evidence of test re-test reliability. This result suggests substantial test re-test reliability and was close to the near perfect range. The strong response rate

supported power. Given the discussion related to floor effect (and therefore lack of variability of answers) it may also be suggested that re-test would be anticipated to be very consistent with the first test again reflecting the positive perception of the behaviors and attributes associated with each item.

Theoretical Implications

This study was based on the conceptual model developed for Factor H in the new graduate nurse. This model suggests that there are three factors (general mental ability, clinical judgment, and personality) which come together to demonstrate Factor H in the new graduate nurse. This study did not support this model. Those items which reflected general mental ability and clinical judgment were eliminated through the psychometric testing of the SFHAS. The results of the study suggest a need for further study of the phenomenon of Factor H.



Conceptual Model of Factor H

When describing the attributes of new graduate nurses possessing Factor H, nurse managers and experienced RN preceptors used terms strongly reflective of personality

traits as defined in the Five Factor Model of personality (from which the NEO-FFI was generated), but they also used terms reflective of general mental ability and clinical judgment such as, “critical thinking,” “applies problem solving,” and “studies and researches to learn more”. Yet when asked about the items generated to reflect these three factors, there was strong preference by nurse managers and experienced preceptors towards personality related items. Does this mean that specific nursing personality components yield the new graduate nurse who demonstrates Factor H? This study does not conclude this. The results here suggest more opportunities to further evaluate the attributes of Factor H.

The lack of strong support for the clinical judgment and general mental ability items may be related to clarity of meaning. Items were generated based on the conceptual definitions of the three factors and the gold standard tools for measurement. Perhaps the items either were not clear in meaning to the participants or they may have different contextual meaning to the participants given individual work environments and experiences. Interviews to discuss how items relate to and or reflect the attributes identified in the pilot study may offer insight into this variation.

Research Implications

As this study did not support the conceptual model of Factor H, there is ample opportunity to further study Factor H:

- How is Factor H perceived by nurse leaders and experienced nurse preceptors? In evaluating the descriptions given by nurse managers and experienced RN preceptors of what attributes demonstrate the presence of Factor H in the new graduate nurse their descriptions were in alignment with the attributes defined as

personality, general mental ability, and clinical judgment. However, when evaluating the pool of items generated to develop the final tool, there was a strong preference demonstrated towards personality. Perhaps the characteristics they were describing were not in their perception reflected in the pool items as they experience these characteristics in practice. There is a need to further investigate and understand what nurse managers and experienced RN preceptors are seeing in the practice of the new graduate nurse they would describe as demonstrating Factor H to evaluate how well the items generated for the initial pool as well as the finalized tool reflect what they intend to describe.

- Were the items (especially those focused on general mental ability and clinical judgment) clear and consistent with the participants' work experience? Although the items were developed in an attempt to reflect the acute care nursing environment, perhaps the difference between the researcher and the new graduate nurse as it relates to experience with this type of environment may have caused the items to be less clear to the participant or not in alignment with their clinical experiences in their nursing programs.
- Given the floor effects evident even in the ten item scale, would the scale be better used by the preceptor or nurse manager of the new graduate nurse at the end of orientation? New graduate nurses may attempt to put the best light on their knowledge, comfort, and skills. If the preceptor and/or nurse manager were scoring the student on a scale of which they had driven development, the scores may not have been as consistently high. The fact that participation in this study was self-selected may also have skewed the participant sample with a higher than

anticipated number of highly engaged and higher performing new graduate nurses.

- The participants in this study were students preparing to enter the acute care nursing environment. There is opportunity to use the SFHAS on nurses who are already functioning in this environment. To evaluate variation across years of experience could provide valuable insight into the development of nursing personality traits as influenced by time and experience.
- Another consideration is the influence nursing personality has on professional progression. What can SFHAS tell us about nurses who are more likely to pursue further education advancing to the Clinical Nurse Specialist, Nurse Practitioner, nurse administrator, nursing faculty, or etc.? Following a group longitudinally would yield data for this analysis.
- To further expand the use of this tool, what value would this tool have in nursing education? Would use of this tool offer opportunity for faculty to evaluate students' readiness for clinical experiences and/or to develop educational plans to better support student gaps in readiness for the acute care environment.

An initial consideration must be related to how nurse managers translate perceived demonstrable attributes of Factor H into hiring decisions. The previous pilot study and the face validity evaluation were both conducted with small convenience samples from two organizations. There is opportunity to study those attributes perceived to demonstrate Factor H in the new graduate nurse and those factors that influence hiring decisions related to new graduate nurses across a larger, more diverse group of nurse leaders. This would allow greater input into the attributes which make up the newly

identified phenomenon of Factor H. The focus population for this study was the new graduate nurse entering her/his first role as a Registered Nurse in an acute care setting. The reason for this focus was to potentially be able to begin to identify ways of measuring key attributes that support successful transition so that gaps in these attributes could be addressed in orientation; potentially making a difference early in the careers of these nurses. Perhaps there would be a benefit to testing in a more experienced group of nurses who may be more open with their self evaluation of strengths and areas for growth. An opportunity to have both self evaluation by the more experienced nurse with a comparison of an evaluation by an expert peer or nurse manager has potential to demonstrate a more objective evaluation of the new graduate nurse's attributes related to Factor H.

Another aspect of Factor H which would benefit from further study is the longitudinal impact of general mental ability, clinical judgment, and personality. This study was focused on a group of newly graduated (or graduating) group of student nurses. Would they score differently on these tools after one month of nursing practice? How would they score after six months or one year as an RN in an acute care environment? Longitudinal assessment of a group of new graduate nurses as they progress from advanced beginners to competent nurses could potentially yield a different insight into how these factors influence and are influenced by nursing practice. Along with evaluating these factors, an assessment by the nurse manager and experienced RN preceptors of the presence or absence of Factor H as defined in this study that the new graduate nurse demonstrates at the same points as the other tools are completed may help to track if there is a correlation between these factors and perceived demonstration of Factor H.

Clearly, Factor H will require further study to in order to determine how it should be conceptually defined with greater clarity and how this phenomenon can be applied to new graduate nurses' transition into practice. Although this study did not support the conceptual model of Factor H, it is important to continue to seek to understand what attributes support successful transition into nursing practice in the acute care environment so that we can better support and develop new graduate nurses to their optimal potential.

This study did produce a psychometrically tested tool which showed evidence of validity and reliability. Although this tool does not reflect the conceptual model of Factor H, this tool does reflect a measurement of nursing specific personality. The tool reflects key personality attributes which are seen as essential to the success of the new graduate nurse in the acute care environment. While the NEO-FFI and other tools assess general personality attributes, there is not a tool focusing specifically on applying personality attributes to nursing. While not all the questions on this tool suggest a direct nursing application, participants were requested to answer the questions based on their experience as a student nurse (either in academic or employment situations). These directions applied to the tool do give us an opportunity to evaluate nursing personality. This may still be applicable in the hiring process as new graduates are evaluated on multiple aspects of professional knowledge and skills.

Practice Implications

This study has potential implications in the practice environment. The tool is short and takes very little time to complete. Evaluation is also completed in a short period of time. This allows the tool to be easily integrated into the orientation program as well as into the hiring process. New graduate nurses who choose to work in an acute care

environment are entering into very demanding roles in the care of increasingly complex patients. Identifying personality strengths and areas for growth are of major importance for the leaders supporting these

For example, for those who are not as confident seeking assistance, approaches for seeking additional direction can be reinforced.

For the nurse leader there is opportunity to evaluate fit with the rest of the unit staff. Areas where many new graduates are hired (typically medical surgical units) can evaluate and plan for the needs of new graduate nurses. To have multiple new graduate nurses on a nursing unit at one time is not uncommon. To have multiple new graduate nurses who all are hesitant to seek assistance in unfamiliar situations could be a significant strain on the experienced staff and could increase risk of errors. Having such a tool allows the opportunity to identify this gap in skills and develop orientation plans to help improve the new graduates' confidence in seeking assistance.

As a personality tool SFHAS offers greater opportunity for the nurse manager to evaluate unit fit prior to hiring. By no means does this suggest that there is a preferred "nursing personality", but rather that there are many personalities within nursing. Differing populations require variation in the personality of the nurse providing care. The individual who enjoys higher levels of unpredictability and the need for rapid assessment and intervention may be a better fit in the emergency department than in the rehabilitation unit. The sense of psychological belonging or "fit" has been shown to be a predictor of turnover in the new graduate nurse (Nurses Credentialing Center, 2000; Morrow, 2009). SFHAS offers the nurse manager a way to evaluate nursing personality and fit with the

population of patients and other nursing staff within the unit thereby supporting retention of the new graduate nurse.

Longitudinal assessment of these new graduates would also offer insight into what nursing personalities are more likely to pursue advanced education and roles. This would facilitate identification of opportunities to better challenge these individuals. By being able to offer such opportunities nurse managers reduce the need for nurses to look for external opportunities thereby improving retention of these high performers.

Education Implications

This tool also has potential implications for nursing education. Nursing education programs have advanced with the introduction of new pedagogies, clinical simulation, and changes in programs offered. The SFHAS ten item tool offers an opportunity to enhance nursing programs by evaluating nursing personality prior to beginning the nursing program, during the program, and/or at the completion of the program. By better understanding the gaps in attributes needed for successful transition into the RN role in the acute care environment. In this way the program can be individualized to the student allowing the student to be better equipped for transition into the RN role. Given further study of SFHAS yields insight into the tendency for these new graduate nurses to pursue advanced education, nursing programs could also begin to use this information in program development. Opportunities focused on advanced practice could be included as a part of their individualized education plan.

Limitations

Limitations to be discussed in this section are these identified in Chapter 1.

1. A non-probability, convenience sample will be used for this study.

The sample of 101 student nurses were graduating from one of three schools of nursing in the Midwest within three months (before or after) of participation. The schools varied in size (graduation class sizes of 20's to low 100's) and degree program (ASN and BSN). The sample was also 99% female and 83% white (12% African-American and 0% Hispanic), limiting generalizability to white female new graduate nurses from schools in the Midwest. Given the increasing diversity in nursing it would be important to seek ways to test this tool among a more diverse (both race and gender) population.

2. There is currently no instrument considered to be the "gold standard" for measurement of clinical judgment.

There are several tools available for the measurement of clinical reasoning, but none for clinical judgment. Given that there is no tool currently considered the "gold standard" for clinical judgment, a tool was used that has been psychometrically tested for reliability and validity for use in clinical simulation. The Lasater Clinical Judgment in Simulation Rubric was utilized as it was the only tool identified as reliable and valid in assessing clinical judgment. Since the final SFHAS was a nursing specific personality measure, criterion related validity was not impacted by choosing this tool.

3. There is no evidence to support that the Lasater Clinical Judgment in Simulation Rubric is also reliable and valid when applied to case studies.

The Lasater Clinical Judgment in Simulation Rubric has been psychometrically tested to demonstrate evidence of reliability and validity. However, this tool was developed for use in clinical simulation. When discussing via e-mail applicability of this tool with the use of an unfolding scenario, Dr. Lasater shared that a hospital near her was applying this tool in evaluation of clinical competence utilizing hard copy case studies

rather than simulation. She did not yet have data back from this organization. However they had communicated with her that they were seeing success in their ability to assess clinical competence with hard copy scenarios. To further assure consistency of evaluation and scoring of the participants responses, a Masters prepared nurse educator with extensive experience with both use of scenarios and use of clinical simulation assisted in scoring all responses. Dr. Lasater has asked that data from this study be shared to further her evaluation of applicability to non-simulation based scenarios. As noted previously, given the final SFHAS was a nursing specific personality measure criterion related validity was not impacted by the variation in use of this tool.

4. Factor H is a newly conceptualized phenomenon, therefore there is no literature or previous research specific to this phenomenon.

Given the paucity of literature around this phenomenon, the previous pilot study was used to generate the literature review which then supported the conceptual model and the generation of items on the tool. Working with a newly identified phenomenon creates challenges related to clarity around the most basic foundations of the study from the conceptual definition to the conceptual model. This limits the use of this work to the conceptual definition identified in this study. Application of the phenomenon outside this definition cannot be supported. The challenge becomes a question of whether the factors chosen are truly what defines Factor H. Continued study of this phenomenon has potential to unlock greater understanding of the support needed for successful transition of the new graduate nurse into the Registered Nurse role in the acute care environment. Key concepts of nursing orientation in these settings has changed minimally over time. Further understanding and clarity around the role of Factor H in the new graduate nurse

offers opportunity to dramatically change this orientation to meet the gaps in attributes that clearly help new graduate nurses "get it".

