Use Authorization

In presenting this dissertation in partial fulfillment of the requirements for an advanced degree at Idaho State University, I agree that the Library shall make it freely available for inspection. I further state that permission to download and/or print my dissertation for scholarly purposes may be granted by the Dean of the Graduate School, Dean of my academic division, or by the University Librarian. It is understood that any copying or publication of this dissertation for financial gain shall not be allowed without my written permission.

Signature _____
Date _____

The Internalization of Professional Nursing Values in Baccalaureate Nursing Students

by

Tamara Rose

A dissertation
submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in the Department of Nursing
Idaho State University

May 2016

Committee Approval Page

Mary Nies, PhD, RN, FAAN, FAAHB, Committee Chair

Signature_____Date_____

Karen Neill, PhD, RN, SANE, Committee Member

Signature_____Date_____

DJ Williams, PhD, Committee Member

Signature_____Date_____

Janette Olsen, PhD, Graduate Faculty Representative

Signature_____Date_____

Research Approval – Human Subjects

RE: regarding study number IRB-FY2015-115: The Internalization of Professional Nursing Values in Baccalaureate Nursing Students

Dear Ms. Rose:

I agree that this study qualifies as exempt from review under the following guideline: Category 2: Anonymous educational tests, surveys, interviews, or observations. This letter is your approval, please, keep this document in a safe place.

Notify the HSC of any adverse events. Serious, unexpected adverse events must be reported in writing within 10 business days.

You are granted permission to conduct your study effective immediately. The study is not subject to renewal.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Tom Bailey (208-282-2179; fax 208-282-4723; email: humsubj@isu.edu) if you have any questions or require further information.

Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

OREGON HEALTH&SCIENCE UNIVERSITY

Research Integrity Office, L106-RI
3181 SW Sam Jackson Park Road
Portland, OR 97239-3098
(503) 494-7887

Memo

Date: September 1, 2015

To: Tamara Rose, MSN, BSN

From: Kathryn Schuff, MD, MCR, Chair, Institutional Review Board
Elizabeth Haney, MD, Vice-Chair, Institutional Review Board
Lynn Marshall, SeD, Vice-Chair, Institutional Review Board
Penny Hogarth, MD, Vice-Chair, Institutional Review Board
Kara Manning Drolet, PhD, Associate Director, OHSU Research Integrity Office
Andrea Johnson, JD, CIP, Assistant Research Integrity Officer, Institutional Review Board
David Holmgren, MS, IRB Manager, Institutional Review Board
William Hoffman, PhD, MD, VA IRB Co-Chair

Subject: IRB00012002, The Internalization of Nursing Professional Values in Baccalaureate Nursing Students

Initial Study Approval

The above submission was reviewed and approved for one year effective 9-1-2015.

Review category: Exempt Category # 2

Copies of all approved documents are available in the study's Official Documents list in the eiRB. Any additional documents that require an IRB signature (e.g. liAs, IAAs, DUAs) will be posted when signed. If this applies to your study, you will receive a notification when these additional signed documents are available.

Ongoing IRB submission requirements:

- Six to ten weeks before the expiration date, you are to submit a continuing review to request continuing approval.
- Any changes to the project must be submitted for IRB approval prior to implementation.
- Unanticipated problems and protocol deviations must be submitted per OHSU policy.
- You are required to submit a termination request when your research is

completed. Guidelines for Study Conduct

In conducting this study, you are required to follow the guidelines in the document entitled, "Roles and Responsibilities in the Conduct of Research and Administration of Sponsored Projects," as well as all other applicable OHSU IRB Policies and Procedures.

Requirements under HIPAA

Ifyour study involves the collection, use, or disclosure of Protected Health Information (PHI), you must comply with all applicable requirements under HIPAA. See the HIPAA and Research website and the Information Privacy and Security website for more information.

Acknowledgments

Many individuals have supported and encouraged me through this educational endeavor of completing my study and doctoral program. I acknowledge the following individuals for their generosity in assisting me in obtaining my goals.

My dissertation committee provided continual support, expertise, and encouragement. Dr. Mary Nies, Chair, consistently encouraged me to expand my learning through participating in additional scholarly activities above my program requirements. She prompted me to submit 3 separate abstracts to professional conferences, all of which resulted in poster presentation, and encouraged me to write a manuscript for publication in a nursing journal, which published in January, 2016. Dr. Nies was also instrumental in nominating me for the Jonas Nurse Leaders scholarship which further expanded my professional exposure through involvement with state and national committees aimed to increase the number of nurses on boards, a RWJF campaign.

Dr. Karen Neill, committee member and faculty member at Idaho State University provided expert scholarly advice in regard to writing and instilled self confidence in my ability to achieve my goals. Her kindness and support are greatly appreciated. Dr. DJ Williams, committee member, offered a different lens for learning, aside from nursing, and guided my selection of the theoretical framework for my study. Additionally, Dr. Williams offered his expert skill and knowledge in developing a manuscript which we published jointly in August, 2015.

Joseph Reid, statistician, consulted on the statistical analysis of this study. He worked tirelessly with me to ensure my understanding of the statistical methods and results. I am grateful for his expertise and knowledge and his persistence in being certain the correct statistical methods were being applied.

I would also like to thank the campus associate deans and directors who made it possible for me to conduct my study on their perspective university campuses and for all of the nursing faculty and staff who encouraged students to participate in this important study.

Finally, I would like to thank my supportive husband and family whom sacrificed many important things for allowing me to complete my program and dissertation.

TABLE OF CONTENTS

List of Figures

List of Tables

ABSTRACT

A nurse's professional values are linked to the delivery of safe and quality patient care and work satisfaction and retention (Dempsey, 2009). Recognized as important for the development of professionalism, this study aimed to measure the personal perceived importance of nursing professional values of nursing students in the first, second, and third year of the baccalaureate nursing program and investigate the factors that foster the development of these values.

Self-Determination Theory (SDT) (Ryan & Deci, 2000) which postulates that competence, autonomy, and a sense of relatedness is essential for optimal functioning provided the framework for this study. Satisfying these innate needs in the process of becoming a professional nurse allows for the integration of the expectations set forth by the profession.

The study utilized a non-experimental descriptive design to measure the internalization of nursing professional values of baccalaureate nursing students and investigate the factors that foster the development of these values. Two research questions were posed: 1) Does the demonstration of value based behavior evident of caring, activism, trust, professionalism, and justice, increase between first, second, and third year baccalaureate nursing students? 2) What factors influence the internalization of nursing professional values?

The *Nurses Professional Values Scale –Revised (NPVS-R),* a 26-item, 5 factor scale and one open-ended question was used for data collection. The following single open-ended question was asked: What factors influenced the adoption of your nursing professional values? The study was conducted at a single university with four campus locations in the western United States.

The major finding of this study indicated all possible strata measured by the NPVS-R had similar abilities and similar response distributions on all characteristics. Differences by factor indicate males ascribe a lower value to the factor of caring as compared to females, non-Hispanic/non-Latino ascribe a lower value to the factor of activism as compared to Hispanic/Latino, and second and third year students ascribed a lower value to the factor of justice as compared to first year students. Responses to the open-ended question suggest values stem from personal circumstances, though educational activities and experiences also foster the internalization of professional values. Study results indicate further study of the internalization of professional values is recommended.

Chapter I: Introduction

Statement of Purpose

The individual's internalization of a professional value system is requisite for the development of professionalism. The purpose of this study was to measure the internalization of nursing professional values of baccalaureate nursing students in the first, second, and third year of the educational program and investigate the factors that fostered the development of these values. This study provides information for baccalaureate nursing education programs about the factors and the context for how professional values are internalized by nursing students. Results of this study may lead to changes in the nursing program application process as well as the timing, content, and delivery of value-laden specific curricula.

Background

A profession is described as a vocation with a body of knowledge and skills aimed at providing service to others (Arnold, 2002). Those working in the professions embody a knowledge that is greater informed than those they serve thus society grants certain rights and privileges into the profession with an expectation of service in return. The profession then has certain obligations to the society to uphold standards that include moral and ethical practice, to do no harm, to exercise moral behavior and reasoning, and to use the professions knowledge to treat and teach people and the public (Sills, 2000).

Professionalism is evident in the presence of behaviors such as displaying good conduct, integrity, trustworthiness, and altruism (Benatar, 1997). Professionalism is characterized through evidence of collaboration, credibility, compassion, and coordination. Additionally, it is regarded as image and conduct, thus the exhibition of behavior and dress can project either the presence or absence of professionalism

(Clickner & Shirey, 2013). Attributes of professionalism are also recognized through effective communication and team cohesion (Clickner & Shirey, 2013). Additionally, professionalism is demonstrated through behaviors evident of integrity and trust, respect for others, responsibility and a sense of duty, self-care and personal growth, team work and professional demeanor, concern for the welfare of others, continuous learning, and accountability and initiative (Primm, 2010).

Infusion of conscious and consistent instillation and integration of professional values is required for the internalization of professionalism (Fischer, 2014). Values are expressed in every human decision and represent the basic principle of doing what's right, good, and desirable, and provides foundational motivation for all social and professional behavior (Rassin, 2008). Values are expressed in attitude (Fisher, 2014) and govern priorities and are inferred by others through observed behaviors and actions (Scammell, 2014). The acquisition of values involves more than personal choice and requires learning through receiving new information, experience, and garnering external supports for developing and internalizing these values. A clear understanding of the meaning of values is necessary for one to grasp the meaning of opposing values or the values of a certain profession (Vezeau, 2006).

Professional values are authenticated by attitudes that shape behaviors. Demonstration of conscious and dependable acquisition of professional values is evident when ones' values are internalized (Fischer, 2014). The internalization of certain attitudes and values are vital to the development of professional role identity (Faulk, Parker, & Morris, 2010) which is thought to underpin the foundation of the principles of professionalism (Hensel, 2014). Socialization to the profession is identified as a process

for learning the role, status, and values of the discipline. Learning the disciplines technology and language, internalizing values, integrating the role into ones' identity are all components of professional socialization (Dinmohammadi, Peyrovi, & Mehrdad , 2013). Professional socialization to the role of the nurse is identified as an important element of professionalism. It is described as the process occurring when the individual accepts the attitudes and values of the profession and authentically demonstrates them in behaviors (Faulk, et al. 2010). Professional socialization begins with entry level education in a formal program followed by work and career experience (Rutty, 1998).

Prior to internalizing the nursing role, it is essential for the baccalaureate student to understand and identify with the values, characteristics, expectations, responsibilities, as well as the norms and behaviors of the profession. Failure to identify and internalize the role of the professional nurse can result in a risk of vulnerability and confusion (Nickerson & Resick, 2010). The development of professional behaviors and characteristics evident of values and value-based behavior are important for nursing students to attain in preparation for professional nursing practice. Professional values are embedded within the American Nurses Association (ANA) *Code of Ethics for Nurses.* These values are fundamental for nursing students to learn and understand, with the intention of aligning personal values with the expected conduct and ethics of the members of the profession (ANA, 2001).

The ANA *Code of Ethics for Nurses* describes the obligations of the nurse in professional relationships, collaboration, advocacy, privacy, confidentiality, professional boundaries and ethical practice, and documents the expectations and obligation of the professional nurse's role. This *Code of Ethics for Nurses* emphasizes that the process for

becoming a nurse involves integration of personal and professional values creating a wholeness of character, with development of capacity for establishing professional relationships with patients and colleagues (ANA, 2001). Standards of excellence in nursing are guided by this code and this code serves to define the profession and guide the behaviors of the professional nurse. This code provides the fundamental expectations of the profession and is of significant relevance for the integration of one's personal and professional values. The professional responsibilities and values endorsed by this code are the backbone of public protection and ascribe that those who use this code be knowledgeable and competent (Scammel, 2014).