5. Participants were still in the "student" role rather than new graduate nurse role.

These assumptions and limitations are considered acceptable given the purpose and descriptive nature of this study of a new phenomenon.

Summary

In summary, this research study was focused on developing and psychometrically testing a tool to measure a newly defined phenomenon identified as Factor H. Factor H is a constellation of attributes which contribute to the new graduate nurse who is highly successful in the transition from new graduate to RN in the acute care environment. Literature review was based on work done in a previous pilot study in which nurse managers and experienced RN preceptors identified these attributes possessed by the new graduate nurse demonstrating Factor H. Through the pilot work and the literature review Factor H was identified as having three components: general mental ability, clinical judgment, and personality. A tool was developed and psychometrically tested to show evidence of reliability and validity. The tool, however, does not reflect all three attributes. Although the tool only reflects personality, there is potential to use such a tool in the evaluation and orientation of new graduate nurses. This study also yields opportunities for further research related to Factor H which has potential to create greater knowledge related to supporting new graduate nurses as they successfully transition into their first RN role.

Appendix A: Institutional Review Board Approvals

INDIANA UNIVERSITY

OFFICE OF RESEARCH ADMINISTRATION

Date: May 10, 2010

To: Dr. Patricia Ebright
Adult Health Nursing
NU 412

From: Regina Weber
Research Compliance Administration,
IUPUI UN 618

Subject: IUPUI/Clarian Institutional Review Committee - Exempt Review of Human Study

Study Number: EX1005-01B

Study Title: Psychometric Testing of the Sims Factor H Assessment Scale

Your application for approval of the study named above has been accepted as meeting the criteria of exempt research as described by Federal Regulations [45 CFR 46.101(b), paragraph 2]. A copy of the acceptance is enclosed for your file.

Although a continuing review is not required for an exempt study, prior approval must be obtained before change(s) to the originally approved study can be initiated. When you have completed your study, please inform our office in writing.

If the research is conducted at or funded by the VA, research may not be initiated until approval is received from the VA Research and Development Committee.

Please contact the Office of Health Care Billing and HIPAA Programs at 317-278-4891 for information regarding a Data Use Agreement, if applicable.

Enclosures: Copy of acceptance

IVY TECH COMMUNITY COLLEGE

August 30, 2010

Ms. Caroline Sims
Director of Nursing Education and Clinical Simulation
Columbus Regional Hospital
2400 E 17th Street
Columbus, IN 47201

Dear Caroline,

Subject: ***"New Graduate Nurse Transition into Practice: Psychometric Testing of the Sims Factor H Assessment Study"***
HSRB Request #10016

Thank you for your recent submission of an Application for Human Subject Research Project Approval. As called for by our policy, I have reviewed your application along with the Human Subject Review Board.

Your application has been approved to conduct the research within the next 6 months as described in your application materials received June 30, 2010 contingent upon your broadening your sample among Ivy Tech students to include recent grads from the Central Indiana and Bloomington Regions as well as the Columbus region. If you have not done so already, you will need to contact Angie Koller (akoller@ivytech.edu, 317 921-4413) in Indianapolis and Pam Thompson in Bloomington (pthompso@ivytech.edu, 812 330-6113) to arrange for the information you need from their programs. I believe our Assistant Vice Provost for Nursing Education has given them a heads up about your research.

As you are likely aware, it is the responsibility of a principal investigator to oversee his/her project in compliance with all local, state and federal guidelines for human research (e.g. 45 CFR 46; FERPA; HIPAA; CFR 21). Additional approvals for use of copyrighted materials, if applicable, are the investigator's responsibility.

Please let the Human Subjects Research Committee of Ivy Tech know about any adverse events associated with your study. Should the research approach need to be modified, be sure to let us know. Any procedural modifications must be evaluated and approved prior to being implemented.

Approval of this research does not convey authorization to publish findings that identify Ivy Tech (or its students, faculty or staff) as a study participant. As with all research projects conducted among Ivy Tech students, faculty or staff, we also request that Ivy Tech receive a copy of the final report and analysis, for internal use.

50 WEST FALL CREEK PARKWAY NORTH DRIVE
INDIANAPOLIS, INDIANA 46208-5752
P. 317-921-4882

We hope things go well with your research and look forward to reviewing your findings.

Sincerely,

Karen A. Stanley
Executive Director of Institutional Research
And Planning

cc: Human Subjects Review Board
Gail B. Sprigler, Asst. Vice Provost for Nursing Education
Chancellors Kathleen Lee, John Whikehart, John Hogan
Vice Chancellors of Academic Affairs Mike Clippinger, James O. Smith, Rosalie Hine
Jim Clark, Asst. General Counsel

INDIANA UNIVERSITY

OFFICE OF RESEARCH ADMINISTRATION

Date: September 12, 2010

To: Dr. Patricia Ebright
Nursing
NU 412

From: Regina Weber
Research Compliance Administration
UN 618

RE: IUPUI Institutional Review Board - Proposed Changes to an Exempt Study
Study Number: EX1005-01B
Study Title: Psychometric Testing of the Sims Factor H Assessment Scale

Your request to expand the recruitment pool to utilize two additional Ivy Tech campuses for this project has been received. It was determined the exempt status of this study will not be altered by the amendment. Therefore, the change you have proposed is accepted and may be initiated immediately.

If you make any other changes to this study, please contact our office. Also, when you have completed your study, please let us know in writing.

If you have any questions, please contact our office.

Phone: • Email: irbexp@iupui.edu • Website: http://research.iupui.edu

INDIANA UNIVERSITY

OFFICE OF RESEARCH ADMINISTRATION

To: Patricia Ebright, DNS. RN
Nursing

From: Human Subjects Office
Office of Research Administration – Indiana University

Date: April 15, 2011

RE: **EXEMPT AMENDMENT – APPROVAL**
Protocol Title: Psychometric Testing of the Sims Factor H Assessment Scale
Protocol #: EX1005-01B (1103005052)

Sponsor:

An amendment to your study named above was approved on **April 14, 2011**. The protocol continues to meet the criteria of exempt research as described in the Federal regulations at 45 CFR 46.101(b), paragraph(s) 2. The changes described in the amendment can now be implemented, unless any departmental or other approvals are required.

You should retain a copy of this letter and any associated approved study documents in your records. Please refer to the protocol title and number in future correspondence with our office. You may contact our office at (XXX) XXX-XXXX or by e-mail at irb01@iupui.edu if you have questions or need further assistance.

Thank you.

INDIANA UNIVERSITY INSTITUTIONAL REVIEW BOARD (IRB)

INVESTIGATOR LIST

PRINCIPAL INVESTIGATOR: Patricia R. Ebright
IRB STUDY NUMBER: EX1005-01B
STUDY TITLE: Psychometric Testing of the Sims Factor H Assessment Scale
DOCUMENT DATE: 4/14/2011

Co-investigators: Provide the name and department of other individual(s) assisting with the study who 1) will be responsible for the design, conduct, or reporting of the study, 2) have access to subjects (i.e. will consent subjects, conduct parts of the study), 3) will be making independent decisions about the inclusion or exclusion of participants, or 4) have access to identifying and confidential information. Persons without access to identifiable information, or persons whose activities are solely related to safety monitoring, are not considered co-investigators.

SECTION I: INVESTIGATORS

List the principal investigator and any co-investigators and their respective departments. (If there are multiple investigators, please indicate only one person as the principal investigator; others should be designated as co-investigators).

A. **Principal Investigator**: Department

Patricia R. Ebright Nursing

B. **Affiliated Co-investigators**: Provide the name, department, and IU username and email address for all co-investigators who are employed or otherwise affiliated with Indiana University and affiliated institutions. Affiliated institutions include Indiana University Health (Clarian), Roudebush Veterans Affairs Medical Center, Regenstrief, and Wishard Hospital, among others.

1. List individuals from affiliated institutions who are directly interacting or intervening with subjects:
   Name: First, MI, Last | Department | IU Username and/or Email Address

The individuals listed above are required to:

(1) complete the investigator education requirements (CITI);
(2) provide the IRB with documentation of their agreement to participate in the research; and
(3) have a Conflict of Interest (COI) disclosure form on file with the appropriate IU Conflicts of Interest Office.

For more information regarding CITI, please visit – please see http://researchadmin.iu.edu/REEP/reep_citi.html. For more information regarding COI, please visit http://researchadmin.iu.edu/COI/coi_disclosure.html.

2. List individuals from affiliated institutions who are **not** directly interacting or intervening with subjects:

Name: First, MI, Last	Department	IU Username and/or Email Address
Caroline Sims, PhDc, RN	Nursing	

C. **Non-affiliated Investigators**. List any co-investigators who are not employed or otherwise affiliated with IU or an affiliated institution.

Note: Nonaffiliated investigators who do not have local IRB approval for this protocol from their own facilities must enter into a non-affiliated investigator agreement. For additional guidance, refer to the IU IRB Guidance on Collaborations in Research available on the IU Human Subjects Office Website. Nonaffiliated investigators who are directly interacting or intervening with subjects (including obtaining consent) must complete the IU investigator education requirement, provide documentation of agreement to participate in the research (unless a non-affiliated investigator agreement if necessary), and complete a COI disclosure form.

Name of Non-Affiliated investigator	Email Address	Institution/Employer	Description of Procedures Performed	Is the non-affiliated investigator directly interacting or intervening with subjects? (yes/no)	Is the non-affiliated investigator required to receive review from a local IRB? (yes/no)
Sandy Huntington	sahuntin@ivytech.edu	Ivy Tech	Data analysis	No	No

SECTION II: CONFLICT OF INTEREST

Federal regulations and Indiana University policy require that all investigators participating in human subjects research disclose and manage (potential) conflicts of interest. Disclosed conflicts relating to this study must be disclosed to potential subjects in the informed consent document.

1. Are any of the investigators listed in Section I aware of an institutional conflict of interest which could affect or be affected by this research?

   ☒ No.

   ☐ Yes. Please explain: _____

2. Do any of the investigators listed in Section I (or their immediate family members) have a (potential) financial interest which could affect or be affected by this research?

Potential financial interests could include: stock ownership in the sponsor or manufacturer of the investigational item, compensation from the sponsor or manufacturer of the investigational item (excluding payments for conducting as outlined in the clinical trials agreement), patent or proprietary interest in the investigational item, employment relationship with the sponsor or manufacturer or the investigational item, proprietary interest related to the research including, but not limited to, a patent, trademark, copyright or licensing agreement, any arrangement, ownership interest, or compensation that could be affected by the outcome of the research, and/or any other interest which may be perceived to interfere with the investigator's ability to protect subjects.

☐ No.

☐ Yes. The following investigators have a financial interest in this research: _____

If any of the investigators listed in Section I have a financial interest in this research, the informed consent document must include the financial interest statement. Please see the Informed Consent Template for more information.

3. Have all potential financial interests listed in Question 1 above been disclosed and managed by the appropriate IU Conflicts of Interest Office?

☒ N/A. None of the investigators listed in Section I (or their immediate family members) have a potential financial interest which relates to this research.

☐ No. Please contact the appropriate IU Conflicts of Interest Office immediately. Research may not be approved until all disclosures have been reviewed and managed, if necessary. Please visit http://researchadmin.iu.edu/COI/coi_home.html for more information.

☐ Yes. The disclosure has been approved by the appropriate IU Conflicts of Interest Office OR a copy of the management plan is on file.

Appendix B: Content Validity for the Sims Factor H Assessment Scale

Instructions: Below are items designed to represent the phenomenon of Factor H. These items will be rated on a 5-point response scale when administered to participants. (1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree).

Please read the conceptual definitions below. Check the box indicating the subcategory to which you think it belongs: Personality traits (P), General Mental Ability (G), or Clinical Judgment (C).

Then rate the items for the degree of relevance to the subcategory to which you think it belongs using the response scale below.

In the comments box on the right, please add any comments or edits that might improve the item.

The empty rows at the end of the grid are provided for any additional items or areas that you feel need to be added in order to better reflect the identified concepts. Please add any such items and indicate which concept is reflected.

Conceptual definitions:

Factor H is defined as a constellation of attributes of a new graduate nurse that reflects personality traits, General mental ability, and clinical judgment which is able to be recognized by nurse managers and experienced RN preceptors. Factor H consists of 3 areas (Personality Traits, General Mental Ability, and Clinical Judgment).