A broader definition of professional values comes from a global perspective and identifies these values to include caring for clients with a humanistic spirit, providing professionally competent care, fostering growth and discovering the meaning of life, experiencing the give and take of caring for others, receiving fair compensation, and raising public awareness of health promotion. In an effort to increase the diversity of nurses it is imperative to learn and understand professional values from a broader perspective to ensure incorporation and acceptance of these values in today's diverse workforce (Shih, Lin, Smith, Liou, Chiang, Lee, & Gau, 2009).

Nursing professional values provide a framework for ethical decision making and influence the quality and safety of patient care delivery (Iacobucci, Daly, Lindell, Griffin, & Griffin, 2013). Values drive the action and behaviors nurses demonstrate thus a nurse's practice is predicated on the incorporation of personal and professional values (Eddy, Elfrink, Weis & Schank, 1994). The American Association of Colleges of Nursing [AACN] (2008), *Essentials of Baccalaureate Education for Professional Nursing*

Practice, provides a seminal framework for developing the baccalaureate nursing student with the capacity to provide high quality, and safe patient care, and support the development of professionalism in practice.

Nurse education programs assimilate a socialization process to instill the modification of personal values and promote the internalization of professional values to prepare the student nurse for entrance into practice (Martin, Yarbrough, & Alfred, 2003). Incorporating professional values in nursing curricula can increase socialization into the nursing professional role. The Core Professional Nursing Values (CPNV) as identified by AACN (1998) includes altruism, autonomy, human dignity, integrity and social justice. The value of altruism has a long history of being the primary motivation for those entering the nursing profession. However, changes in the economy in current times has contributed to a nursing student demographic motivated by reasons other than altruism thus the value of altruism needs to be learned and internalized through nursing education curricula. Though autonomy is more widely understood, those who have been exposed to adversity or encountered challenges in other domains may exhibit higher level attunement with this value. The value of human dignity may be understood by most, but the extent to the depth of importance and the subtlety of its meaning holds a level of complexity indicating the need for a certain level of education and instruction to fully internalize this value (Shaw & Degazon, 2008). Integrity in nursing has roots in the ANA *Code of Ethics for Nurses* and the AACN, *Essentials of Baccalaureate Education for Professional Nursing Practice* (ANA, 2015; AACN, 2008). Though integrity is easily identifiable within the expected role of the nurse, ones' values are often challenged by

outside influences thus educating and reinforcing the importance of this professional value is essential.

Nursing educators need to develop strategies for improving integration of personal and professional values in nursing students to better prepare them for professional practice (Shih, et al., 2009). Values education is essential to the development of the professional nurse. Ethical decision making about value-laden dilemmas appears as a regular occurrence for nurses and contributes to premature departure from the profession due to emotional burnout. Given the current shortage and projection of a rising need for more nurses in the future, intentional and effective emphasis on values education in baccalaureate nursing programs may help sustain the nursing workforce (Vezeau, 2006). The importance of including the development of core professional values in nursing curricula is evident, though research suggests baccalaureate curricula may not include this to the extent necessary for adequately preparing the nurse for practice (Eddy, et al., 1994).

Research Questions/Goals

Results of this study provide information on nursing professional value development in baccalaureate nursing students. Study outcomes aid in the process of the realization and internalization of nursing professional values in baccalaureate nursing students by adding insight for nurse educators on the student nurse experience. Two research questions were investigated in this study: 1) Does the demonstration of value based behavior evident of caring, activism, trust, professionalism, and justice, increase between first, second, and third year baccalaureate nursing students? 2) What factors influence the internalization of nursing professional values?

Hypothesis: The primary hypothesis is the internalization and demonstration of nursing professional values of baccalaureate nursing students increase between the first, second, and third year of baccalaureate nursing education.

Operational Definitions

Attitude: the combination of internal information available to one at the time of judgment (Tybout & Scott, 1983)

Extrinsic Motivation: the enactment of an activity or behavior aimed at accomplishing a distinguishable outcome (Deci & Ryan, 2000)

Integration: the process of continuous, intelligent, interactive adjusting, resulting in certain behavior or given action (Hopkins, 1937 p. 785)

Internalization: the process through which external regulatory standards are taken in and accepted by an individual with a demonstration of behaviors evident of assimilation of these standards in ones' sense-of-self (Williams & Deci, 1996)

Intrinsic Motivation: executing a behavior or activity for the innate satisfaction for the activity itself (Deci & Ryan, 2000)

Professional Role Identity: the process of developing an internal representation of the values, skills and knowledge of the discipline (Cook, Gilmer, & Bess, 2003), and the realization of becoming a member of the profession (Burford, 2012) and experiencing the feelings of what it is like to be a member of a certain discipline (Ohlen, 1998)

Professional Socialization: a process for attaining the values, attitudes, interests, skills, and knowledge of the member discipline (Reutter, Field, Campbell, & Day, 1997)

Professional Values: represent a requisite of professionalism and include the attitudes, beliefs, and priorities of a given member group (LeDuc & Kotzer, 2009)

Professionalism: a process to envelop a discipline with standards of excellence, provide rules of conduct, distinguish a sense of responsibility, establish criteria for recruitment and training, ensure a measure of protection for members, establish collective control over the specified area, and elevate the discipline to a place of dignity in society (Hurd, 1967), and characterized by knowledge, specialization, intellectual and individual responsibility, and a well-developed consciousness (Baumann & Kolotylo, 2009; Flexner, 1915)

Self-esteem: overall evaluation of ones' own value, worth and importance measured through reflection of attitudes or evaluations towards ones' self (Mannarini, 2010)

Wholeness of Character: integration of personal and professional identities (ANA , 2001)

Assumptions

The researcher assumed the participants would respond to the questions on the measurement instrument and survey questionnaire with authenticity and honesty. The protection of participant's anonymity through a confidential electronic survey design with assurance of no ramifications and the option to withdraw at any time was designed to support this assumption. An assumption was made that the sample of baccalaureate nursing student participants in this study are representative of the population.

Delimitations

Considering nursing education at the baccalaureate or higher level as the foundation for developing and internalizing nursing professional values, the foci of this study was baccalaureate nursing students. A single university with multiple campus sites and a shared curricular path was selected for this study. A Likert-type scale was used for data collection with one open-ended question added for content analysis related to research questions. An electronic survey format was selected for convenience and ease of access for participants. Survey Monkey was used as the electronic platform for delivery of the survey. The Nurses Professional Values Scale – Revised (NPVS-R) was selected as the instrument for measuring nursing professional values with strong psychometric properties based on use in previous studies. A dearth of previous studies examined the nursing student's motivation for adopting professional values. This study was grounded in Self Determination Theory (SDT) (Ryan & Deci, 1985), utilized as a framework for expanding the perspective of the adoption of professional values related to self-determined motivational experiences.

Limitations

This study involved the investigation of the internalization of nursing professional values in baccalaureate nursing students. The self-reporting nature of the measurement instrument assumes participant responses are honest and without errors or bias. The participants in the study vary in demographics and life experiences which may have impacted responses. Generalizability is limited due to the setting and participants restricted to a single university. It is recommended future studies include undergraduate nursing student participants from several universities.

Significance of the Study

Research suggests that a nurse's professional value system is linked to the delivery of safe and quality patient care as well as work satisfaction and retention (Dempsey, 2009). Educational preparation for registered nurses includes instruction and development of a professional value system. Nursing professional values are incorporated as part of the didactic and experiential learning in traditional baccalaureate nursing programs (AACN, 2008). Acquisition of professional values is a developmental process that occurs as a result of exposure to professional expectations, formalized learning, practical experience, and appropriate role modeling by practicing nurses (Nouri, Ebadi, Alhani, Rejeh, & Ahmadizadeh, 2013). The aim of this study was to compare the internalization of nursing professional values in baccalaureate nursing students in the first, second, and third year of the nursing program, and investigate the factors that foster the internalization of these values. Previous studies have compared the acquisition of nursing professional values among associate degree nurses, diploma nurses, and baccalaureate nurses, and have tracked nursing professional value acquisition in a

longitudinal study to investigate the changes in values acquisition from entry to completion of a baccalaureate degree (Fisher, 2014; Leners, Roehrs, & Piccone, 2006). Studies have also investigated the perceptions of nursing professional values between senior baccalaureate nursing students and their faculty (Eddy et al., 1994) and have measured the personal and professional values of practicing nurses (Rassin, 2008). Another study explored the relationship between professional nursing values, self-esteem, and ethical decision making among third year baccalaureate nursing students (Iacobucci et al.,) and yet another compared the professional nursing values held by nursing students, new graduates and seasoned professionals (LeDuc & Kotzer, 2009).

This study aimed to collect a measurement of professional values at equal points in time within the baccalaureate nursing program and provide information on the student experience of the factors that contribute to the internalization of these values. This study provides data on the relationship between year in school, and other demographic strata, to the internalization of professional values. Additionally grounded in the theoretical framework of SDT (Ryan & Deci, 1985), this study adds insight to the motivation embodied by the student for the internalization of professional values. This knowledge will aid educators in integrating appropriate values-based learning activities within the nursing curriculum. Furthermore, the data gained from the open-ended question informs educators on specific factors contributing to the internalization of values, allowing them to emphasize those factors with the greatest value.

Chapter II: Review of Literature

Introduction

This chapter examines literature related to professionalism and professional values relevant to the discipline of nursing and includes seven major sections: 1) the history and development of professionalism, 2) professionalism in health care and medicine, 3) nursing professionalism and nursing professional values, 4) nursing professional values development, 5) theoretical framework, 6) theoretical framework linked to outcome variables, and 7) conclusion.

For the purpose of this study emphasis was placed on the experience of the baccalaureate nursing student and the internalization of professional values determined necessary for professional practice. This study was grounded in a theoretical framework based on SDT, (Deci & Ryan, 1985) which will be described at length later in this chapter.

Professionalism: History and Development

Professionalism is acquired through assimilation of the ethos of a profession which exemplify the enduring characteristics, sentiments, and beliefs that guide the profession (Gersh, 2006). Medical professionalism in modern time is explained by Sox (2007) as having roots in the framework of medieval guilds. Historically dating back to 1100 AD, guilds became an organizing principle to ensure quality of the craft and the limitation of eligibility to apprentice, ensured comfortable working conditions and good income for those that were allowed. In post-medieval Europe the craft guilds were known as having considerable power (Sox, 2007). Craft guild practitioners of medieval Europe appeared as free artisans and tradesmen and at the decline of the medieval era the pre-professional specialist survived and became a part of the constitution of modern

professions. In pre-industrial times the professions were bound to a stratification system where social standing was closely aligned with those having elite status. With the rise of modern professionalism in the nineteenth century three professions were commonly recognized: divinity, law, and medicine (Larson, 1977).

Professionalism: Health Care and Medicine

Historically in medicine, professional ethics were based on virtue and duty and were confined to the interests and obligations of physicians. A shift in the early 1970's changed the focus to biomedical ethics evident of patient rights and shared decision making. By 2005 yet another shift occurred bringing to spotlight the necessity of integrating the concepts of professionalism into medical education. Though gallant efforts have been made to instill professionalism, it is suggested the moral compass remains adrift, signifying further investigation into the factors related to internalization of professional values (Coulehan, 2005).