Personality traits (**P**) are defined as “characteristics of an individual that exerts pervasive influence on a broad range of trait-relevant responses,” (Ajzen, 1988);

General Mental Ability (**G**) is defined as the general capability to engage in reasoning, planning, problem solving, abstract thinking, learning quickly and from experience, and comprehending complex reasoning (Lubinski, 2004); and

Clinical judgment (**C**) is defined as “an interpretation or conclusion about a patient’s needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient’s response,” (p. 204).

Content Validity Grid

	Personality Traits	General Mental Ability	Clinical Judgment	**1= NR** = Not Relevant **2 = SR** = Slightly Relevant, Need of major revision **3 = MR** = Moderately Relevant, Need of minor revision **4 = VR** = Very Relevant and succinct				
Item	**P**	**G**	**C**	**NR**	**SR**	**MR**	**VR**	**Comments**
In an unfamiliar situation I am likely to ask questions of those with more experience	P	G	C	1	2	3	4	
I am committed to my professional standards	P	G	C	1	2	3	4	
I am confident in my ability to interact with patients	P	G	C	1	2	3	4	
I am confident in my ability to know when I need help	P	G	C	1	2	3	4	
I am a very positive person	P	G	C	1	2	3	4	
I am concerned about my skills related to managing patients on my own	P	G	C	1	2	3	4	

I feel ready to take on the ownership of managing my own assigned patients	P	G	C	1	2	3	4	
In a difficult situation I am able to stay calm	P	G	C	1	2	3	4	
I feel I will be able to identify the most important needs of my patients	P	G	C	1	2	3	4	
I am excited to work with experienced nurses from whom I can learn about patient care	P	G	C	1	2	3	4	
I am concerned that I do not know as much as the experienced nurses will expect me to know	P	G	C	1	2	3	4	
Others view me as a responsible individual	P	G	C	1	2	3	4	
I feel I am good at resolving complex problems	P	G	C	1	2	3	4	
Others have told me that I have strong critical thinking skills	P	G	C	1	2	3	4	
I think it is important to know *why* I am doing what I do, and not just *how* to do it.	P	G	C	1	2	3	4	
I have strong communication skills	P	G	C	1	2	3	4	

I feel ready to take on the ownership of managing my own assigned patients	P	G	C	1	2	3	4	
In a difficult situation I am able to stay calm	P	G	C	1	2	3	4	
I feel I will be able to identify the most important needs of my patients	P	G	C	1	2	3	4	
I am excited to work with experienced nurses from whom I can learn about patient care	P	G	C	1	2	3	4	
I am concerned that I do not know as much as the experienced nurses will expect me to know	P	G	C	1	2	3	4	
Others view me as a responsible individual	P	G	C	1	2	3	4	
I feel I am good at resolving complex problems	P	G	C	1	2	3	4	
Others have told me that I have strong critical thinking skills	P	G	C	1	2	3	4	
I think it is important to know *why* I am doing what I do, and not just *how* to do it.	P	G	C	1	2	3	4	
I have strong communication skills	P	G	C	1	2	3	4	

I am glad to have an opportunity to be a nurse in this organization	P	G	C	1	2	3	4	
I value punctuality	P	G	C	1	2	3	4	
I am good at managing my time when I have multiple priorities	P	G	C	1	2	3	4	
In an unfamiliar situation I would rather try to find my own solutions	P	G	C	1	2	3	4	
I work very hard to achieve my goals	P	G	C	1	2	3	4	
I believe patient and family situations should not change the treatment plan the data (labs, diagnosis, etc) suggest	P	G	C	1	2	3	4	
In school I was always one of the top students	P	G	C	1	2	3	4	
When I am very busy I have difficulty prioritizing what I must do first	P	G	C	1	2	3	4	
I am comfortable with managing multiple responsibilities at once	P	G	C	1	2	3	4	
I am able to anticipate problems that may arise	P	G	C	1	2	3	4	

I can always be counted on to follow through with assigned responsibilities	P	G	C	1	2	3	4	
I am consistently honest	P	G	C	1	2	3	4	
I am consistently trustworthy	P	G	C	1	2	3	4	
I can learn from others' experiences	P	G	C	1	2	3	4	
I find it hard to remain flexible when stressed	P	G	C	1	2	3	4	
I believe policy and procedure are important to follow	P	G	C	1	2	3	4	
I am a good listener	P	G	C	1	2	3	4	
I am very organized in my approach to caring for my patient	P	G	C	1	2	3	4	
I am anxious to have new experiences from which to learn	P	G	C	1	2	3	4	
I like to jump in and help even before I am asked	P	G	C	1	2	3	4	
Others would describe me as a very caring person	P	G	C	1	2	3	4	
I am so glad I chose nursing as my career	P	G	C	1	2	3	4	
I am confident in my ability to recognize changes in my patients	P	G	C	1	2	3	4	

Intuition is not valuable in nursing	P	G	C	1	2	3	4	
Additional areas or items not represented								
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	
	P	G	C	1	2	3	4	

Appendix C: Face Validity for the Sims Factor H Assessment Scale

Instructions: Below are items designed to represent the phenomenon of Factor H. Please read the conceptual definitions below. Check the box indicating the **whether or not you feel the item is relevant to the transition of the new graduate nurse into RN practice**. **This is not asking if you do or do not possess this trait**. There are no "right or wrong" answers I am just asking your opinion. In the comments box on the right, please add any comments or edits that might improve the item.

The empty rows at the end of the grid are provided for any additional items or areas that you feel need to be added in order to better reflect the identified concepts. Please add any such items and indicate which concept is reflected.

Conceptual definitions:

Factor H is defined as a constellation of attributes of a new graduate nurse that reflects personality traits, General mental ability, and clinical judgment which is able to be recognized by nurse managers and experienced RN preceptors. Factor H consists of 3 areas (Personality Traits, General mental ability, and Clinical Judgment).

Personality traits (**P**) are defined as "characteristics of an individual that exerts pervasive influence on a broad range of trait-relevant responses," (Ajzen, 1988);

General Mental Ability (**G**) is defined as the general capability to engage in reasoning, planning, problem solving, abstract thinking, learning quickly and from experience, and comprehending complex reasoning (Lubinski, 2004); and

Clinical judgment (**C**) is defined as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response," (p. 204).

Face validity for the Sims Factor H Assessment Scale

Item	yes	No	Comments
In an unfamiliar situation I am likely to ask questions of those with more experience	**Y**	**N**	
I am committed to my professional standards	**Y**	**N**	
I am confident in my ability to interact with patients	**Y**	**N**	
I am confident in my ability to know when I need help	**Y**	**N**	
I am a very positive person	**Y**	**N**	
I am concerned about my skills related to managing patients on my own	**Y**	**N**	
I feel ready to take on the ownership of managing my own assigned patients	**Y**	**N**	
In a difficult situation I am able to stay calm	**Y**	**N**	
I feel I will be able to identify the most important needs of my patients	**Y**	**N**	
I am excited to work with experienced nurses from whom I can learn about patient care	**Y**	**N**	
I am concerned that I do not know as much as the experienced nurses will expect me to know	**Y**	**N**	
Others view me as a responsible individual	**Y**	**N**	
I feel I am good at resolving complex problems	**Y**	**N**	

Others have told me that I have strong critical thinking skills	**Y**	**N**	
I think it is important to know *why* I am doing what I do not just *how* to do it.	**Y**	**N**	
I have strong communication skills	**Y**	**N**	
The work I do reflects my learning from my nursing program	**Y**	**N**	
As a new graduate nurse I will not be able to be a support to other team members	**Y**	**N**	
I feel getting feedback is important for my learning	**Y**	**N**	
I work best with structure	**Y**	**N**	
I like to be involved	**Y**	**N**	
When I am working I am very focused on what I am doing	**Y**	**N**	
I enjoy providing nursing care	**Y**	**N**	
I am very detail focused	**Y**	**N**	
I take constructive criticism well	**Y**	**N**	
I often think of unique or unusual approaches to solving problems	**Y**	**N**	
When I don't understand something I look for resources	**Y**	**N**	
I always consider consequences before I take action	**Y**	**N**	
I am glad to have an opportunity to be a nurse in this organization	**Y**	**N**	
I value punctuality	**Y**	**N**	
I am good at managing my time when I have multiple priorities	**Y**	**N**	
In an unfamiliar situation I would rather try to find my own solutions	**Y**	**N**	
I work very hard to achieve my goals	**Y**	**N**	

I believe patient and family situations should not change the treatment plan the data (labs, diagnosis, etc) suggest	**Y**	**N**	
In school I was always one of the top students	**Y**	**N**	
When I am very busy I have difficulty prioritizing what I must do first	**Y**	**N**	
I am comfortable with managing multiple responsibilities at once	**Y**	**N**	
I am able to anticipate problems that may arise	**Y**	**N**	
I can always be counted on to follow through with assigned responsibilities	**Y**	**N**	
I am consistently honest	**Y**	**N**	
I am consistently trustworthy	**Y**	**N**	
I can learn from other's experiences	**Y**	**N**	
I find it hard to remain flexible when stressed	**Y**	**N**	
I believe policy and procedure are important to follow	**Y**	**N**	
I am a good listener	**Y**	**N**	
I am very organized in my approach to caring for my patient	**Y**	**N**	
I am anxious to have new experiences from which to learn	**Y**	**N**	
I like to jump in and help even before I am asked	**Y**	**N**	
Others would describe me as a very caring person	**Y**	**N**	
I am so glad I chose nursing as my career	**Y**	**N**	
I am confident in my ability to recognize changes in my patients	**Y**	**N**	
Intuition is not valuable in nursing	**Y**	**N**	

Additional areas or items not represented			

Appendix D: Recruitment Letters

August 30, 2010

Dear Dean Broome,

As you know, I am pursuing my PhD in nursing here at Indiana University School of Nursing. I am currently ready to conduct my data collection for my dissertation study and am requesting permission to recruit student nurse subjects from IUPUI. I am interested in the factors that impact successful transition of the new graduate Registered Nurse into practice.

The goal of the study is to psychometrically test a tool I have developed to measure "Factor H' in the new graduate nurse. When a new graduate nurse completes orientation and begins her/his independent role in an acute care environment, many people are watching her/his performance and role transition. Senior nurses report to the nurse manager that a new nurse "isn't getting it" and may need more orientation or a different unit or population focus. Other new graduates are reported to be "getting there; she/he just needs a little more time"- a typical situation for the novice. There are also nurses who demonstrate a phenomenon not currently defined, but which for the purpose of this paper will be termed "Factor H". These nurses demonstrate behaviors and skills that have their peers as well as the nurse manager saying, "Wow, I wish we had five more just like her/him. She/he has really got it!" What is "it" and how do new graduates get "it"?

Participants will be recruited through distribution of a flyer through email at in the S481 course; Cheryl Erler has agreed to help with this. Inclusion criteria include students in their final semester of an accredited RN program or those who have graduated from such a program in the past three months. Exclusion criteria include any student with a previous nursing degree. Institutional Review Board approval has been granted through Indiana University as well as Ivy Tech Community College. Schools of nursing identified for inclusion in the study are, Indiana University School of Nursing at Indianapolis and Bloomington and Ivy Tech Community Colleges in Columbus., Bloomington, and Indianapolis. The individuals and organizations that participate in the study will not be identified in any way, even if the results of the study are published.

Please find attached the abstract for my study. If you agree to provide permission for contact of you students for this study, please sign and date the form below and fax it to me at Columbus Regional Hospital. Do not hesitate to call or write me if you have any questions or concerns regarding the study.

I do hope you will agree to participate! Thank you in advance for your consideration.

Sincerely,

Caroline Sims PhDc, RN
Indiana University School of Nursing, PhD graduate student
Email: csims@crh.org

I have no objections to the recruitment and participation of student nurses from Ivy Tech Community College, Columbus in the study, "New Graduate Nurse Transition into Practice: Psychometric testing of the Sims Factor H assessment Scale"

_____
Name and Position

_____
Name of Facility Date
June 24, 2010

Dear Dean Lewis,

I am a PhD student at the Indiana University School of Nursing requesting permission to recruit student nurse subjects for my research study at your facility. I am interested in the factors that impact successful transition of the new graduate Registered Nurse into practice. Dr Siegel had agreed to participation prior to my applying for IRB approval. Given the changes in leadership, I wanted to communicate with you and verify your consent to participate as well.