Nursing Professionalism and Professional Values

The world view of nursing or the paradigm of nursing professionalism has been difficult to ascertain due to uncertainty about its' exact meaning or description. The nursing profession has struggled to define nursing due to the ambiguity of activities and nature of the science. Consequently nursing has both historically and currently been bound to medicine. A disabling element contributing to the latency for establishing the meaning of professionalism is perhaps the varying assumptions and standpoints that exist today. It is important for the advancement of nursing to define, understand, and comport professionalism to acquire autonomy and advance nursing practice (Rutty, 1998).

The research to date on nursing professional values and the internalization of these values has been focused on (a) comparing the level of acquired professional values of various stages of nursing preparation, (b) investigating personal beliefs about the level of importance of nursing professional values, and (c) exploring possible influences contributing to the development and acquisition of nursing professional values.

The preponderance of reviewed studies demonstrate that the internalization of nursing professional values occur over time through exposure to knowledge development and experiential practice. Though many studies measured professional value attainment at varying levels of educational preparation and practice for nurses, no study was found that explained the experience of the nurse in their development and internalization of professional values. Most of the reviewed studies proposed that the development and internalization of professional values for nursing students is predicated on their educational exposure to the concept of professionalism. It is clear that further research is essential for understanding the experience of the developing student and the factors that influence the internalization of professional values.

Development of Nursing Professional Values

To establish an understanding of nursing professional values held by nursing faculty as compared to the nursing professional values of senior baccalaureate nursing students, Eddy et al., (1994) investigated the perception of nursing professional values in each group. Identifying the characteristics of nursing professional values to be evident of altruism, equality, esthetics, truth, freedom, human dignity, and justice, the researchers implemented the Professional Nursing Behavior Instrument (PNB), a tool based on the American Association of Colleges of Nursing (AACN)'s (1986) *Essentials Report*. The

researchers aimed to answer four questions: 1) if significant differences in professional values between the two groups existed, 2) if employment or enrollment in public versus private institutions influenced the development of nursing professional values, 3) if the presence or absence of courses in theology, philosophy, or ethics influence the professional values of nursing students, and 4) if any variables or combination of variables account for a significant amount of variance in the total professional value scores of students or faculty.

Interestingly, faculty values were significantly higher (p <.045) than students in the categories of equality, human dignity, and freedom, and more experienced faculty had higher value scores overall. The value of esthetics rated higher by students and was identified as creating environments that were more pleasing to patients and staff, idealizing the work environment, and assisting staff in providing care. Students rated lower on the value of confidentiality; however, this could be related to a lack of knowledge or understanding of the concept. Other values that received a lower rating by students could be related to their limited understanding of their role as a nurse and these include, obtaining sufficient data before reporting an error or infraction, sharing concerns about social trends, and reporting incompetent practices of other health providers. Students also scored lower on behaviors associated with equality such as engaging in discussions about improving nursing and health care and also providing care regardless of patient characteristics. Conversely, faculty's value of freedom exemplified patient rights to receive and refuse treatment and encourage open discussion and communication about difficult issues. A comparison of professional values scores between nursing students from public schools to those from private institutions revealed no significant difference,

nor did the exposure to ethics, philosophy or theology courses significantly impact the scores (Eddy et al., 1994).

In this study, the lower student scores as compared to faculty are suggestive of a disparity of incorporation of intentional instructional strategies emphasizing professional values (Eddy et al., 1994). Though courses in ethics, theology, or philosophy did not prove to impact the professional values scores measured in this study, courses or learning activities directly related to professional nursing values could increase the internalization of these values. Additional research is needed to identify factors that potentially contribute to professional values development and acquisition.

A comparison study investigating differences in values orientation between graduating baccalaureate (BSN) and associate degree nursing (ADN) students was conducted by Martin, et al. (2003). A convenience sample of 1,450 participants from both program types, 25 baccalaureate programs, and 48 associate degree programs, were recruited from universities and colleges in the mid-west. Identifying the American Nurses' Association (ANA) *Code of Ethics for Nurses* as the foundational basis for describing professionalism, the researchers implemented the Nursing Professional Values Scale (NPVS) via a survey administered by a faculty member at the participating institution. The NPVS is comprised of eleven subscales measuring professional values and includes: 1) human dignity, 2) right to privacy, 3) safeguard the client and the public, 4) accountability for judgments and actions, 5) competence, 6) informed judgment, consultation and delegation, 7) participate in developing the professions body of knowledge, 8) participate in improving standards of practice, 9) establish an environment conducive to high quality care, 10) maintain the integrity of nursing, and 11) work

collaboratively with other health professionals to meet the needs of the public (Martin et al., 2003). In addition to investigating if a difference existed between baccalaureate and associate degree nursing students, the researchers also collected data on gender, ethnicity, age, and marital status.

Study results indicated the values development of senior nursing students in ADN programs did not differ significantly (p=.10) from the students in BSN programs; however, the ADN students did score higher on 5 of the 11 subscales. Specifically, the ADN students scored higher on subscales, 2 (right to privacy), 4 (accountability for judgments and actions), 6 (informed judgment, consultation and delegation), 8 (participate in improving standards of practice), and 11(work collaboratively with other health professionals to meet the needs of the public). Male students from both program types scored lower on every subscale and no significant difference (p = .41) existed when students were stratified by age. Only on subscale 7 (participate in developing the professions body of knowledge) did marital status reveal a significant difference (p = .02) & (p = .00), with divorced students scoring higher than married students and single students respectively. Overall, ethnicity was not statistically significant except for subscales representing respect for human dignity, and safeguarding the client and the public. Asian/Pacific Islander students scored lower as compared to Caucasian, African American, Hispanic, and Native American students on the subscales representing these two categories (Martin et al., 2003).

Results from this study suggest the length of time or program type does not have significant impact on the internalization of professional values yet the ADN students had scores evident of greater levels of professional values in some areas as compared to their

BSN counterpart. Interestingly male nursing students demonstrated a lower score on all subscales measured. Though the difference was not significant, students identifying with Asian ethnicity showed lower scores on the subscales related to human dignity and safeguarding the client and the public. This study suggests demographic differences can impact the importance one attributes to professional values, thus, integrating strategies in nursing education aligned with diverse needs is essential (Martin et al., 2003).

Thorpe & Loo (2003) conducted a descriptive, non-experimental study to examine the values of undergraduate nursing students compared to undergraduate management students. The majority of the participants were in the final year of their professional program at a liberal arts university in western Canada. Of the participants (n=263) nearly 69% were female and the reaming 31% male. The average age was 25 years old and the majority identified as Caucasian while several other races were represented. A values scale, the Life Roles Inventory-Values Scale (LRI-VS), a 100 item scale measuring 20 values was administered in a classroom setting to both groups. The participants were instructed to rate each item in regard to the importance they would ascribe to the item currently, or as anticipated in the future. Each item was measured on a Likert-type scale ranging from (1) = little or no importance to (4) = very important. Each of the 20 values are represented by 5 items thus total scores for each value range from 5 to 20 with a higher score representing greater importance (Thorpe & Loo, 2003).

The 20 values identified by the LRI-VS include; personal development, altruism, social relations, ability utilization, achievement, physical activity, economics, social interaction, prestige, aesthetics, autonomy, advancement, variety, authority, working conditions, life style, cultural identity, creativity, physical prowess, and risk. Personal

development and altruism ranked the highest among the nursing students with social relations, ability utilization and achievement ranking just slightly less. Ranking as slightly important; advancement, variety, authority, working conditions, and life style only marginally surpass the values of; cultural identity, creativity, physical prowess, and risk which rank as unimportant. Interestingly, the age factor correlated higher values in social relations, altruism, social interaction, cultural identity, advancement, physical activity, and aesthetics in younger nursing students as compared to the older nursing students (Thorpe & Loo, 2003).

Comparing the nursing students to the management students, the researchers found nursing students ranked higher in the values of altruism, though ranked lower in life style, advancement, autonomy, authority, creativity, economics, and risk (Thorpe & Loo, 2003). The researchers regard the high ranking value of altruism and personal development to correlate with the stereotypical nursing norm, thus suggest these values are reflective of a basic need to develop as a person. Additionally they attribute the high ranking of personal development among this sample to be associated with the mere fact that they have chosen to enroll in a university and are seeking a professional degree. The value of altruism garnered much attention in the discussion of this study, reflective of it being deemed an essential characteristic of the nursing profession (Thorpe & Loo, 2003).

This study resulted in recommendations for nurse educators to implement activities early in the program aimed at measuring professional values in students. Additionally it was suggested to incorporate skills training activities specifically directed toward low ranking values such as risk and creativity. In turn, it was suggested, emphasis on the values of empowerment, problem solving, and innovation may have a positive

impact on the organizational culture of nursing. Lastly the researchers recommend the value of self-care be emphasized in an effort to balance the risk of burn-out, a symptom of high stress related to a highly altruistic profession (Thorpe & Loo, 2003).

Identifying and understanding professional values development among undergraduate nursing students was the aim of a study by Leners, et al. (2005). The researchers investigated a baccalaureate nursing program in the western United States with a research-intensive curriculum that included the acquisition of professional values as one of the program terminal objectives. The professional values content was threaded across the continuum of the five semester curriculum with deliberate teaching strategies for sequencing from didactic to clinical experience and simple to complex content (Leners, et al., 2005).

A longitudinal design allowed the researchers to study four cohorts over a three year period using a pre-test and post-test instrument. One hundred and fifty nine (98%) participants completed the pre-test and 128 (87%) participants completed the post-test. The NPVS was implemented during the first and last semester of the nursing program. The independent variable was the value specific curriculum, which was not altered or manipulated, and the dependent variable was the change of NPVS scores from program entry to exit. The total score was based on an average of all 44 items for measuring the concept of professional values. As was hypothesized, professional values scores changed from entry to exit with a statistically significant ($p < 0.01$) increase at the end of the five semester program. The most highly valued items were centered on maintaining competence for practice, accountability and responsibility, protecting patient's legal and moral rights, and providing quality care without judgment or prejudice. An additional

item, patient advocacy, moved 16 places from pre-test to post-test becoming the highest ranking value at program completion. Two items changed significantly from pre-test to post-test; maintain competence for practice ($p = 0.024$), and patient advocacy ($p < 0.001$). Those items scoring low on entry into practice included, participating in public resource decisions, participating in institutional decisions, participating in research and peer review, providing consumer education, using title of RN to enhance the image of the profession, and use of guidelines to determine appropriateness of research. At post-test these items remained least valued; however, the means of all but two increased significantly, participate in nursing research and provide consumer education about products and services (Leners et al., 2005).

In this particular study the participants entered the program with some professional values already established, which could be a reflection of the admission criteria which included the requirement of the applicant to have their nursing assistant (CNA) certificate prior to application, thus these students had previous experience and association with professional nurses. The highly ranked items focused on the areas characterized as being in the nurses' control such as competence, responsibility, accountability, quality care, and patient rights. The item most influenced in the course of the five semester curriculum was patient advocacy. The least valued items are essential for professional socialization and are reflective of collaborative relationships and associated with expanded nursing roles. The growth over the five semesters could be related to BSN program familiarity, mentorship experiences, clinical practice situations, role modeling, and individual values-based experiences (Leners et al., 2005).

To examine the behavioral changes in professionalism among RN-to-BSN graduates, Morris and Faulk (2007) conducted a study underpinned by Mezirow's adult learning theory which postulates that adult learning is resultant of personal perspectives in response to external and unexpected events. The theory suggests critical reflection occurs as one examines new perspectives and experiences change in thinking about previous beliefs and values (Mezirow, pp.5). A qualitative descriptive study design allowed the researchers to elicit responses based on the participant's viewpoint and perspectives through open-ended questioning. A convenience sample of RN-to-BSN graduates from a single university, were surveyed via email 3 months after graduation from the program. The tool developed by the researchers was derived from the AACN (2008) essentials of baccalaureate education. The two-section survey includes categories reflecting the role of the nurse and professional values. The role of the nurse is divided into three categories; provider of care, designer/manager/coordinator of care, and member of a profession. The professional values are categorized as; caring, altruism, autonomy, human dignity, integrity, and social justice (Morris & Faulk, 2007).

The survey was administered to 13 graduates with a return rate of 77%, n=10. The participants were instructed to identify learning activities related to each of these categories in which their perspective was challenged and how their professional behaviors were changed. Twenty six learning activities were identified with 13 resulting in changing the participant's perspectives about their roles and values (Morris & Faulk, 2007).

Relationship based learning activities were identified by participants to promote growth in their role as provider of care and manager of care and contributed to the

development of their values in regard to caring, altruism, autonomy, and human dignity. Volunteer activities engaging students in areas of community interests contributed to the development of the value of caring, altruism, and human dignity. Additionally, the value of integrity was thought to be further developed through participation in an assignment addressing legal issues. Learning activities aiding in the development of the role of designer/manager/coordinator of care, were characterized as those that aimed to analyze current systems and organizations of health care delivery. Several learning activities were thought to contribute to the development of the role of the professional, including a self-assessment and a values identification activity. The participants described an increase in professional behaviors identified within the tool, specifically, an increase in collaboration with other members of the health care team, patient advocacy, increased confidence, increased use of research findings, and increased awareness about political processes (Morris & Faulk, 2007). Though this study was small and not generalizable, it offers some insight into learning activities that have potential impact on developing the role of the nurse and the associated professional values. Further research is indicated to examine similar questions with a larger sample.

Kubsch, Hansen, and Huyser-Eatwell (2008) conducted a study to explore the differences in perceptions of professional values in practicing RNs and to examine if educational background influenced the degree of professionalism. A framework encompassing Hall's (1963), Care, Cure, and Core theory provided the constructs for this study. In this framework, each concept meets as interlocking circles and represents the responsibilities and the function of the nurse. *Care* is predicated on the provision of bodily care, *cure* is in regard to collaborative work with the rest of the healthcare team,

and *core* refers to the social, emotional, spiritual, and intellectual needs of patients, communities and the world. The Professional Values Survey (PVS) was used to test the dependent variable. The survey developed by the researchers consisted of 50 statements reflective of professional values with a Likert-type scale ranging from 1, not important, to 5, most important. The independent variable, level of nursing education, was collected using a demographic questionnaire. Registered nurses and RN-BSN students in a Midwestern community were solicited for participation in the study. A total of 590 RNs and 130 RN-BSN students were invited to participate. A 31% response rate resulted with 198 surveys electronically returned. There was an equal distribution of ADN, RN-BSN graduated and RN-BSN students. Also represented in the study were diploma nurses, traditional BSN nurses, and nurses with master's degrees (Kubsch, et. al., 2008).

Results were similar to a previous study conducted by Hillery (1991) in which the level of professionalism was linked to, nursing education, practice setting, and professional development activities. Gender and ethnicity could not be assessed in this study due to the predominance of 94.4% female and 96.5% Caucasian participants. Results of the study indicate nursing professional values are linked to level of education with higher mean scores existing for the RN-BSN students in progress, master's degree nurses, diploma, RN-BSN graduated, and traditional BSN, as compared to ADN. However, the study showed that after degree completion the RN-BSN mean perceived professional values scores dropped (Kubsch, et. al., 2008). This could indicate that the current practice for teaching nursing professional values in undergraduate curricula is not sufficient for instilling a sustained value-laden practice, and additionally the workplace could lack the infrastructure to support the continuation of professional value

development or sustainment. The study also linked greater perceived importance of professional values among experienced nurses, those older than 60 years of age, nurses in administrative positions, nurses' with membership in a professional organization, and those working in a home health specialty (Kubsch, et. al., 2008).

Rassin, (2008) applied the theoretical underpinnings of Rokeach's Values Theory in a study aimed at measuring the professional and personal values among nurses. Rokeach's Values Theory posits that values prompt individuals to act in certain ways in response to the environment, social affiliations, educational systems, and individual past experiences. The study participants included 323 Israeli nurses completing two measurement tools, the Rokeach Value Survey, implemented to measure personal values, and an instrument used to measure professional values based on the Israeli nurses Code of Ethics. The Rokeach Value Survey measures 36 personal values, 18 which are goal focused values and 18 which are behaviors focused values. The survey based on the Israeli nurses Code of Ethics, measures 20 professional values (Rassin, 2008). Participants ranked each of the values on the two instruments in hierarchical order based on importance with the value receiving the numeric of 1 being the most important, and 18 or 20 respectively being the least important. A second measurement was conducted using the same two instruments applying a Likert-type scale scoring of 0-3 with 0 being unimportant, and 3 being very important. Overall the following broad categories of values were analyzed; values and responsibility towards patients, values and responsibility towards profession and society, personal values, values and culture, values and education, and values and position and expertise (Rassin, 2008).

Specifically studying hospital nurses, the researchers asked the following questions; 1) "How do hospital nurses rate the importance of personal and professional values"? 2) "Is the rating of personal and professional values affected by sex, age, ethnic origin, education, position, seniority, or nursing expertise"? (Rassin, 2008). A comparison of ethnic origins found significant differences ($P<0.05$) between native Israeli nurses and Soviet Union immigrants in both personal and professional value factors. Professional values of trust and excellence rated higher by native Israeli nurses; however, nurses native to the Soviet Union rated higher in social recognition, politeness, and a sense of accomplishment. Level of education exposed significant differences in 12 of the values with registered nurses and nurses with academic degrees placing a higher value on accomplishment, happiness, and independence than licensed vocational nurses (LVN), whereas LVN's placed a greater level of importance on values concerning politeness, forgiveness, obedience, cleanliness, and family security (Rassin, 2008). The study results indicate the fundamental values of the nursing profession; human dignity, equality, and prevention of suffering, has sustained the changing landscape of healthcare. These factors represent values in regard to the responsibility towards the patient, and are among the top ratings on the Israeli nurses Code of Ethics. Rating in the lower portion of the same scale, the values pertaining to the responsibilities towards the profession and society, particularly the promotion of public health, rated 18th out of 20 factors. The categories of personal values, family security, happiness, and sense of accomplishment arose to the top for terminal values, and honesty, responsibility, and intelligence rated among the highest instrumental values. Interestingly, personal values of cleanliness and

esthetics rated low and imply a certain decline in the importance of preventing infection and patient safety (Rassin, 2008).

This study also addressed value-rating differences resulting from personal variables such as birth place, education, and work experience. With comparisons pertaining primarily to native Israeli nurses and nurses from the former Soviet Union, as the other ethnic origins in the study were not significantly represented ,variations in their personal values rating exist. Those with a higher level of education placed a greater value on independence and imagination whereas those with less education valued items such as, obedience, forgiveness, politeness, esthetics, and equality. Additionally, nurses holding positions with higher levels of responsibility placed a greater value on personal independence but scored patients' independence low (Rassin, 2008). Overall, this study suggests, one's value system is influenced by external factors such as, environment, knowledge, experience, and societal culture.

Ware, (2008) conducted a study to describe a grounded theory investigation about the socialization process of nursing students in baccalaureate programs. Several theoretical conceptualizations were considered in analysis of the socialization process. Symbolic interactionism (Mead, 1934, pp. 16), which is thought to underpin professional socialization and posits that ones' own internalization of a phenomenon is influenced by the attitudes and roles of others within a particular society or group was examined. Additional frameworks considered in this study for explaining professional socialization include the functionalist approach, and the interactionist approach. The former posits that role expectations, norms and values are internalized through socialization and the latter posits that socialization occurs through interactions with others and the environment and

is further adopted through the process of reflection. It is also suggested that an essential element of professional socialization comes from skill development and the development of the meaning of the professional nurse to the individual (Benner, 1984, pp. 137). Ware (2008), suggests the process of professional socialization is attributable to a combination of one or more theories though emphasizes the observation of social interactions to be essential for professional socialization.

Purposive sampling was used in choosing participants in a rural southern university. Baccalaureate nursing students selected for the study were those in their final semester of study and excluded baccalaureate nursing students previously licensed as a registered nurse. Additionally, theoretical sampling was used to allow new concepts to emerge out of the interview discussions (Ware, 2008). The following questions were asked; "What is the picture of yourself assuming the role of nurse now that you are nearing graduation"?, What was the picture of yourself assuming the role of nurse at the beginning of your program of study"?, and "What went on in between these two pictures"? Data from the interviews were coded to generate concepts out of identified categories. Further synthesis of the data led to the establishment of common categories and properties expressed by all participants (Ware, 2008). From the data, the researchers identified five attributes necessary for professional socialization; use of professional organization as a reference, service to the public, self-regulation, a sense of calling, and professional autonomy. Data analysis resulted in the emergence of a new theory suggesting self-concept of the nurse is built on a foundation of knowledge that comes together over time with faculty identified as primarily responsible for creating the learning environment to foster this process (Ware, 2008). Results of this study suggest

there is a progressive nature for professional socialization. Furthermore, these data indicate professional role modeling of nursing faculty impacts the socialization process.

Leduc and Kotzer (2009) conducted a three-group, cross-sectional design study to investigate and compare the values of nursing students, new graduates, and seasoned nurses. New graduates were identified as practicing less than one year and seasoned nurses were identified as practicing at least five years. Convenience sampling was used to enroll junior and senior baccalaureate students during their pediatric rotation from three state universities, and two groups of practicing nurses from a university affiliated children's hospital (LeDuc & Kotzer, 2009).

The researchers implemented the NPVS along with a demographic survey to conduct the study. Of the 384 distributed surveys, 97 students (96%), 46 new graduates (46%), and 84 seasoned nurses (46%) returned their surveys with an overall response rate of 56%. Study results indicated no significant difference on any of the NPVS subscales among all groups, with measurements of each of the value factors rating as important, very important, or most important. There was no significant difference between the scores on any of the statements among the three groups indicating value congruence and signifying that years of experience does not necessarily increase the internalization of nursing professional values. All values by each group were rated as important and serve as a guide for nursing practice (LeDuc & Kotzer, 2009). The demographic survey included questions regarding age, length of employment as an RN, and length of time practicing at an institution, as well as questions regarding awareness of the ANA *Code of Ethics for Nurses*, the integration of this code into practice, and if this code was presented

in nursing courses. Study results indicated new graduates responded with a greater awareness of this code than seasoned nurses or students, and students were more aware of this code than seasoned nurses. Additionally, there was a greater response from new graduates than seasoned nurses or students that this code was presented in nursing courses (LeDuc & Kotzer, 2009). Results of this study support the credence of nursing as being a values-based profession with nurses of varying experience and levels placing a high importance on values. Interestingly, the study did not maintain previous hypotheses that experience or age contributed to greater perceived importance of professional values.