The goal of the study is to psychometrically test a tool I have developed to measure "Factor H' in the new graduate nurse. When a new graduate nurse completes orientation and begins her/his independent role in an acute care environment, many people are watching her/his performance and role transition. Senior nurses report to the nurse manager that a new nurse "isn't getting it" and may need more orientation or a different unit or population focus. Other new graduates are reported to be "getting there; she/he just needs a little more time"- a typical situation for the novice. There are also nurses who demonstrate a phenomenon not currently defined, but which for the purpose of this paper will be termed "Factor H". These nurses demonstrate behaviors and skills that have their peers as well as the nurse manager saying, "Wow, I wish we had five more just like her/him. She/he has really got it!" What is "it" and how do new graduates get "it"?

Participants will be recruited through distribution of a flyer through email at your facility. Inclusion criteria include students in their final semester of an accredited RN program or those who have graduated from such a program in the past two months. Exclusion criteria include any student with a previous nursing degree. Institutional Review Board approval has been granted through Indiana University. Schools of nursing identified for inclusion in the study are, Indiana University School of Nursing at Indianapolis and Bloomington and Ivy Tech Community College, Columbus. The individuals and organizations that participate in the study will not be identified in any way, even if the results of the study are published.

Please find attached the abstract for my study. If you agree to provide permission for contact of you students for this study, please sign and date the form below and fax it to me at Columbus Regional Hospital. Do not hesitate to call or write me if you have any questions or concerns regarding the study.

I do hope you will agree to participate! Thank you in advance for your consideration.

Sincerely,

Caroline Sims MSN, RN
Indiana University School of Nursing, PhD graduate student
Email: csims@crh.org

I have no objections to the recruitment and participation of student nurses from Ivy Tech Community College, Columbus in the study, "New Graduate Nurse Transition into Practice: Psychometric testing of the Sims Factor H assessment Scale"

_____
Name and Position

_____
Name of Facility Date

Study on the Transition of New Graduate Nurses Into Practice

I am conducting research to better understand the factors which contribute to successful transition into practice for the new graduate Registered Nurse. Your input is very valuable in this process. The study consists of completing four assessment tools and will take *60-80 minutes* on average to complete. When you complete all tools, you will be reimbursed **$20** for your time. Through this research I am working to identify ways in which we better support the new graduate nurse as she/he takes on her/his first role as a Registered Nurse (participants must not have previous LPN or RN degree). Your participation will help us better develop the new graduates with whom you will be working in the future and will contribute to the body of nursing knowledge!

If you are interested in participating, please contact me at csims@crh.org or by phone.

Thank you,

Caroline Sims MSN, RN
Director of Nursing Education and Clinical Simulation
Columbus Regional Hospital
2400 E. 17th St.
Columbus, IN 47201
csims@crh.org

Appendix E: Sims Factor H Assessment Scale

When a new graduate nurse completes orientation and begins her/his independent role in an acute care environment, many people are watching her/his performance and role transition. Senior nurses report to the nurse manager that a new nurse "isn't *getting it*" and may need more orientation or a different unit or population focus. Other new graduates are reported to be "getting there; she/he just needs a little more time"- a typical situation for the novice. There are also nurses who demonstrate a phenomenon not currently defined, but which for the purpose of this study will be termed "Factor H". These nurses demonstrate behaviors and skills that have their peers as well as the nurse manager saying, "Wow, I wish we had five more just like her/him. She/he has really *got it*!" What is "it" and how do new graduates get "it"?

The purpose of this study is to psychometrically test a tool designed to measure Factor H in the new graduate nurse. Individual survey responses and demographic data will be used only for the purposes of the study of Factor "H" and will remain confidential. Any questions regarding this survey or the study itself may be directed to Caroline Sims, Director of Nursing Education and Clinical Simulation at Columbus Regional Hospital in Columbus, Indiana. There are no known risks associated with this survey. Participants will complete the tool (the Sims Factor H Assessment Scale-SFHAS) along with three other scales which will serve to validate what the SFHAS is measuring. Participants may withdraw at any point. Your signature below will serve as your informed consent to participate.

Signature_____ Date _____

Appendix F: Sims' Factor H Assessment Scale

Concept: Factor H

Conceptual Definition: Factor H is a cumulative constellation of attributes of a new graduate nurse that reflects personality traits, General mental ability, and critical thinking. Personality traits are defined as, "characteristics of an individual that exerts pervasive influence on a broad range of trait-relevant responses," (Ajzen, 1988). General mental ability is defined as the general capability to engage in reasoning, planning, problem solving, abstract thinking, learning quickly and from experience, and comprehending complex reasoning (Lubinski, 2004). Although there is great variation n the literature, critical thinking is defined by Brookfield (1987) as, "identifying and challenging assumptions, exploring and imagining alternatives, understanding the importance of context, and engaging in reflective criticism."

The purpose of this study is to identify what factors or attributes help new graduate nurses transition into their first role as a Registered Nurse successfully. It is very important that you answer the questions fully and as honestly as possible. Your responses will be with other new graduates' responses when they are reported. Your specific responses will not be shared individually. Information related to your age, degree and experience will again be kept confidential and only used to evaluate study findings. Please answer the following questions.

Current Age (years): _____

Gender: _____ **Ethnicity**: Caucasian/white_____ Black/African American____
Hispanic _____ Other: _____

Date of Graduation from RN Program (mm/yyyy) _____

Degree (circle one) ASN/ADN BSN Diploma

Years experience working in a clinical position (CNA, student, tech) in a hospital prior to graduation _____

Years experience working in a non-clinical position in a hospital prior to graduation _____

Please respond to each of the following items by marking an **"X"** in the box corresponding to the answer which you honestly feel best describes your thoughts and feelings as you begin your role as a new graduate Registered Nurse.

In my role as a new graduate nurse:

1. In an unfamiliar situation I am likely to ask questions of those with more experience

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

2. I feel ready to take on the ownership of managing my own assigned patients

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

3. In a difficult situation I am able to stay calm

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

4. I feel I will be able to identify the most important needs of my patients

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

5. I am excited to work with experienced nurses from whom I can learn about patient care

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

6. I think it is important to know *why* I am doing what I do not just *how* to do it.

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

7. I feel getting feedback is important for my learning

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

8. I work best with structure

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

9. When I am working I am very focused on what I am doing

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

10. I take constructive criticism well

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

11. When I don't understand something I look for resources

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

12. I value punctuality

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

13. I work very hard to achieve my goals

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

14 I am consistently honest

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

15 I am consistently trustworthy

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

16 I can learn from other's experiences

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

17 I am a good listener

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

18 I am very organized in my approach to caring for my patient

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

19 I like to jump in and help even before I am asked

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

20 Others would describe me as a very caring person

Strongly Agree	
Agree	
Undecided	
Disagree	
Strongly Disagree	

NEO-FFI™

NEO Five-Factor Inventory™

Test Booklet–Form S (Adult)

Paul T. Costa, Jr., PhD, and Robert R. McCrae, PhD

Instructions

Write only where indicated in this booklet. Carefully read all of the instructions before beginning. This questionnaire contains 60 statements. Read each statement carefully. For each statement fill in the circle with the response that best represents your opinion. Make sure that your answer is in the correct box.

Fill in (SD) if you *strongly disagree* or the statement is definitely false.

Fill in (D) if you *disagree* or the statement is mostly false.

Fill in (N) if you are *neutral* on the statement, if you cannot decide, or if the statement is about equally true and false.

Fill in (A) if you *agree* or the statement is mostly true.

Fill in (SA) if you *strongly agree* or the statement is definitely true.

For example, if you strongly disagree or believe that a statement is definitely false, you would fill in the (SD) for that statement.

Example

● (D) (N) (A) (SA)

Fill in only one response for each statement. Respond to all of the statements, making sure that you fill in the correct response. **DO NOT ERASE!** If you need to change an answer, make an "X" through the incorrect response and then fill in the correct response.

Note that the responses are numbered in *rows*. Before responding to the statements, turn to the inside of the booklet and enter your name, age, gender, and today's date.

PAR Psychological Assessment Resources, Inc. • 16204 N. Florida Avenue • Lutz, FL 33549 • 1.800.331.8378 • www.parinc.com

34 Reorder #RO-6048 Printed in the U.S.A.

Name _____ Age _____ Gender _____ Today's date _____

1. I am not a worrier.
2. I like to have a lot of people around me.
3. I don't like to waste my time daydreaming.
4. I try to be courteous to everyone I meet.
5. I keep my belongings neat and clean.

6. I often feel inferior to others.
7. I laugh easily.
8. Once I find the right way to do something, I stick to it.
9. I often get into arguments with my family and co-workers.
10. I'm pretty good about pacing myself so as to get things done on time.

11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
12. I don't consider myself especially "light-hearted."
13. I am intrigued by the patterns I find in art and nature.
14. Some people think I'm selfish and egotistical.
15. I am not a very methodical person.

16. I rarely feel lonely or blue.
17. I really enjoy talking to people.
18. I believe letting students hear controversial speakers can only confuse and mislead them.
19. I would rather cooperate with others than compete with them.
20. I try to perform all the tasks assigned to me conscientiously.

21. I often feel tense and jittery.
22. I like to be where the action is.
23. Poetry has little or no effect on me.
24. I tend to be cynical and skeptical of others' intentions.
25. I have a clear set of goals and work toward them in an orderly fashion.

26. Sometimes I feel completely worthless.
27. I usually prefer to do things alone.
28. I often try new and foreign foods.
29. I believe that most people will take advantage of you if you let them.
30. I waste a lot of time before settling down to work.

31. I rarely feel fearful or anxious.
32. I often feel as if I'm bursting with energy.
33. I seldom notice the moods or feelings that different environments produce.
34. Most people I know like me.
35. I work hard to accomplish my goals.

36. I often get angry at the way people treat me.
37. I am a cheerful, high-spirited person.
38. I believe we should look to our religious authorities for decisions on moral issues.
39. Some people think of me as cold and calculating.
40. When I make a commitment, I can always be counted on to follow through.

41. Too often, when things go wrong, I get discouraged and feel like giving up.
42. I am not a cheerful optimist.
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.
44. I'm hard-headed and tough-minded in my attitudes.
45. Sometimes I'm not as dependable or reliable as I should be.

46. I am seldom sad or depressed.
47. My life is fast-paced.
48. I have little interest in speculating on the nature of the universe or the human condition.
49. I generally try to be thoughtful and considerate.
50. I am a productive person who always gets the job done.

51. I often feel helpless and want someone else to solve my problems.
52. I am a very active person.
53. I have a lot of intellectual curiosity.
54. If I don't like people, I let them know it.
55. I never seem to be able to get organized.

56. At times I have been so ashamed I just wanted to hide.
57. I would rather go my own way than be a leader of others.
58. I often enjoy playing with theories or abstract ideas.
59. If necessary, I am willing to manipulate people to get what I want.
60. I strive for excellence in everything I do.

Enter your responses here—remember to enter responses *ACROSS* the rows.

SD = *Strongly Disagree*; D = *Disagree*; N = *Neutral*; A = *Agree*; SA = *Strongly Agree*

1 (SD) D N A SA	2 SD (D) N A SA	3 SD D (N) A SA	4 SD D N (A) SA	5 SD D N A (SA)
6 (SD) D N A SA	7 SD (D) N A SA	8 SD D (N) A SA	9 SD D N (A) SA	10 SD D N A (SA)
11 (SD) D N A SA	12 SD (D) N A SA	13 SD D (N) A SA	14 SD D N (A) SA	15 SD D N A (SA)
16 (SD) D N A SA	17 SD (D) N A SA	18 SD D (N) A SA	19 SD D N (A) SA	20 SD D N A (SA)
21 (SD) D N A SA	22 SD (D) N A SA	23 SD D (N) A SA	24 SD D N (A) SA	25 SD D N A (SA)
26 (SD) D N A SA	27 SD (D) N A SA	28 SD D (N) A SA	29 SD D N (A) SA	30 SD D N A (SA)
31 (SD) D N A SA	32 SD (D) N A SA	33 SD D (N) A SA	34 SD D N (A) SA	35 SD D N A (SA)
36 (SD) D N A SA	37 SD (D) N A SA	38 SD D (N) A SA	39 SD D N (A) SA	40 SD D N A (SA)
41 (SD) D N A SA	42 SD (D) N A SA	43 SD D (N) A SA	44 SD D N (A) SA	45 SD D N A (SA)
46 (SD) D N A SA	47 SD (D) N A SA	48 SD D (N) A SA	49 SD D N (A) SA	50 SD D N A (SA)
51 (SD) D N A SA	52 SD (D) N A SA	53 SD D (N) A SA	54 SD D N (A) SA	55 SD D N A (SA)
56 (SD) D N A SA	57 SD (D) N A SA	58 SD D (N) A SA	59 SD D N (A) SA	60 SD D N A (SA)

Have you responded to all of the statements? _____ Yes _____ No

Have you entered your responses in the correct boxes? _____ Yes _____ No

Have you responded accurately and honestly? _____ Yes _____ No

wasi™ WECHSLER *ABBREVIATED* SCALE OF INTELLIGENCE™

Record Form

Name _____ ID _____

Address/School _____ Grade/ Highest Education _____

Examiner _____

	Year	Month	Day
Date of Testing			
Date of Birth			
Age			

Subtest Scores

Subtest	Raw Score	*T* Score
Vocabulary		
Block Design		
Similarities		
Matrix Reasoning		

Sums of *T* Scores: Verbal | Performance | 4-Subtest | 2-Subtest | Full Scale

Profile of Subtest Scores

Verbal		Performance	
V	S	BD	MR

80 75 70 65 60 55 50 45 40 35 30 25 20

Profile of IQ Scores

VIQ	PIQ	FSIQ

160 155 150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50

	WASI IQ Scores				Prediction Intervals			
	Sum of *T* Scores	IQ	Percentile	___% Confidence Interval	WISC–III 90%	WISC–III 68%	WAIS–III 90%	WAIS–III 68%
Verb.				–				
Perf.				–				
Full–4				–	–	–	–	–
Full–2				–				

0154981532

16 17 18 19 20 21 A B C D E 281099-1 321

ISBN 015-4981-53-2

9 780154 981530

1. Vocabulary

Start Point
Ages 6–8: Item 5
Ages 9–89: Item 9

Reverse Rule
All Ages: Administer Items 1–4 in forward sequence if score of 0 or 1 on Item 5 or 6.

Ages 9–89: Administer Items 5–8 in reverse sequence if score of 0 or 1 on Item 9 or 10.

Discontinue Rule
After 5 consecutive scores of 0

Stop Point
Ages 6–8: After Item 30
Ages 9–11: After Item 34
Ages 12–16: After Item 38
Ages 17–89: No stop point

Scoring Rule
Items 1–4: 0 or 1
Items 5–42: 0, 1, or 2

Item	Response	Score
		(0 or 1)
1. Fish		
2. Shovel		
3. Map		
4. Shell		
		(0, 1, 2)
6–8 5. Shirt		
6. Shoe		
7. Flashlight		
8. Car		
9–89 9. Bird		
10. Calendar		
11. Number		
12. Bell		
13. Lunch		
14. Police		
15. Vacation		
16. Pet		
17. Balloon		
18. Transform		
19. Alligator		

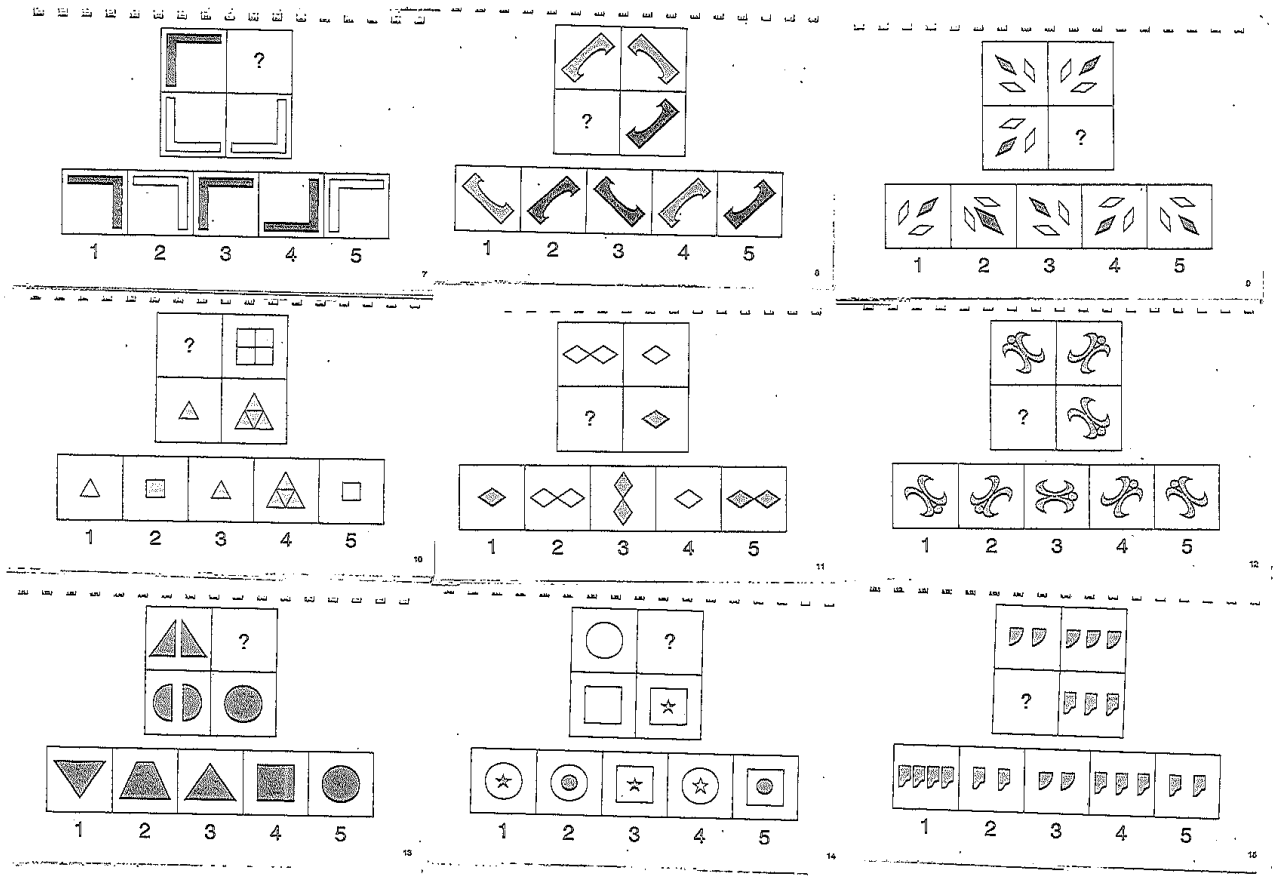
Continue

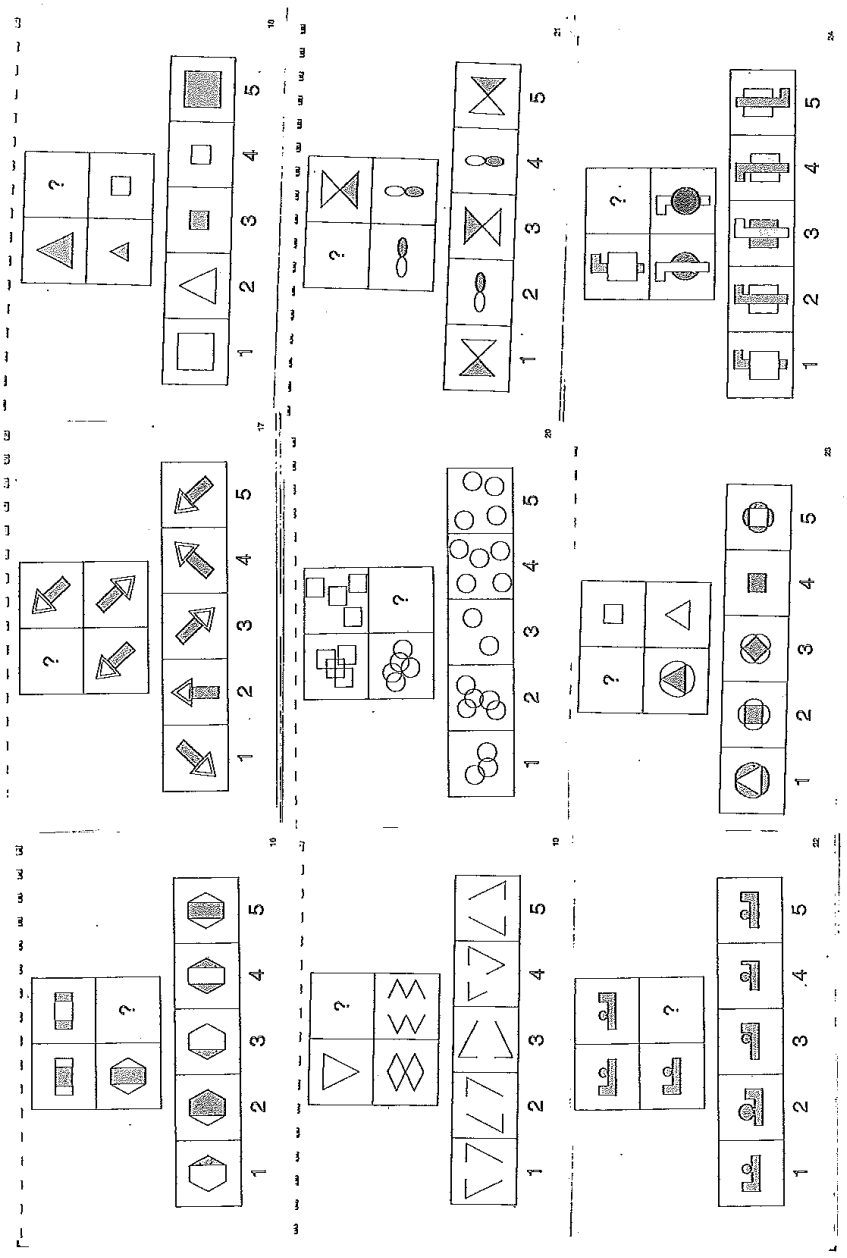
1. Vocabulary *(Continued)*

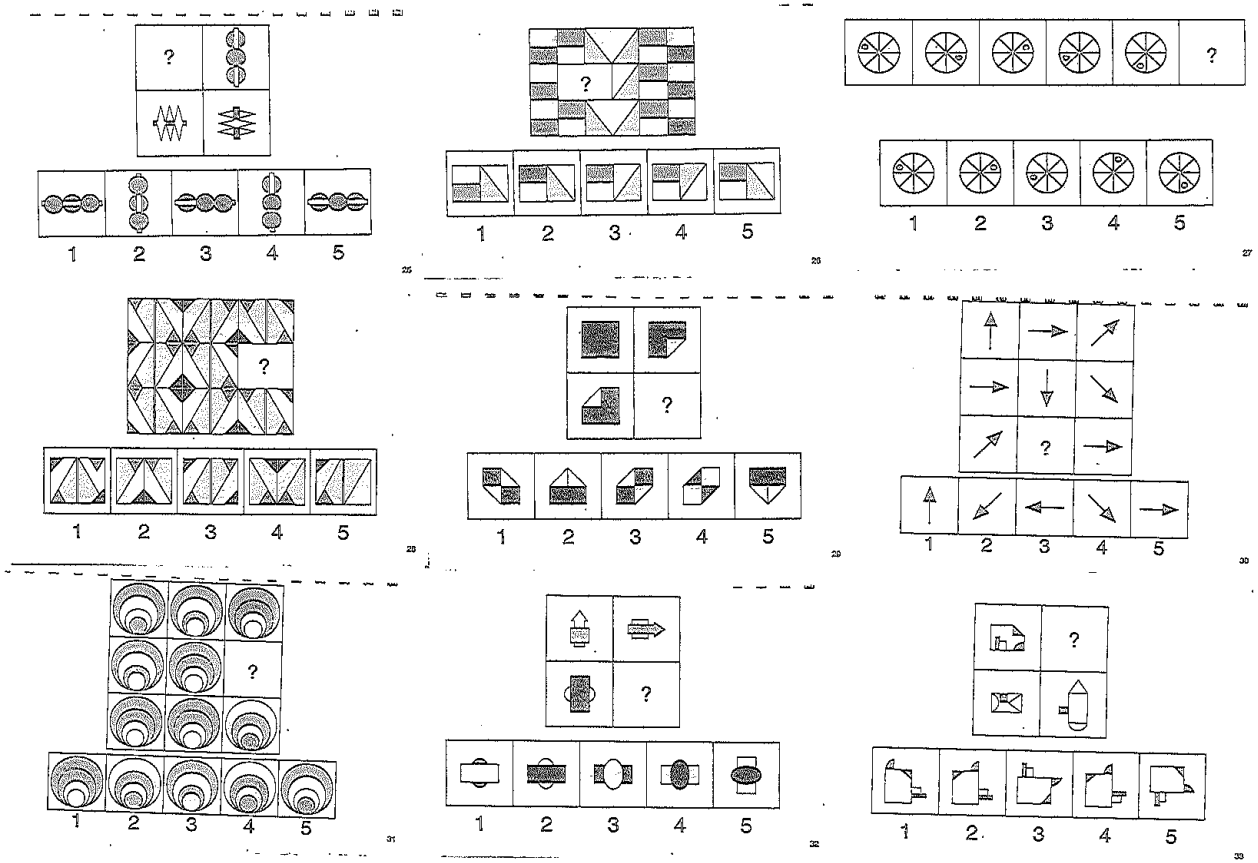
	Item	Response	Score (0, 1, 2)
	20. Cart		
	21. Blame		
	22. Dance		
	23. Purpose		
	24. Entertain		
	25. Famous		
	26. Reveal		
	27. Decade		
	28. Tradition		
	29. Rejoice		
6–8 STOP	30. Enthusiastic		
	31. Improvise		
	32. Impulse		
	33. Haste		
9–11 STOP	34. Trend		
	35. Intermittent		
	36. Devout		
	37. Impertinent		
12–16 STOP	38. Niche		
	39. Presumptuous		
	40. Formidable		
	41. Ruminate		
	42. Panacea		