A comparative survey design was used to test the relationships of a conceptual models variables in a study conducted with baccalaureate nursing students. Applying Manojlovich's conceptual model, Livsey (2009) aimed to examine associations between professional behaviors and student perceptions on factors within the clinical learning environment of baccalaureate nursing students. The characteristics identified by Manojlovich (2005) include; structural empowerment, self-efficacy, nursing leadership, and professional nursing practice. The model posits that self-efficacy mediates the relationship between structural empowerment and professional nursing practice, and leadership acts as a moderator of the strength of all of the variables in the model. These characteristics were applied to this study and specifically examined student perceptions of structural empowerment, nursing leadership provided by faculty, sense of self, and self-reported professional nursing behaviors. The context of the study focused on the clinical learning environment. Several instruments were used to examine the variables; Conditions for Learning Questionnaire (CLEQ), Leadership Practices Inventory-Observer (LPI-O), Caring Self-Efficacy Scale (CES), and the Nursing Activity Scale (NAS), each

one selected to measure a specific variable of the Manojlovich conceptual model (Livsey, 2009).

Participants were recruited from a list of 1000 members of the National Nursing Students Association (NSNA) by random selection. Of the 900 surveys mailed, 272 completed surveys were received (30.6% response rate) and only those indicating a 2006 graduation date remained, resulting in a sample of (n=243). Categorical demographic variables included 93% female, 86.2% Caucasian/White, 71.2% first college degree, and 89.7% no other nursing degree. Marginally represented were males, other ethnicities, students with previous college degrees, and students with previous nursing degrees (Livsey, 2009).

Data indicated no significant difference (p=0.06) between the influence of structural empowerment and student professional behaviors, and no significant difference (p=0.06) between the impact of structural empowerment and student self-efficacy; however, significance (p=0.00) did exist between student self-efficacy and professional nursing behaviors.

Overall this study did not suggest the Manojlovich's model as a prototype for explaining relationships between environment, personal factors, and professional behaviors among nursing students. However, the study does indicate a relationship exists between structural empowerment and professional practice behaviors thus supporting the practice of creating clinical experiences aimed at empowerment to foster the development of professional values is recommended (Livsey, 2009).

Fowler (2013) conducted a randomized, controlled experimental study to determine if service-learning enhanced the development of nursing professional values.

Using an experimental, two-group, posttest only design, the researchers studied baccalaureate nursing students in their third semester of a four semester curriculum. The intervention was a service-learning activity in which the participants did three hours of service at a non-profit organization that provided medical supplies to underserved countries. Following their service activity the participants took part in an online reflective discussion with their peers focused on their experience and nursing values which culminated in a written essay addressing the two foci. The control group, referred to as an attention control group (AC) took part in a traditional learning assignment which included attending a professional nursing meeting and then participating in an online discussion and writing a reflective paper on their observed leadership behaviors, (Fowler, 2013).

The total sample of 110 nursing students were randomly divided into the intervention group (n = 56) and the control group (n = 54). Following the experiment, the participants completed the NPVS-R to measure their professional values. Though the researchers hypothesized the service learning intervention would yield higher scores on the NPVS-R, the results of the study indicated the control group actually scored higher, indicating a greater level of professional values than the experimental group (Fowler, 2013).

A descriptive correlational research study was conducted to explore the relationship between nursing professional values, self-esteem and ethical decision making (Iacobucci, et al., 2013). Specifically, the researchers were interested in measuring the levels of self-esteem, perceived confidence in ethical decision making, and strength of professional values among nursing students, as well as the relationship among each of the

aforementioned factors. A non-probability convenience sample of 47 senior nursing students from a Midwestern university in the United States was surveyed using the NPVS-R, the Rosenberg Self-esteem Scale (RSES), and the Perceived Ethical Confidence Scale (PECS). The participants were divided into two study groups: 1) adult senior nursing students enrolled in an ethics course (*n*=25), and 2) adult senior nursing students enrolled in a public health nursing course (*n*=22). The survey results from both groups were combined for analysis since the mean scores of each demographic characteristic were not significantly different (Iacobucci, et al., 2013).

In answering the survey questions, the participants were given an option to check if they had previously experienced or not experienced an ethical dilemma. Those selecting previous experience with an ethical dilemma were placed in one group and those not, in another. Close to half (*n*=25) reported exposure to an ethical dilemma as a student nurse and of those, half (*n*=12) acknowledged exposure to unethical behaviors demonstrated by nurses or medical providers. The majority of the participants identified their nursing faculty to be supportive and assistive in helping navigate the ethical decision-making process though very few reported other resources to be helpful such as friends, family, religion, or policy.

Answers to the research questions were measured by the level of positive feelings with the mean composite score indicating high levels of self-esteem. Professional values ranked high among all students. The factors with the highest scores included protection of patient rights, advocacy, and questioning inappropriate practice. Fidelity and respect, privacy and confidentiality were also ranked highly among all students. Lower values were placed on participation in decision making that would have a negative impact on

resource allocation (Iacobucci, et al., 2013). The participants that had experienced an ethical dilemma expressed a moderate amount of perceived confidence in their actions and expected role in such situations. It was found that there was a moderate positive relationship between professional nursing values and self-esteem, a weak correlation between level of perceived confidence and level of self-esteem, and the level of perceived confidence for making ethical decisions was not related to the strength of internalized professional nursing values (Iacobucci et al., 2013). This study suggests that level of self-esteem is associated with the capacity for internalizing nursing professional values. Strategies for building and supporting the self-esteem of nursing students could have a positive impact on their development and internalization of professional values.

In a longitudinal study, Alfred, Yarbrough, Martin, Mink, Lin, and Wang (2013) sought to compare nursing professional values between two distinct cultures, American and Taiwanese. The researchers applied the philosophical framework of the ANA *Code of Ethics for Nurses* as the foundation for the study. The first study was conducted in the United States (US) using the NPVS which was later revised and administered in the second arm of the study in Taiwan. The tool was developed in English and translated to Mandarin Chinese for the second half of the study. A non-experimental research design with convenience sampling for recruiting senior nursing students in the last semester of their program was implemented. There were a larger percentage of females than males from both cultures with an average ratio of 5:1. Most of the US participants identified their relationship status as single, and their selected age category indicated a significantly older demographic as compared to the Taiwanese students. Two research questions were posed: 1) Is there a difference in professional values for students in Taiwanese and a US

nursing program? 2) What professional values are most important to students in a Taiwanese and a US nursing program? There were no significant differences (p=0.34) between the two groups in the total scores on the NPVS-R; however, items reflecting perceived differences of importance on the following topics were of significance: participation in peer review (p=0.001), accepting responsibility and accountability for own practice (p=0.001), maintaining competence in area of practice (p=0.001), protecting the moral and legal rights of patients (p=0.001), and acting as patient advocate(p=0.001).

To determine which of the values were most important for each of the two groups, the researchers rank ordered the responses according to score. The Taiwanese student's top three values included confidentiality, right to privacy, education, and updating skills. The American students prioritized competence in practice, patient advocacy, responsibility, and accountability. This study suggests that nurses ascribe to common core values regardless of ethnic differences; however, tradition and culture influence the prioritization of these values (Alfred, et al., 2013).

With a growing concern about the adequacy of nursing education for the development of professional nursing values, Fischer (2014) conducted a study to compare the development of professionalism between pre-licensure nursing students in associate, diploma, and baccalaureate programs. A descriptive non-experimental design was implemented using a convenience sample of 351 beginning and senior level nursing students from nursing schools in the northeastern United States. All three program types and a wide range of generation and ages among participants were represented in the study. The NPVS-R, a 26-item Likert-type scoring tool, was used to operationally measure professionalism. Items on the tool are clustered to five key factors: caring, trust,

professionalism, activism, and justice. Higher scores on the NPVS-R represent more advanced values orientation. The research questions included: 1) “What are the differences in NPVS-R scores between senior level nursing students in Associate Degree Nursing (ADN), diploma, and Bachelors of Science (BSN) programs”? 2) “How do those differences compare among NPVS-R scores of beginning and senior level nursing students within ADN, diploma, and BSN programs”? 3) “How do socio-demographic variables relate to overall NPVS-R nursing student scores”?

The comparison of entry level scores to senior level scores showed an increase in all three nursing program types and all senior level participants across all programs increased their scores on caring and trust. The comparison of NPVS-R scores of all senior nursing students revealed that diploma nurses rated significantly higher than ADN in the following four factors: caring ($p = 0.0004$), trust ($p = 0.0003$), professionalism ($p = 0.0007$), and justice ($p = 0.0001$). Additionally, the diploma students compared to the BSN students rated higher on the justice factor. The comparison of the average overall scores did not significantly differ across programs or between the ADN or BSN students; however, there was significant difference ($p = 0.0001$), in the diploma nurses scores from entrance to graduation. There was no evidence that socio-demographic variables influenced the overall scores of any of the pre-licensure program students and no trends were identified (Fisher, 2014). The results from this study indicate that experience and time in a nursing program are not an isolated requisite for acquiring professional values thus suggesting, further study be conducted on the internalization of professional values to inform strategies aimed at developing professionalism in nursing students.

In summary, the review of literature described fourteen separate studies examining nursing professional values. Presented as a historical appraisal, the studies represent a portion of the research conducted over the past twenty years exploring the development of nursing professionalism and nursing professional values. Included in the review were two longitudinal studies, one descriptive correlational study, three descriptive non-experimental design studies, two experimental design studies with randomized control groups, one comparative design study, one grounded theory study using purposive and theoretical sampling, and four studies using cross-sectional non-experimental designs. Comparison of nursing professional values development among nursing students of varying educational degrees, differing cultures, and at different levels within educational programs were the aim of many of these studies. Additionally, one of the studies compared the professional values of nursing students to nursing faculty and another compared nursing students to practicing nurses.

The studies examined in this review present a range of research findings to include the influence of gender, culture, and ethnicity on nursing professional values as well as the influence of level of education and years of nursing experience. Some of the studies determined that the progressive nature of values development was influenced by the years of education and experience. Conversely, other studies presented findings in opposition, challenging the evidence that experience, facilitates the adoption of nursing professional values. Each of the studies reinforced the importance of the instillation of values laden curricula in nursing education with an emphasis on nursing ethics and decision making.

Research studies spanning the past twenty years consistently reinforce the importance of teaching nursing professional values in formal programs of study. Implications for improving professional values development is reliant on the capacity for nursing programs and nurse educators to effectively instill these values in nursing students. Considering previous research studies, a gap currently exists in the discernment of strategies and tactics that contribute to the internalization of these values. Additionally there is a dearth of evidence for guiding the nurse educator to integrate value based learning activities congruent with the developmental stage of the nursing student. To improve this area of nursing education, an investigation to understand the level and process of developing nursing professional values in nursing students was deemed essential for increasing understanding of the factors that influence the internalization of these values.

Theoretical Framework

A thorough review of the literature on nursing professionalism and nursing professional values reveals a scarcity of studies utilizing social cognitive theoretical frameworks. Furthermore, the perceived experience of the student is excluded from most of the previous studies. There is little mention of the student's participation and motivation in acquiring a professional value system thus this gap called for a study underpinned by a framework that is based on self-determination.

Ryan and Deci (2000) developed Self Determination Theory (SDT) which provided the theoretical framework for this study. The theory is situated on motivational experiences; intrinsic, extrinsic, and amotivational, in combination with how these experiences intersect with an individual's self-determination (Deci & Ryan, 1985). SDT

underpins the process of self-motivation and healthy psychological development in human beings (Ryan & Deci, 2000). First introduced in the 1970s, SDT suggests that there are three innate psychological needs; the need to feel and experience competence, the need for autonomy, and the need to experience a sense of relatedness to something external to the self (Ryan & Deci, 2000).