Maximum Raw Score
Ages 6–8: 56
Ages 9–11: 64
Ages 12–16: 72
Ages 17–89: 80

Total Raw Score ____


?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5




?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5
?
1 2 3 4 5

?
1 2 3 4 5
?
1 2 3 4 5

Appendix I: Lasater Clinical Judgment in Simulation Rubric

RUBRIC DEVELOPMENT

LASATER CLINICAL JUDGMENT IN SIMULATION RUBRIC (First Draft)

Student Initials: Date/Time of Observation:Last four digits of SS#:

Component of Clinical Judgment	Indicators of Success
Noticing	Notes differences from patient's normal state in a timely manner; uses objective (e.g., blood pressure, oxygen saturation) and subjective cues (e.g., patient's color, verbal statements, facial expressions); listens actively to patient/family; pays attention to intuitive to gut feelings
Interpreting	Uses observable/measurable data; prioritizes data; pays attention to intuitive gut feeling (this is the hardest area to observe in real time, mostly retrospective); looks for additional pertinent data
Responding	Multi-tasks or thinking of more than one thing at once; gives clear direction, articulating a plan, to patient/family/team and realistic reassurance to patient/family; uses touch and voice appropriately and effectively; demonstrates a prioritization of interventions; able to stand back when overwhelmed and regroup
Evaluating	Verbalizes and self-reflects both during and after the experience; identifies more than one alternative for decision made; articulates critical junctures/decision points; self-corrects, identifying actions he/she might have done differently as well as actions that were appropriate

Component of Clinical Judgment	Indicators of Non-Success
Noticing	Frozen by barrage of stimuli; inability to focus or confused; caught up in other lower priority activities/thinking; unable to notice obvious changes; disengaged from patient/family, no eye contact or reflecting on statements; relies only on objective data, even actively negating subjective data
Interpreting	Same as above; unable to articulate connections between data and patient's condition
Responding	Can do only one thing at a time; frazzled and disorganized; demonstrates labile emotions or lack of action; gives double messages to patient/family/team; prioritizes poorly; demeanor and/or voice indicate frustration, panic, anger, lack of coping
Evaluating	Lack of self-reflection during or after experience; inflexible, closed-minded; denies meaning/importance of the experience; "my way is the right way"; cannot identify critical junctures/decision points; cannot verbalize alternative or appropriate actions; hypercritical of self; may demonstrate unrelenting unrealism in self-performance

Observation Sheet

Noticing	**Interpreting**	**Responding**	**Evaluating**
Observations	Observations	Observations	Observations

Lasater Clinical Judgment in Simulation Rubric
Noticing and Interpreting

Clinical Judgment Component:	4: Accomplished	3: Competent	2: Progressing Novice	1: Novice
Effective NOTICING involves: Focused Observation	• Focuses observation appropriately; regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information	• Regularly observes/monitors a variety of data, including both subjective and objective; most useful information is noticed, may miss the most subtle signs	• Attempts to monitor a variety of subjective and objective data, but is overwhelmed by the array of data; focuses on the most obvious data, missing some important information	• Confused by the clinical situation and the amount/type of data; observation is not organized and important data is missed, and/or assessment errors are made
Recognizing Deviations from Expected Patterns	• Recognizes subtle patterns and deviations from expected patterns in data and uses these to guide the assessment	• Recognizes most obvious patterns and deviations in data and uses these to continually assess	• Identifies obvious patterns and deviations from expectations, missing some important information; unsure how to continue the assessment	• Focuses on one thing at a time and misses most patterns/ deviations from expectations; misses opportunities to refine the assessment
Information Seeking	• Aggressively seeks information to plan intervention: carefully collects useful subjective data from observing the client and from interacting with the client and family	• Actively seeks subjective information about the client's situation from the client and family to support planning interventions; occasionally does not pursue important leads	• Makes limited efforts to seek additional information from the client/family; often seems not to know what information to seek and/or pursues unrelated information	• Is ineffective in seeking information; relies mostly on objective data; has difficulty interacting with the client and family and fails to collect important subjective data
Effective INTERPRETING Involves:	• Focuses on the most relevant and important data useful for explaining the client's condition	• Generally focuses well on the most important data, and seeks further relevant information, but also tries to attend to less pertinent data	• Makes an effort to prioritize data and focus on the most important, but also attends to less relevant/useful data	• Has difficulty focusing and appears not to know which data is most important to the diagnosis; attempts to attend to all available data
Prioritizing Data Making Sense of Data	• Even when facing complex, conflicting or confusing data, is able to (1) note and make sense of patterns in the client's data, (2) compare these with known patterns (from the nursing knowledge base, research, personal experience and intuition), and (3) develop plans for intervention(s) that can be justified in terms of their likelihood of success	• In most situations, interprets the client's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or complicated cases where it is appropriate to seek the guidance of a specialist or more experienced nurse	• In simple or common/familiar situations, is able to compare the client's data patterns with those known and to develop/ explain intervention plans; has difficulty, however, with even moderately difficult data/ situations that are within the expectations for students, inappropriately requires advice or assistance	• Even in simple or familiar/ common situations has difficulty interpreting or making sense of data; has trouble distinguishing among competing explanations and appropriate interventions, requiring assistance both in diagnosing the problem and in developing an intervention

Lasater Clinical Judgment in Simulation Rubric
Responding and Evaluating

Clinical Judgment Component:	4: Accomplished	3: Competent	2: Progressing Novice	1: Novice
Effective RESPONDING involves: Calm, Confident Manner Clear Communication Well-Planned Intervention/ Flexibility Being Skillful	• Assumes responsibility: delegates team assignments, assesses the client and reassures them and their families • Communicates effectively: explains interventions; calms/ reassures clients and families; directs and involves team members, explaining and giving directions; checks for understanding • Interventions are tailored for the individual client; monitors client progress closely and is able to adjust treatment as indicated by the client response • Show mastery of necessary nursing skills	• Generally displays leadership and confidence, and is able to control/calm most situations; may show stress in particularly difficult or complex situations • Generally communicates well: explains carefully to clients, gives clear directions to team; could be more effective in establishing rapport • Develops interventions based on relevant patient data; monitors progress regularly but does not expect to have to change treatments • Displays proficiency in the use of most nursing skills; could improve speed or accuracy	• Is tentative in the leader's role; reassures clients/families in routine and relatively simple situations, but becomes stressed and disorganized easily • Shows some communication ability (e.g., giving directions); communication with clients/ families/team members is only partly successful; displays caring but not competence • Develops interventions based on the most obvious data; monitors progress, but is unable to make adjustments based on the patient response • Is hesitant or ineffective in utilizing nursing skills	• Except in simple and routine situations, is stressed and disorganized, lacks control, making clients and families anxious/less able to cooperate • Has difficulty communicating; explanations are confusing, directions are unclear or contradictory, and clients/ families are made confused/ anxious, not reassured • Focuses on developing a single intervention addressing a likely solution, but it may be vague, confusing, and/or incomplete; some monitoring may occur • Is unable to select and/or perform the nursing skills
Effective EVALUATING Involves: Reflection/ Self-Analysis Commitment to Improvement	• Independently reflects on/ analyzes personal clinical performance, noting decision points, elaborating alternatives and accurately evaluating choices against alternatives • Demonstrates commitment to ongoing improvement: reflects on and critically evaluates nursing experiences; accurately identifies strengths/weaknesses and develops specific plans to eliminate weaknesses	• Reflects on/analyzes personal clinical performance with minimal prompting, primarily major events/decisions; key decision points are identified and alternatives are considered • Demonstrates a desire to improve nursing performance: reflects on and evaluates experiences; identifies strengths/weaknesses; could be more systematic in evaluating weaknesses	• Even when prompted, briefly verbalizes the most obvious reflections; has difficulty imagining alternative choices; is self-protective in evaluating personal choices • Demonstrates awareness of the need for ongoing improvement and makes some effort to learn from experience and to improve performance but tends to state the obvious, and needs external evaluation	• Even prompted reflections are brief, cursory, and not used to improve performance; justifies personal decisions/choices without evaluating them • Appears uninterested in improving performance or unable to do so; rarely reflects; is uncritical of him/herself, or overly critical (given level of development); is unable to see flaws or need for improvement

References

Adams, B. L. (1999). Nursing education for critical thinking: An integrative review. *Journal of Nursing Education*, 38(3), 111-119.

Agency for Healthcare Research and Quality. (2009). Retrieved June10, 2009 from https://www.cahps.ahrq.gov/default.asp.

Aiken L. H., Clarke, S. P., & Sloane D. M. (2001). Hospital restructuring: Does it adversely affect care and outcomes? *Journal of Health and Human Services Administration,* 23, 416-442.

Alexander, C., Campbell D., Leiferman, J., Mabey, G., Marken, S., Myers, C., … Zwingman-Bagley, C. (2003). Quality improvement processes in growing a service line: The myriad of opportunities. *Nursing Administration Quarterly*, 27(4), 297-306.

Aluja, A., Blanch, A., Sole, D., Dolcet, J. M., & Gallart, S. (2009). Shortened version of the NEO-PI-R: The NEO-FFI versus the NEO-FFI-R. *Behavioral Psychology*, 17(2), 335-350.

Ajzen, I. (1988). Attitudes, personality, and behavior. Retrieved February 11, 2009 from www-unix.oit.umass.edu.

American Hospital Association. (2009). The economic crisis: The toll on the patients and communities hospitals serve. Retrieved August 21, 2009 from http://www.aha.org/aha/content/2009/pdf/090427econcrisisreport.pdf.

American Nurses Credentialing Center (2009). *Application Manual: Magnet Recognition Program*®. Silver Springs: American Nurses Credentialing Center.

Axelrod, B. N. (2002). Validity of the Wechsler Abbreviated Scale of Intelligence and other very short forms of estimating intellectual functioning. *Assessment*, 9, 17-23.

Barrick, M. R. & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44, 1-26.

Barrick, M. R., Mount, M. K, & Judge, T. A. (2001). Personality and Performance at the beginning of the millennium: What do we know and where do we go next? *Personality and Performance*, 9, 9-30.

Barrick, M. R., Mount, M. K., & Strauss, J. P. (1993). Conscientiousness and performance of sales representatives: Test of the mediating effects of goal-setting. *Journal of Applied Psychology*, 78, 715-722.

Beck, S., Bennett, A., McLeod, R., & Molyneaux, D. (1992). Review of research on critical thinking. In *Review of research in nursing education, Volume 5*, (pp 1-30). New York: National League for Nursing.

Beecroft, P. C., Kunzman, L., & Krozek, C. (2001). RN internship: Outcomes of a one-year pilot program. *Journal of Nursing Administration*, 31(12), 575-582.

Benner, P. (1984). *Novice to expert: Excellence and power in clinical nursing practice*. California: Addison-Wesley.

Benner, P., Tanner, C. A., & Chesla, C. A. (1996). *Expertise in nursing practice: Caring, clinical judgment, and ethics*. New York, NY: Springer Publishing Company.

Blair, C. (2006). How similar are fluid cognition and general intelligence? A developmental neuroscience perspective on fluid cognition as an aspect of human cognitive ability. *Behavior and Brain Sciences*, 29, 109-160.

Blattner, J. & Bacigalupo, A. (2007). Using emotional intelligence to develop executive leadership and team and organizational development. *Consulting Psychology Journal*, 59(3), 209-219.

Brennan, C. W. & Daly, B. J. (2009). Patient acuity: a concept analysis. *Journal of Advanced Nursing*, 65(5), 1114-26.

Burdick, K. E., Lencz, T., Funke, B., Finn, C. T., Szeszko, P. R., Kane, J. M., … Malhotra, A. K. (2006). Genetic variation in DTNBP1 influences general cognitive ability. *Human Molecular Genetics*, 15, 1563-1568.

Buyske, S., Bates, M. E., Ghereni, N., Matise, T. C., Tischfield, J.A., & Manowitz, P. (2006). Cognitive traits link to human chromosomal regions. *Behavior Genetics*, 36, 65-76.

Carriere, B., Gagnon, R., Charlin, B., Downing, S., & Bordage, G. (2009). Assessing clinical reasoning in pediatric emergency medicine validity evidence for a Script Concordance Test. *Annals of Emergency Medicine*, 53(5), 647-652.

Casey, K., Fink, R., Krugman, M., & Propst, J. (2004). The graduate nurse experience. *Journal of Nursing Administration*, 34(6), 303-311.

Cavanaugh, J. C. & Blanchard-Fields, F. (2006). *Adult development and aging* (5th ed.). Belmont, CA: Wadsworth Publishing/Thomson Learning.

Ceci, S. J. (1991). How much does schooling influence general intelligence and its cognitive components? A reassessment of the evidence. *Developmental Psychology*, 27, 703-722.

Centers for Medicare & Medicaid Services. (2009). Retrieved June 10, 2009 from http://www.cms.hhs.gov/.

Colucciello, M. L. (1997). Critical thinking skills and dispositions of baccalaureate nursing students: A conceptual model for evaluation. *Journal of Professional Nursing*, 13(4), 236-45.

Connelly, L. M. & Hoffart, N. (1998). A research-based model of nursing orientation. *Journal of Nursing Staff Development*, 14, 31-39.

Costa, P. T., Jr. & McCrae, R. R. (2005). Five Factor Inventory; NEO-FFI. Retrieved November 11, 2009 from http://www3.parinc.com/products/product.aspx?Productid=NEO_FFI.

Costa, P. T., Jr. McCrae, R. R., & Dye, D. A. (1991). Facet scales for agreeableness and conscientiousness: A revision of NEO personality inventory. *Personality and Individual Differences*, 12 (9), 887-898.

DeVellis, R. (2003). *Scale Development: Theory and Applications* (2nd ed.). Newbury Park, CA: Sage.

Dove, J. T., Weaver, W. D., & Lewin, J. (2009). Professional accountability in health system reform. *Journal of the American College of Cardiology*, 54(6), 499-501.

Dreary, I. J., Spinath, F. M., & Bates, T. C. (2006). Genetics of intelligence. *European Journal of Human Genetics,*14, 690-700.

Dziuban, C. D. & Shirkey, E. C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. *Psychological Bulletin*, 81(6), 358-361.

Ebright, P. R., Patterson, E. S., Chalko, B. A., & Render, M. L. (2003). Understanding the complexity of registered nurse work in acute care settings. *Journal of Nursing Administration*, 33(12), 630-8.

Edwards, S. L. (2007). Critical thinking: A two-phase framework. *Nurse Education in Practice*, 7, 303-314.

Emmerich, W., Rock, D. A., & Trapani, C. S. (2005). Personality in relation to occupational outcomes among established teachers. *Journal of Research in Personality*, 40, 501-528.

Ennis, R. H. (1985). A logical basis for measuring critical thinking skills. *Educational Leadership*, 43, 44-48.

Facione, N. C. & Facione, P. A. (2008). *Critical thinking and clinical reasoning in the health sciences: An international multidisciplinary teaching anthology*. Millbrae, CA: The California Academic Press.

Ferketich, S. (1991). Aspects of item analysis. *Research in Nursing & Health*, 14, 165-168.

Fesler-Birch, D. M. (2005). Critical thinking and patient outcomes: A review. *Nursing Outlook*, 53(2), 59-65.

Floyd, B. O., Kretschmann, S., & Young, H. (2005). Facilitating role transition for new graduate RNs in a semi-rural healthcare setting. *Journal for Nurses in Staff Development*, 21(6), 284-290.

Friedman, N. P., Miyake, A., Corley, R. P., Young, S. E., DeFries, J. C., & Hewitt, J. K. (2006) Not all executive functions are related to intelligence. *Psychological Science*, 17, 172-179.

Gagnon, R., Charlin, B., Roy, L., St-Martin, M., Sauve, E., Boshuizen, H. P. A., & Van der Vleuten, C. (2006). The cognitive validity of the Script Concordance Test: A processing time study. *Teaching and Learning in Medicine*, 18(1), 22-27.

Gaughan E. T., Miller J. D., Pryor L. R., & Lynam, D. R. (2009). Comparing Two Alternative Measures of General Personality in the Assessment of Psychopathy: A Test of the NEO PI-R and the MPQ. *Journal of Personality*, 77(4), 965-996.

Giacovelli, J. K., Egorova, N., Nowygrod, R., Gelijns, A., Kent, K. C., & Morrissey, N. J. (2008). Insurance status predicts access to care and outcomes of vascular disease. *Journal of Vascular Surgery*, 48(4), 905-11.

Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. J*ournal of Personality and Social Psychology*, 70, 820-835.

Gubrud-Howe, P. (2008). Development of clinical judgment in nursing students: A learning framework to use in designing and implementing simulated learning experiences. Unpublished manuscript. Portland State University.

Harper K. & McCully C. (2007). Acuity systems dialogue and patient classification system essentials. *Nursing Administration Quarterly*, 31(4), 284-99.

Hartman, R. O. & Betz, N. E. (2007). The five factor model and career self-efficacy: General and domain-specific relationships. *Journal of Career Assessment*, 15, 145-161.

Healthcare Facilities Accreditation Program Accreditation. (2009). *Requirements for Healthcare Facilities.*

Herbst, J. H., Zonderman, A. B., McCrae, R. R., & Costa, P. T. (2000). Do the dimensions of the temperament and character inventory map a simple genetic architecture? Evidence from molecular genetics and factor analysis. *American Journal of Psychiatry*, 157, 1285-1290.

Hickman, J. S. (1993). A critical assessment of critical thinking in nursing education. *Holistic Nursing Practice*, 7, 36-47.

Howard, P. J. & Howard, J. M. (2004). The Big Five Quickstart: An introduction to the five-factor model of personality, Center for Applied Cognitive Studies. Retrieved on July 10, 2007 from http://www.centacs.com/quickstart.htm.

Hospital Consumer Assessment of Healthcare Providers and Systems. (2012). Retrieved on March 27, 2012 from https://www.cms.gov/HospitalQualityInits/30_HospitalHCAHPS.asp.

Huber, D. L. (2006). *Leadership and nursing care management* (3rd ed.). Philadelphia, PA: Saunders Elsevier.

Hunt, E. (1995). The role of intelligence in modern society. *American Scientist*, 83(4), 356-368.

Indiana State Department of Health. (2009). *Hospital Licensing and Certification program.* Retrieved October 12, 2009 from http://www.in.gov/isdh/20111.htm.

Insight Assessment. (2008). Retrieved April 6, 2009 from http://www.insightassessment.com/Scales%20HSRT.html. California Academic Press.

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st Century*. Washington, D.C.: National Academy Press.

Institute of Medicine. (2010). *The future of nursing: Leading change, advancing health*. Washington, D.C.: National Academy Press.

Jones, C. B. (2008). Revisiting nurse turnover costs: Adjusting for inflation. *Journal of Nursing Administration*, 38(1), 11-18.

Joseph, D. L. & Newman, D. A. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology*, 95(1), 54-78.

Judge, T. A., LePine, J. A., & Bruce, L. R. (2006). Loving yourself abundantly: Relationship of the narcissistic personality to self- and other perceptions of workplace deviance, leadership, and task and contextual performance. *Journal of Applied Psychology*, 91(4), 762-776.

Kataoka-Yahiro M. & Saylor C. (1994). A critical thinking model for nursing judgment. *Journal of Nursing Education*, 33(8), 351-356.

Knapp, T. R. & Brown, J. K. (1995). Ten measurement commandments that often should be broken. *Research in Nursing and Health*, 18, 465-469.

Koerner, A., Geyer, M., Roth, M., Drapeau, M., Schmutzer, G., Albani, C., … Brahler, E. (2008). Personality assessment with the NEO-Five Factor Inventory: The 30-item-short-version. *Psychotherapy Psychosomatic Medicine Psychology*, 58(6), 238-245.

Kossman, S. P. & Scheidenhelm, S. L. (2008). Nurses' perceptions of the impact of electronic health records on work and patient outcomes. *CIN: Computers, Informatics, Nursing*, 26(2), 69-77.

Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2004). Academic performance, career potential, creativity, and job performance: Can one construct predict them all? *Journal of Personality and Social Psychology*, 86, 148-161.

Kuzmiak, C. M., Haberle, S., Padungchaichote, W., Zeng, D., Cole, E., & Pisano, E. D. (2008). Insurance status and the severity of breast cancer at the time of diagnosis. *Academic Radiology,* 15(10), 1255-8.

Lampe, K., Stratton, K., & Welsh, J. R. (2011). Evaluating orientation preferences of the Generation Y new graduate nurse. *Journal for Nurses in Staff Development*, 27(4), E6-9.

Landis, J. R. & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 53, 159-174.

Lasater K. (2007). Clinical judgment development: Using simulation to create an assessment rubric. *Journal of Nursing Education*, 46(11), 496-503.

Lauder, W. & James, B. (2001). A comparison of critical thinking skills in standard and non-standard entry diploma students. *Nurse Education in Practice*, 1(4), 212-220.

Lindy, C. & Reiter, P. (2006). The financial impact of staff development. *Journal of Continuing Education in Nursing*, 37(3), 121-127.

Lodi-Smith, J. & Smith, B. W. (2007). Social investment and personality: A meta-analysis of the relationship of personality traits to investment in work, family, and volunteerism. *Personality and Social Psychology Review,* 11(1), 68-86.

Lubarsky, S., Chalk, C., Kazitani, D., Gagnon, R., & Charlin, B. (2009). The Script Concordance Test: A new tool assessing clinical judgment in neurology. *The Canadian Journal of Neurological Sciences*, 36(3), 326-331.

Lubinski, D. (2004). Introduction to special section on cognitive abilities: 100 years after Spearman's (1904) "'General Intelligence' Objectively Determined and Measured'". *Journal of Personality and Social Psychology,* 86, 1-11.

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, 35, 382-385.

Marcum, E. H. & West, R. D. (2004). Structured orientation for new graduates: A retention strategy. *Journal for Nurses in Staff Development,* 20, 118-124.

Maxwell, K.L. (2011). The implementation of the UHC/AACN new graduate nurse residency program in a community hospital. *Nursing Clinics of North America,* 46(1), 27-33.

Mayer, J. & Salovey, P. (1997). What is emotional intelligence? In *Emotional development and emotional intelligence: Educational implications*, (pp. 3-31). New York, NY: Perseus Books Group.

McCrae, R. R., and Costa, P. T. Jr. (1991). The NEO Personality Inventory: Using the five-factor model in Counseling. *Journal of Counseling and Development*, 69, 367-372.

McCrae, R. R, Jang, K. L., Livesly, W. J., Riemann, R., & Angleitner, A. (2001). Sources of structure: Genetic, environmental, and artifactual influences on the covariation of personality traits. *Journal of Personality*, 69, 511-535.

McCrae, R. R. & John, O. P. (1992). An introduction to the five factor model and its applications. *Journal of Personality*, 60, 175-215.

McMullen, M. A. & McMullen, W. F. (2007). Examining the patterns of change in the critical thinking skills of graduate nursing students. *Journal of Nursing Education,* 48(6), 310-318.

Meterissian, S., Zabolotny, B., Gagnon, R., & Charlin, B. (2007). Is the Script Concordance Test a valid instrument of intraoperative decision-making skills? *The American Journal of Surgery,* 193, 248-251.