Autonomy is the self-endorsement of one's own actions and is defined as a phenomenological experience resulting from an internal perception of causality (Moller, Deci, Ryan, 2006). Competence or a sense of proficiency, along with autonomy is linked to goal attainment and is thought to have a positive influence on intrinsic motivation (Deci & Ryan, 1985). Relatedness is operationally defined in SDT as a fundamental need to feel a deep connection to others. The need is satisfied through the capacity to love and be loved, and to care and be cared for. The theory of SDT suggests that relatedness has a function in maintaining intrinsic motivation and catalyzing it to flourish, yet is less central than competence or autonomy (Deci & Ryan, 2000). The theory postulates that these psychological needs are vital for optimal functioning and have relevance to the growth of individuals and their integration of social expectations. It is believed that individuals can be motivated to extend their capacity for learning, master new skills, and be inspired to apply new talents responsibly. Though human nature allows for either passive or active motivation, the social context in which one is exposed can be a catalyst for active motivation and growth (Ryan & Deci, 2000).

The motivation to act or take action has origin in a wide array of experiences. One's motivation can be elicited out of personal interest, value and commitment, or out of external expectations, regulations, or requirements (Ryan & Deci, 2000). Deci and

Ryan (2008) describe two central concepts of SDT as a distinction for understanding the span of the theory. *Autonomous motivation* and *controlled motivation* represent these distinctions. Inclusive of both intrinsic and extrinsic origin, autonomous motivation aids an individual's acceptance and alignment with a value of an activity or behavior and ultimately integrates it into the individual's sense of self out of one's own volition and endorsement (Deci & Ryan, 2008). Autonomy oriented motivation is associated with high levels of self-esteem and self-determined functioning (Deci & Ryan, 1985). Controlled motivation is activated through external regulation from expectations and parameters imposed by outside influences as well as through introjected regulation where the action has been partially internalized out of ego-related motives (Deci & Ryan, 2008). In this situation ones' level of self-esteem is predicated on external events (Deci & Ryan, 1985). Both forms of controlled motivation are considered energizing and are in contrast to the behavior derived from a lack of motivation (Deci & Ryan, 2008).

Two important subsets to SDT are organismic integration theory (OIT) and cognitive evaluation theory (CET). Extrinsic motivation and the factors that influence or hinder derivative behaviors are examined in the theoretical constructs of OIT. The theory posits that extrinsically motivated behaviors result in the least autonomous actions and are performed to satisfy external demands and regulations. Behaviors resulting from an organismic level are internally driven yet have an external locus of control, thus may take the form of compliance or defiant situated behaviors (Deci & Ryan, 1985). Another element of extrinsic motivation as examined in OIT is integrated regulation, and represents the most autonomous of extrinsic motivators and occurs when one reflects on

and evaluates the values being imposed and aligns those values with their own personal value system (Ryan & Deci, 2000).

Developed to explain the underlying factors that influence the variability in intrinsic motivation, CET focuses on the basic need for competence and autonomy. The theory suggests that contextually related events or circumstances that promote and develop feelings of competence and autonomy can augment intrinsic motivation towards the suggested action or behavior. The theory specifies that unless accompanied by a sense of autonomy or perceived locus of control, feelings of competence will not enhance intrinsic motivation (Ryan & Deci, 2000). Though this theory posits intrinsic motivation is an inherent tendency to fully achieve feelings of autonomy and competence, additional support from external influences is essential (Deci, Koestner, & Ryan, 1999).

Motivation is derived from a wide array of experiences and can be driven by values, self-interest, and commitment as well as out of necessity to comply with external regulations, directives, threats and deadlines. Autonomous motivation occurs as a process of assessing external values and aligning those values with ones' own personal values. Promoting the integration of extrinsically posed values is achieved through prompting, modeling, and identification by the individual of a desire to be valued by others whom they want to ascribe or join (Ryan & Deci, 2000).

Theoretical Framework Linked to Outcome Variables

This study focused on the three psychological needs identified by Ryan and Deci (2000) as essential elements for healthy human development; the need to feel and experience competence, the need for autonomy, and the need to experience a sense of relatedness to something external to the self. Based on an assumption that each of these

innate needs are related to the internalization of nursing professional values including, caring, activism, trust, professionalism, and justice, each of these needs will be discussed in relationship to the outcome variables of this study. This study also focused on the two central concepts of SDT, autonomous motivation and controlled motivation (Deci & Ryan, 2008). Specifically considering these concepts, this study was conducted to explore the factors that influence the highest level of self-determined functioning.

The internalization of values implies lasting integration of one's personal values with the values ascribed by a group or profession and can be motivated out of a desire to identify with the ethos of the acclaimed group (Rohan, 2000). The nursing profession engenders certain values and when internalized, these values provide the foundation for nursing practice (Rassin, 2008). This studied specifically investigated the perceived importance of the nursing professional values identified as, caring, activism, trust, professionalism, and justice.

An intrinsically motivated value, caring, is an irreplaceable human activity which is fundamental to the development and evolution of a human being (Delgado-Antolin, 2013). Caring described as the offering of self to others in the form of intellectual, psychological, spiritual, and physiological aspects, for goal attainment, (Scotto, 2003) aligns with Ryan & Deci's (2000) exploration of relatedness as an innate psychological need.

Relatedness exhibited as a deep connection to others is an integral component of caring, and is supported by Watson's theory of transpersonal relationship's characterized by mutuality between the caregiver and the one being cared for (Rafael, 2000). The concept of caring in relation to the *Code of Ethics for Nurses* (ANA, 2015) includes the

protection of patient's legal rights, confidentiality, autonomy, and respect, in addition to the responsibility of the nurse to maintain ethical practice aligned with professional values. The nurse operationalizes caring resultant of a sense of relatedness, when responding as an entrusted professional to the vulnerability of a patient (Lindberg, Fagerstrom, Sivberg, & Willman, 2014), furthermore, caring is demonstrated when the nurse attends to vulnerable individuals or populations, and receives deep internal satisfaction from the action (Porr & Egan, 2013). Intrinsically and extrinsically motivated, caring is at the center of nurse's engagement with others, the health care system, and the profession (Newton, Kelly, Kremser, Jolly, & Billett, 2009).

Activism, recognized as a key component of advocacy is described in terms of health, as taking responsibility for promoting the health of one's self, improving the health conditions of groups, and impacting policy effecting populations (Zoller, 2005). Competencies considered essential for effective advocacy include evidence of a sense of caring, regard, and passion for the welfare of others (Hanks, 2008). Intrinsically motivated acts of activism generate the highest degree of fulfillment when the execution of behaviors or actions stem from experiencing inherent satisfaction from fulfilling the behavior or activity (Deci & Ryan, 2000). A nurses' commitment to actively engage in the profession is implicitly related to their internal motivation and psychological and emotional need to feel a part of the nursing profession (Gambino, 2010, & Chang, Shyu, Wong, Friesner, Chu, & Teng, 2015).

Extending beyond patient advocacy, activism is recognized as a responsibility to participate in professional advancement, engagement in policy development, and dissemination of research to advance the nursing profession, and is considered an

essential element of professional practice (ANA, 2015). It is suggested that a nurses' participation in professional obligations precipitates from a need to experience a sense of belonging to the profession itself (Esmaeili, Dehghan-Nayeri, & Negarandeh, 2013).

Trust**,** a psychological confidence one ascribes in regard to another person for forming a contractual relationship where one with vulnerability relies on the other (Rutherford, 2014), is an essential component of relatedness and human relationships (Dinc & Gastmans, 2013). Trust, though established from morals, is additionally related to the competence of the professional nurse (Tarlier, 2004). Trustees should gain competence in things entrusted to them and demonstrate their expertise or competence that leads others to trust (Peter & Morgan, 2001). Competence is not evaluated by skill and knowledge alone, but also includes an intangible element correlated with one's personal attitudes and values and how they are revealed in professional actions (Fernandez, Dory, Ste-Marie, Chaput, Charlin, & Boucher, 2012). The value factored as trust, posits that a nurse must be competent and trustworthy to meet the professional obligations and fulfill professional responsibilities (Dinc, & Gastmans, 2012).

Professionalism, characterized by knowledge, specialization, intellectual and individual responsibility, along with a well-developed consciousness (Baumann & Kolotylo, 2009), aligns with the innate psychological need to experience autonomy and competence. Autonomy is recognized as a professional value foundational to the practice of nursing and is reflected when the nurse respect's the rights of other's decisions (AACN, 2008). Competence is described as the achievement of success in areas beyond cognitive performance and includes competence in self-awareness, self-regulation, and social skills (Diest & Winterton, 2005). Though both of these concepts are best integrated

when derived from autonomous motivation (Deci & Ryan, 1985), the capacity for autonomy and competence are also recognized as professional standards for nursing practice.

Professional nursing practice is regulated through nurse practice acts which were established more than 100 years ago in all states and territories. Laws are enacted for protecting the public's health and welfare by imposing external regulations for the practice of nursing. The Nurse Practice Act (NPA) along with the individual state Boards of Nursing (BON), regulate and establish rules for nursing practice that have full force and effect law (National Council of State Boards of Nursing [NCSBN]). Representative of controlled motivation, regulatory bodies and law, along with ethical codes, direct the nurse to uphold professional values which include responsibility for individual health as well as the health of others and the policies that impact the public. Though controlled motivation is thought to be the least autonomous and results in partial internalization (Deci & Ryan, 2008) of values, without meeting minimal standards and professional expectations, licensure to practice nursing may be revoked, thus motivation to adhere is foreseeable (Russell, 2012).

Justice is identified as the ability to act with impartiality towards others devoid of subjective interests or emotions (Hooft, 2011), and with the capacity to offer equal distribution of benefits and burdens (Johnstone, 2011). Recognized as a basic human need (Johnstone, 2011), justice incorporates two essential principles; equal access to basic liberties, and the balance of social and economic inequalities, so the least advantaged have the greatest benefit (Taylor, 2003). Relatedness or a deep connection to others (Deci & Ryan, 2000) is considered an essential aspect of providing just and equal

care. Considered a fundamental human need, justice is operationalized in nursing through being aware of the needs of others, correcting unjust conditions, and critical deliberation over the relationships between justice and the health of others (Johnstone, 2011). In fact, there is an ethical obligation in the context of providing equitable nursing care that suggests a moral commitment is necessary for balancing unjust situations (Woods, 2012).

Conclusion

Previous research on nursing professional values suggest that among nursing students, evidence of value integration exists to varying degrees and at varying points of interface. In comparing students from different program types, length or intensity of program did not necessarily correlate with the internalization of values, though an exploration of the progression of value attainment indicated that professional values increased with program advancement. Values more closely related to task were stronger in nursing students as compared to practicing nurses or nursing faculty and those factors associated with a broader value scope were less valued by nursing students. A comparison of American nursing students to Taiwanese nursing students suggests that values integration may differ between the two groups based on cultural influences. A clear indication of the factors influencing the internalization of nursing professional values yet ceases to exist.

Underpinned by the theoretical framework of SDT, this study aimed to measure the internalization of nursing professional values in the first, second, and third year of baccalaureate nursing students and investigate the factors that fostered this development. Recognized as psychological needs, SDT postulates that the need to feel and experience competence, to act autonomously, and to experience a sense of relatedness to something

external to the self is essential for optimal functioning. Satisfying these innate needs in the developmental process of becoming a professional nurse leads to personal growth and allows for the integration of the expectations set forth by the profession.

Understanding the trajectory of professional values integration and identifying the essential components for developing these values will assist in the planning and execution of nursing education curricula and delivery for maximizing professional value internalization.

Chapter III: Research Design and Methods

This study utilized a non-experimental descriptive design to measure the internalization of nursing professional values of baccalaureate nursing students in the first, second, and third year of nursing school, and investigate the factors that foster the development of these values. This design was used to examine non-manipulative variables such as nursing student level in program, demographics, and the development of professional values including, caring, activism, trust, professionalism, and justice. Though an association between the level of student and internalization of nursing professional values may be inferred, causation cannot be determined as this is not an experimental design.

Multiple factors contributed to the selection of this particular design. Though numerous studies have been conducted on nursing professionalism, a dearth of studies exist that select specified points in time to explore professional value development. Few studies have been conducted examining the variable of professional values in nursing students within specified student levels: first, second, and third year. Additionally, an open-ended question was included to explore the factors that may contribute to the internalization of professional values. These factors may add insight for nurse educators as they consider implementing values laden curricula in nursing programs. Lastly, the NPVS-R is an appropriate instrument for measuring professional values and is aligned with the nursing professional code, the *Code of Ethics for Nurses* (ANA, 2015), previously described, which remains the designated code for the nursing profession.

Setting

This study was limited to a single university in the western United States having the uniqueness of five independent campus sites, all with a shared curriculum. The curriculum is competency based and is derived from recommendations proposed in the *Essentials of Baccalaureate Education for Professional Nursing Practice* (AACN, 2008). One of the five independent campus sites was excluded from the study due to this researcher's professional affiliation with the campus. All campus sites are located in a single state but vary by geographic location and include urban and rural settings. Though delivery of curricula may vary among campuses, the essential content is standardized across each campus, contributing to a reduction of confounding variables that could influence the study outcomes. Values based competencies are integrated throughout the curriculum thus it was expected that this setting was appropriate for this study.

Sample

All baccalaureate nursing students enrolled in the traditional 3-year program in the university, with exception of the exclusion of students from a single campus were contacted for participation in the study. The sample was limited to students in a single university with multiple campus sites throughout the state. A convenience sample of students constituted the sample. The students were stratified by years in school; first, second, and third year. Additionally demographic variables were collected to include; age, gender, ethnicity, race, and rural or urban identification. It was expected that baccalaureate nursing students within this university would represent diverse demographic characteristics.

A sample of 72 participants, (first year student = 24, 2nd year student = 24, 3rd year student =24) was desired based on a priori power analysis: ANOVA, between factor design (n= 64, *f*=.30,α =*.05, ß .80* (G*Power Version, 3.1.9.2 {G*Power}, 2014). Inclusion criteria for this study were described as, nursing students enrolled full-time in the traditional 3-year program at the beginning of fall term. Exclusion criteria for this study included, baccalaureate nursing students enrolled in the registered nurse (RN) to bachelors of science (BS) program, the accelerated baccalaureate program(AcBac), and students enrolled part-time.

Baccalaureate nursing students (first, second, and third year) enrolled in fall term received a Survey Monkey questionnaire at the mid-point of fall term with an information sheet describing the study and informing consent to participate. The information sheet and survey link was posted on their student portal within their universities electronic platform. The survey remained available for two weeks to allow for maximum possibility of participation.

Data Collection Methods and Instruments

One survey instrument with an additional open-ended question was used to collect data at all campus sites. The following question was included in the survey with a text box for allowing open-ended responses: "What factors influenced the adoption of your nursing professional values"? This question aimed to uncover the personal experience of internalizing professional values from the perspective of the student. The NPVS-R was utilized for data collection. The NPVS-R is a 26-item scale including 5 factors, 1) caring, 2) activism, 3), trust, 4), professionalism, and 5), justice, each containing from 3 to 9 characteristics reflective of specific provisions from the ANA *Code of Ethics for Nurses*

(ANA, 2001). This *Code* (ANA, 2001) consists of nine provisions which exemplify the nursing professions value system. The first three provisions describe the commitments and fundamental values of the nurse. The next three provisions describe the duty and loyalty of the nurse. The last three describe the nurse's responsibility to the public and the social nature of the profession (ANA, 2001).

The NPVS-R measures the value of caring by summing the scores of the responses to the following descriptive phrases; safeguarding patient's right to privacy, maintain confidentiality of patient, provide care without prejudice to patients of varying lifestyle, practice guided by principles of fidelity and respect for person, protect rights of participants in research, protect moral and legal rights of patients, act as a patient advocate, confront practitioners with questionable or inappropriate practice, and refuse to participate in care if in ethical opposition to own professional values. The value of activism is measured by summing the scores of the responses to the following descriptive phrases; participate in activities of professional nursing associations, participate in nursing research and/or implement research findings appropriate to practice, advance the profession through active involvement in health-related activities, recognize role of professional nursing associations in shaping health care policy, and participate in public policy decisions affecting distribution of resources. The value of trust is measured by summing the scores of the responses to the following descriptive phrases; maintain competency in area of practice, accept responsibility and accountability for own practice, engage in on-going self-evaluation, request consultation/collaboration when unable to meet patient needs, and seek additional education to update knowledge and skills. The value of professionalism is measured by summing the scores of the responses to the

following descriptive phrases; establish standards as a guide for practice, promote and maintain standards where planned learning activities for students take place, participate in peer review, and initiate actions to improve environments of practice. The value of justice is measured by summing the scores of the responses to the following descriptive phrases; assume responsibility for meeting health needs of the culturally diverse population, promote equitable access to nursing and health care, and protect health and safety of the public *(*Weis & Schank, 2009).

Scoring for the NPVS-R is on a 5-point Likert-type scale including A – not important = numeric value 1, B – somewhat important = numeric value 2, C – important = numeric value 3, D – very important = numeric value 4, and E - most important = numeric value 5. The instrument instructs the participant to select the response correlated to the degree of importance relative to nursing practice. Scores range from a low of 26 to a high of 130 with the higher score indicating a stronger association with nursing professional values. Each of the 26 items in the NPVS-R is a descriptive phrase linked to a specific provision of the *Code of Ethics for Nurses* (ANA, 2001). All items are expressed in the positive direction and the tool is absent of reverse scoring *(*Weis & Schank, 2009).

The instrument has previously been studied and piloted. A principle components analysis (PCA) was conducted with varimax rotation and Kaiser normalization (Weis & Schank, 2009). Varimax rotation helps to maximize factor loading which in turn clarifies the relationship between the item and the factor. Cronbach's alpha procedure was used to examine internal consistency reliability at .92. Validity assessment of the NPVS-R was examined using factor analysis. The Kaiser-Meyer-Olkin measurement of sampling

adequacy was .93, and the Bartlett's test of sphericity was statistically significant at ($p<.0001$). For piloting this tool it was determined that a sampling size of 782 participants provided enough power for testing the instrument (Weis & Schank, 2009). Five factors were identified and linked to the 26 items. The factors and number of items associated include; *caring* – nine items, *activism* – five items, *trust* – five items, *professionalism* – four items, and *justice* – three items. This instrument which was adapted from the original NPVS based on the 1985 *Code for Nurses* (ANA) aligns with the *Code of Ethics for Nurses* (ANA, 2001) and in initial testing demonstrated high levels of validity and reliability. The developers suggest it is a useful tool for researchers and educators for investigating professional values development (Weis & Schank, 2009). The open-ended question added to the survey was developed to explore factors that influenced the internalization of nursing professional values.

The NPVS-R and the NPVS have been used for studying nursing professional values in a variety of nursing school and nursing practice settings. An early study conducted by Eddy et al., (1994) utilized the NPVS, the original scale developed from the 1985 *Code of Ethics for Nurses* to compare the values of nursing faculty members to those of senior baccalaureate nursing students. The NPVS was implemented by Martin et al. (2003) to compare the values orientation of graduating baccalaureate degree nurses and associate degree nurses. Additionally, it was implemented by Leners et al. (2005) to explore professional values development in undergraduate students, and a three group cross-sectional design study conducted by Leduc and Kotzer, (2009) compared the values of nursing students, new graduates and seasoned professionals. In another study, Iacobucci et al., (2012) implemented the NPVS-R in a descriptive correlational design

study for exploring the relationship between nursing professional values, self-esteem, and ethical decision making among senior level nursing students in a baccalaureate program. Alfred et al. (2013) implemented the NPVS in the first arm of their study and then adapted the NPVS-R in the second arm of their descriptive correlational study to compare nursing professional values of American and Taiwanese nursing students. In an experimental, posttest only design study, Fowler (2013) implemented the NPVS-R with a group of 2nd year baccalaureate nursing students to investigate if service-learning enhanced the development of nursing professional values. Fischer, (2014) utilized the NPVS-R to compare the development of nursing professional values among associate, diploma and baccalaureate nursing students. Considering the wide use of both the NPVS and the NPVS-R spanning the past twenty years, the NPVS-R was believed to be a suitable instrument for this study.

Provision for Protection of Human Subjects

A proposal for this study was presented to Idaho State University (ISU), Internal Review Board (IRB) for approval. After obtaining approval, the study proposal was presented to the Oregon Health & Science University (OHSU), IRB for approval to conduct the study with OHSU nursing student participants. Following OHSU, IRB approval the study was conducted via an electronic platform, Survey Monkey.

An information sheet describing the study was added as an attachment to the electronic notification of the survey for purpose of consent. Completion and return of the survey was considered consent to participate. Participants were assured there anonymity would be retained and participation in the study would in no way impact their course or

program outcomes. Additionally participants were notified of the voluntary status of participation and the prerogative to withdraw from the study at any time.

Analysis Procedures

The data were analyzed using the statistical program R (R Core Team, 2015). Content analysis was used to analyze the participant's responses to the single open-ended question. Empirical Bayes estimation and non-parametric analysis was used to calculate scores for each of the different strata. The Mann-Whitney test was applied to detect item by item differences with an adjustment by Bonferroni correction for the 26 items. Confirmatory factor analysis (CFA) and bifactor analysis were applied to determine factor loadings of the latent variables, caring, activism, trust, professionalism, and justice. Parametric bootstrap approximations were applied to determine the *p*-value for the chi-squared goodness-of-fit measure. This allowed for measuring the differences of the latent trait scores by strata.

Summary

This chapter outlined the plan for this non-experimental observational study. The setting, sample, and data collection methods were described. The instrument for data collection was presented with detail on its strength, use, and validity. Examples of studies were presented to provide rationale for the selection of this instrument. Procedures and a plan for protecting human subjects are presented, and the plan for analyzing the data is included.

CHAPTER IV: Results

The purpose of this study was to measure the internalization of nursing professional values of baccalaureate nursing students in the first, second, and third year of the educational program and investigate the factors that fostered the development of these values. Additionally, stratifying participants by demographic variables to include; age, gender, ethnicity, race, and rural or urban identification were of interest.

Statistical analysis began with descriptive statistics and application of the Generalized Partial Credit Model (GPCM). Analysis of the single open-ended question was conducted to categorize similar responses. This was achieved through frequency counts of the single item responses. This analysis included reading the answers several times for identifying and counting like responses for categorization. The description of the sample is presented followed by the study results.