Morrow, S. (2009). New graduate transitions: Leaving the nest, joining the flight. *Journal of Nursing Management*, 17, 278–287.

Nadzam, D. M. (2009). Nurses' role in communication and patient safety. *Journal of Nursing Care Quality*. 24(3), 184-188.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. Thousand Oaks, CA: Sage.

Newhouse, R. P., Hoffman, J. J., Suflita, J., & Hairston, D. P. (2007). Evaluating an innovative program to improve new nurse graduate socialization into the acute healthcare setting. *Nursing Administration Quarterly*, 31, 50-60.

Newton, M. F., Keirns, C. C., Cunningham, R., Hayward, R. A., & Hairston, D. P. (2008). Uninsured adults presenting to US emergency departments: Assumptions vs. data. *Journal of the American Medical Association*, 300(16), 1914-1924.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill, 245-246.

Nurses' Credentialing Center (2000). Reversing the Flight of Talent. The Health Care Advisory Board Company.

Pallant, J. (2007). SPSS Survival Manual (3rd ed.). New York: Open University Press.

Pesut, D. J. & Herman, J. (1999). *Clinical reasoning: The art and science of critical and creative thinking*. Albany, NY: Delmar Publishers.

Petrill, S. A., Lipton, P. A., Hewitt, J. K., Plomin, R., Cherny, S. S., Corley, R., & DeFries, J. C. (2004). Genetic and environmental contributions to general cognitive ability through the first sixteen years of life. *Developmental Psychology*, 40, 805-812.

Plomin, R. & Spinath, F. M. (2004). Intelligence: Genetics, genes, and genomics. *Journal of Personality and Social Psychology*, 86, 112-129.

Polit, D. F. & Beck, C. T. (2004). *Nursing research: Principles and methods*. Philadelphia, PA: Lippincott, Williams, and Wilkins.

Poropat, A. E. (2009). A meta-analysis of the Five Factor Model of personality and academic performance. *American Psychological Association*, 135(2), 322-338.

PricewaterhouseCoopers' Health Research Institute. (2007). What works: Healing the healthcare staffing shortage. Retrieved December 1, 2009 from http://pwchealth.com/cgi-local/hregister.cgi?link=reg/pubwhatworks.pdf.

Ree, M. J. & Earles, J. A. (1991). Predicting training success: Not much more than g. *Personnel Psychology*, 44, 321-332.

Riddle, T. (2007). Critical thinking assumptions: Thinking critically about critical thinking. *Journal of Nursing Education*, 46(3), 121-126.

Riemann, R,, Grubich, C., Hempel, S., Mergl, S., & Richter, M. (1993). Personality and attitude towards current political topics. *Personality and Individual Differences*, 15, 313-321.

Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin,* 132, 1-25.

Romyn, D. M., Linton, N., Giblin, C., Hendrickson, B., Limacher, L. H., Murray C., … Weidner A. Zimmel CM. (2009). Successful transition of the new graduate nurse. *International Journal of Nursing Education Scholarship*. 6(1), 1-17.

Ryan, J. J., Carruthers, C. A., Miller, L. J., Souheaver, G. T., Gontkovsky, S. T., & Zehr, M. D. (2003). Exploratory factor analysis of the Wechsler Abbreviated Scale of Intelligence in adult standardization and clinical samples. *Applied Neuropsychology,* 10(4), 252-256.

Scheffer, B. K. & Rubenfeld, M. G. (2000). A consensus statement on critical thinking in nursing. *Journal of Nursing Education,* 39(8), 352-359.

Schmidt, F. L. & Hunter, J. (2004). General Mental Ability in the world of work: Occupational attainment and job performance. *Journal of Psychology and Social Psychology,* 86, 162-173.

Schmidt, F. L. & Hunter, J. (2006). General Mental Ability in the world of work: Occupational attainment and job performance. *Journal of Personality and Social Psychology,* 86, 162-173.

Sigma Assessment Systems. (2007). Retrieved September 3, 2008 from http://www.sigmaassessmentsystems.com/information/about.asp.

Spearman, C. (1904). General Intelligence. *American Journal of Psychology,* 15, 201-292.

Spelic, S. S., Parsons, M., Hercinger, M., Andrews, A., Parks, J. & Norris J. (2001). Evaluation of critical thinking outcomes of a BSN program. *Holistic Nursing Practice*, 15(3), 27-34

Tabachnick, B. G. & Fidell, L. S. (20017) *Using multivariate statistics* (5th Ed). Boston: Peason Education.

Tanner, C. A. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. *Journal of Nursing Education*, 45(6), 204-11.

The Joint Commission on the Accreditation of Healthcare Organizations. (2005). *Comprehensive Accreditation Manual for Hospitals*. Washington, D.C.: The Joint Commission on the Accreditation of Healthcare Organizations.

The Joint Commission on the Accreditation of Healthcare Organizations. (2009). *2009 National Patient Safety Goals Manual Chapter*. Retrieved October 15, 2009 from http://www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals/09_hap_npsgs.htm.

The Psychological Corporation. (2009). Wechsler Abbreviated Scale of Intelligence (WASI). Retrieved November 11, 2009 from http://www.pearsonassessments.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=015-8981-502.

Thomason, T. R. (2006). ICU nursing orientation and post orientation practices: A national survey. *Critical Care Nursing Quarterly*, 29, 237-245.

Tishman, S. & Andrade, A. (2008). Thinking dispositions: A review of current theories, practices, and issues. Retrieved April 3, 2009 from learnweb.harvard.edu/alps/thinking/docs/Dispositions.htm.

United States Department of Labor; Bureau of Labor Statistics. (2012). Labor force statistics from the current population survey. Retrieved March 27, 2012 from http://www.bls.gov/cps/.

Walker, K. C. & Avant, L. O. (2005) *Strategies for theory construction in nursing*. New Jersey: Pearson Prentice Hall.

Walsh, C. M. & Seldomridge, L. A. (2005). Critical thinking: Back to square two. *Journal of Nursing Education*, 45(6), 212-219.

Wechsler Adult Intelligence Scale website. (2004). Retrieved April 10, 2009 from http://www.wilderdom.com/personality/intelligenceWAISWISC.html.

Widiger T. A., Lowe J. R. (2007). Five-factor model assessment of personality disorder. *Journal of Personality Assessment*, 89(1), 16-29.

Wong, H. J., Caesar, M., Bandali, S., Agnew, J., & Abrams, H. (2009). Electronic inpatient whiteboards: improving multidisciplinary communication and coordination of care. *International Journal of Medical Informatics*, 78(4), 239-247.

Yen, M. & Lo, L. (2002). Examining test-retest reliability: An intra-class correlation approach. *Nursing Research*, 51(1), 59-62.

Zeidner, M., Roberts, R. D., & Matthews, G. (2008). The science of emotional intelligence: Concurrent consensus and controversies. *European Psychologist*. 13(1), 64-78.

Zori, S. & Morrison, B. (2009). Critical thinking in nurse managers. *Nursing Economics*, 27(2), 75-79, 98.

Zuzelo, P. R., Gettis, C., Hansell, A. W., & Thomas, L. (2008). Describing the influence of technologies on registered nurses' work. *Clinical Nurse Specialist,* 22(3), 132-140.

Curriculum Vitae

Caroline E. Sims

EDUCATION

Degree Granting Institution	Degree	Date Awarded
University of Indianapolis	BSN	May 1989
Indiana University	MSN	May 2008
Indiana University	PhD	November 2012

LICENSURE

Licensed as a Professional Registered Nurse Indiana, 1989 – present

CLINICAL APPOINTMENTS

Place	Title/Rank	Dates
Columbus Regional Hospital Columbus, IN	Staff Nurse – ICCU, PACU	1989 - 1992
	Nurse Manager Progressive Care Unit	1992 - 2005
	Nurse Manager Cardiac Cath Lab, Cardiodiagnostics, and Cardiac Rehab	1995 - 1996
	Project Advisor, Clinical Services	2005 - 2008
	Director Nursing Education and Clinical Simulation	2009 - present
Economic Opportunities 2015, Indiana Workforce Region 9	Project Manager	2008 - 2010

ACADEMIC APPOINTMENTS

Adjunct Faculty Indiana University School of Nursing, Bloomington, IN

Course	Credits	Title	Term	Enrollment
S482	3	Nursing Management Practicum	Fall 2011	10
S482	3	Nursing Management Practicum	Fall 2010	10
S482	3	Nursing Management Practicum	Spring 2010	12
L579	3	Nursing Administration Practicum	Fall 2008	9
S482	3	Nursing Management Practicum	Spring 2008	11
S482	3	Nursing Management Practicum	Spring 2005	8

Teaching Assistant Indiana University School of Nursing, Indianapolis, IN

Course	Credits	Title	Term	Enrollment
S481	3	Nursing Management -Spring 2008	Fall 2005	95 - 107 /semester

PROFESSIONAL SOCIETIES

Organization	Dates
American Organization of Nurse Executive	2006 - present
Sigma Theta Tau International Lambda Epsilon Chapter	1988 - present
Midwest Nursing Research Society	2007 - present
Society for Simulation in Healthcare	2008 - present

SERVICE

Professional Service

Organization Specific Service

Facilitator of the Magnet Nursing Fellowship Program	2005 - 2009
Liaison between Columbus Regional Hospital and schools of nursing	2005 - present

Community Service

- Board of Directors Indiana Center for Nursing
- Speaker for C4 Healthcare Careers Program in local high schools regarding healthcare careers with a focus on nursing
- Facilitator for Nursing 2000 "Day in the Life of a Nurse" job shadow program for high school students with Registered Nurses
- Nursing 2000 Advisory Council Member
- Indiana Nursing Workforce Development Center Board Member representative
- Support to schools of nursing in identifying potential nursing faculty from within Columbus Regional Hospital staff.
- Coordination of clinical experiences for students in our community whose nursing program requires they find their own clinical experiences
- Work on EcO15 workforce development project in order to develop a healthcare simulation labs in Economic Region 9 in southeastern Indiana
- C4 Advisory Committee for Health Careers- Bartholomew Consolidated School Corporation

Committee Service

- Co-Chair Student Nurse Program-redesigned the student nurse program to enhance student experience-we now have a waiting list of applicants — 1994
- Co-led Clinical Enhancement Program redesign (RN clinical ladder) — 1994
- Leader for AMI and CHF teams prior to addition of CNS role to CRH — 1994 - 1996
- Nurse manager member for leadership JCAHO prep planning — 1996 - 2002
- Developed and co-chaired Restraint Advisory Council — 1997
- Developed recommendations for education documentation in Care Manager (online clinical documentation system) — 1997
- Co-chair Nursing Pharmacy Process Improvement Team resulting in decreased turnaround time for medications from pharmacy, standardized medication administration process across units, and implementation of unit based pharmacists — 1998
- Pilot unit for unit based pharmacist, satisfaction improvement, and Report Express payroll system, supply room redesign, and paper supply reorder process — 1999
- Developed and led Nurse Manager Joint Commission Book Club — 1999
- Core Team Member for Magnet application/re-application — 2001 - present
- Nursing representative for the Patient Safety Steering Committee — 2003 - 2005
- Magnet Fellowship Team — 2005 - present
- Development of new nurse manager orientation program — 2007
- People Pillar Team — 2007 - 2009
- Growth and Innovation Pillar Team — 2009 - 2011
- Innovation Center Planning Team — 2010 - 2011
- Quality and Safety Theme Team — 2010 - present
- 2012

- Indiana Center for Nursing Board of Directors 2012
- Nurse Residency Sub-Committee Indiana Action Coalition 2012

HONORS

Academic Excellence Award for University of Indianapolis School of Nursing (BSN)	1989
Academic Award Indiana University School of Nursing (MSN)	2008
Extraordinary Story (Recognition of Service Excellence) Columbus Regional Hospital	2000 & 2007
Douglas J. Leonard Innovation Fellow	2011 - 2013

PROFESSIONAL ACTIVITIES

Presentations

Press Ganey National Client Conference; November 12, 2001; Chicago. *Columbus Regional Hospital: Journey to Excellence.*

Indiana Nurses in Staff Development Statewide Meeting; March 9, 2012; Columbus, IN. *Measuring Educational Outcomes*.

Publications

Sims CE. (2003). Increasing clinical, satisfaction, and financial performance through nurse-driven process improvement. *Journal of Nursing Administration*. 33(2):68-75.

Certification

Indiana University School of Public and Environmental Affairs, Indianapolis, Indiana, Certified Health Care Manager, December 2003.