Participant characteristics

A total of 407 baccalaureate nursing students were contacted for participation in this study. Sophomores (first year), $n = 129$, juniors (second year), $n = 133$, and seniors (third year), $n = 145$, comprised the total of $n = 407$. From this sample, a total of 106 baccalaureate nursing students participated in the study. This included $n = 44$ students in their first year (sophomores, 42% of sample), $n = 30$ students in their second year (juniors, 28%), and $n = 31$ students in their third year (seniors, 29%) of the baccalaureate program. One participant did not provide information to allow classification of year in school. The sample was primarily female, $n = 93$ (88%) and white, $n = 93$ (88%). The age range of 20-29, $n = 67$ comprised 63% of the sample and, $n = 62$ of the participants

(58%), identified as being from a rural community. Additional demographic data is reported in Table 1.

Table1:

Demographics

Age • 20-29 • 30-39 • 40-49 • Non-respondent	**{# (%)}** 67 (63%) 29 (27%) 9 (9%) 1 (1%)
Gender • Female • Male • Non-respondent	**{# (%)}** 93 (88%) 12 (11%) 1 (1%)
Ethnicity • Hispanic or Latino • Non-Hispanic/Latino • Non-respondent	**{# (%)}** 15 (14%) 90 (85%) 1 (1%)
Community • Rural • Urban • Non-respondent	**{# (%)}** 62 (58%) 42 (40%) 2 (2%)
Race • Asian • Black or African American • Native Hawaiian or Other Pacific Islander • White • Non-respondent	**{# (%)}** 8 (7%) 1 (1%) 1 (1%) 93 (88%) 3 (3%)
Year in School • Sophomore (first year) • Junior (second year) • Senior (third year) • Non-respondent	**{#(%)}** 44 (42%) 30 (28%) 31 (29%) 1 (1%)

Overview of the instrument

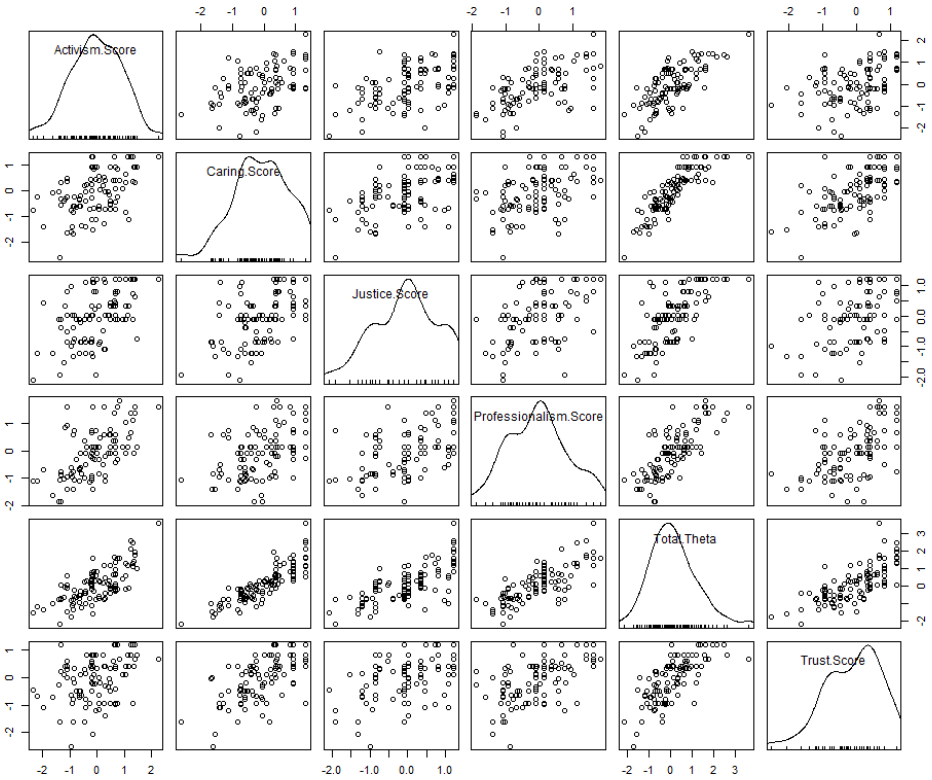
The NPVS-R scale was implemented via a Survey Monkey questionnaire to address the first aim of the research study. One additional question was developed by the researcher to address the second aim and was structured as an open ended response item. The analysis of the first research aim is addressed first, followed by an analysis of the second research aim of the study. The analysis begins with a description and overview of the NPVS-R instrument for establishing a framework for understanding the analysis and results of the current study.

The NPVS-R scale is composed of a 26-item Likert-type scale instrument that is used to measure personal perceived importance of professional values within the nursing practice. All items on this instrument are rated as 1-5 on a Likert-type scale with no reverse-scored items. Traditionally, the instrument is stated to measure a univocal scale that appraises personal perceived importance of professional values using a summative measure with scores ranging from 26 to 130 with no subscales (Weis & Schank, 2009). Weis and Schank (2009) suggested an a priori hypothesis that the NPVS-R consists of five-factors by applying confirmatory factor analysis (CFA) on the results of their own exploratory factor analysis (EFA). This EFA identified a mapping of item responses to each of the five latent traits distinguished by the factor loadings. Significant statistical difficulties surfaced with an in-depth review of the work presented in the Weiss and Schank (2009) paper on the development and evaluation of this instrument. The first and most significant difficulty being that factor analysis is only mathematically appropriate when considering continuous manifest variables along with a continuous measure of the latent trait (Dawson & Trapp, 2004, p. 272). While the response here is a continuous

variable, the manifest variables are measured according to Likert-type item scoring and are therefore an ordered, but non-metric indicator of the response. In terms of mathematical interpretation, the distance between a 2 and a 3 in response does not equal 1, but simply an ordering of numbered responses. Adding these responses, assumes equal distance between each numbered response yet this does not hold within mathematical properties, thus this method is unsuitable (Dawson & Trapp, 2004, p. 27).

Another difficulty with the work presented in the Weiss and Schank (2009) paper, is the application of varimax rotation within the analysis. Further complications occur due to the factor loadings obtained through the EFA procedure which are subject to the data and structure of the chosen rotation (Grove, Burns, & Gray, 2013, p. 398). This implies that these loadings are not robust to other studies and cannot be used as weighting factors for comparable analysis, though in repeated study, if the rotation chosen was suitable, factors should be composed of very similar groupings. Weiss and Schank (2009), suggest varimax rotation was appropriate, asserting the factors represented on the instrument were not thought to be correlated with each other. In contrast this researcher proposes that a promax rotation would have been more appropriate. Figure 1 presents a scatterplot matrix of these factors and the total professional values score demonstrating the cross-correlation suggesting application of a promax rotation.

Figure 1



The current study applied CFA to validate the hypothesized structure of the factors in addition to the presentation of an alternative methodology called bifactor analysis (Grove, Burns, & Gray, 2013, p. 398). Lastly, presented in Table 2, differences that result from EFA are applied on the current studies data set.

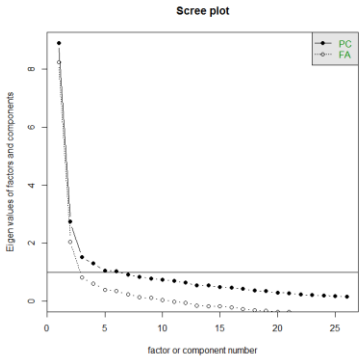
Table 2

Correlations	Activism	Caring	Justice	Professionalism	Trust	Total
Activism	-	0.4259405	0.5008985	0.5810704	0.3217493	0.686342
Caring		-	0.5547359	0.4922154	0.6575182	0.8879295
Justice			-	0.5181454	0.4815898	0.7091070
Professionalism				-	0.5581102	0.7480025
Total					0.7506683	
Trust						-

Verifying the PCA/EFA work from Weis and Schank

Weis and Schank (2009) applied Principal Components Analysis (PCA) (Grove, Burns, & Gray, 2013, p. 566-567), to a large dataset to identify the number of components that should be used to represent the questionnaire resulting in the determination of 5 factors. EFA was applied to the data using the 5 factors with varimax rotation. Factor loadings were identified in order to determine the latent variable structure of the questionnaire and verify its validity and reliability. The standard principal components implies that 5 or 6 factors should be applied, matching Weis and Schank's (2009) suggestion that 5 will suffice (Figure 2). When only 4 factors are applied in EFA, the *p*-value for testing the hypothesis of 4 factors being sufficient = 0.0443, indicates 4 is an insufficient number of factors. When 5 factors are applied, $p = 0.175$ indicating that 5 factors are sufficient. The data in the current studies data set consists of 106 observations with a1:4 ratio of questions to participant, which indicates a weak but reasonable sample size.

Figure 2



Applying Bartlett's and varimax rotation, Table 3 presents the factor loadings using the current studies data set. Table 4 presents the factor components and loadings between Weiss and Schank (2009) and the current study.

Table 3

Factor	SS Loading	Proportion of Variance	Cumulative Proportion
1	3.732	0.144	0.1440
2	3.663	0.141	0.2850
3	2.489	0.096	0.3810
4	2.269	0.087	0.4680
5	1.082	0.042	0.5100

Table 4

	Weis and Schank					Rose				
Item	F1-Caring	F2-Activism	F3 - Trust	F4-Professionalism	F5-Justice	F1	F2	F3	F4	F5
1			0.65					0.429		
2			0.6					0.507		
3					0.61			0.489		
4		0.56					0.658			
5				0.6			0.457	0.465		
6				0.77			0.407			
7				0.73					0.455	
8				0.58					0.609	
9			0.49					0.349	0.419	
10		0.66					0.534			
11		0.65					0.575			
12					0.67				0.624	
13					0.7				0.457	
14			0.66			0.405				
15			0.66					0.569		
16	0.6					0.739				
17	0.46						0.432			
18	0.54					0.444				
19		0.71					0.622			
20	0.67					0.675				
21	0.76					0.795				
22	0.5									
23	0.61						0.423			
24	0.64					0.406				0.835
25	0.69					0.766				
26		0.79					0.76			

Highlighted cells in Table 4 indicate major differences in factor loadings, particularly with regards to which factors are represented by which items. This is concerning, as these results do not match the latent variables suggested by the larger study; however, results of EFA are very subjective to sample size, so the results of the current studies sample may not be particularly representative of the instrument in general (Grove, Burns, & Gray, 2013, p. 398).

Some of these differences may be reasonable such as item 3, affiliating with trust rather than justice, or item 6, affiliating with activism rather than professionalism. Interestingly, item 22 doesn't appear anywhere in the loadings for the current study.

As previously explained, both PCA and EFA are techniques best suited to continuous predictors of latent traits ((Grove, Burns, & Gray, 2013, p. 567). The numeric system assigned to Likert-type data is artifice and thus, the results of such study are also subject to the selection of representative numeric schemes, rotation methods, and assumptions about the item ability to input into multiple content domains. Clusters of items with similar content in a multidimensional structure are disregarded in practice (Reise, Moore, & Haviland, 2010). This may or may not be appropriate in any given instrument; however, given the failure of goodness of fit measures in our generalized partial credit model, in this instrument, it may be a useful question to assess.

If an instrument is not unidimensional total score measures cannot be interpreted due to ambiguity in what they actually mean (Trochim, 2005, p. 108). In the case of this study, if there is multi-dimensionality represented in the instrument, as indicated by the a priori hypothesis and further evidenced by the CFA results, then the comparison of either

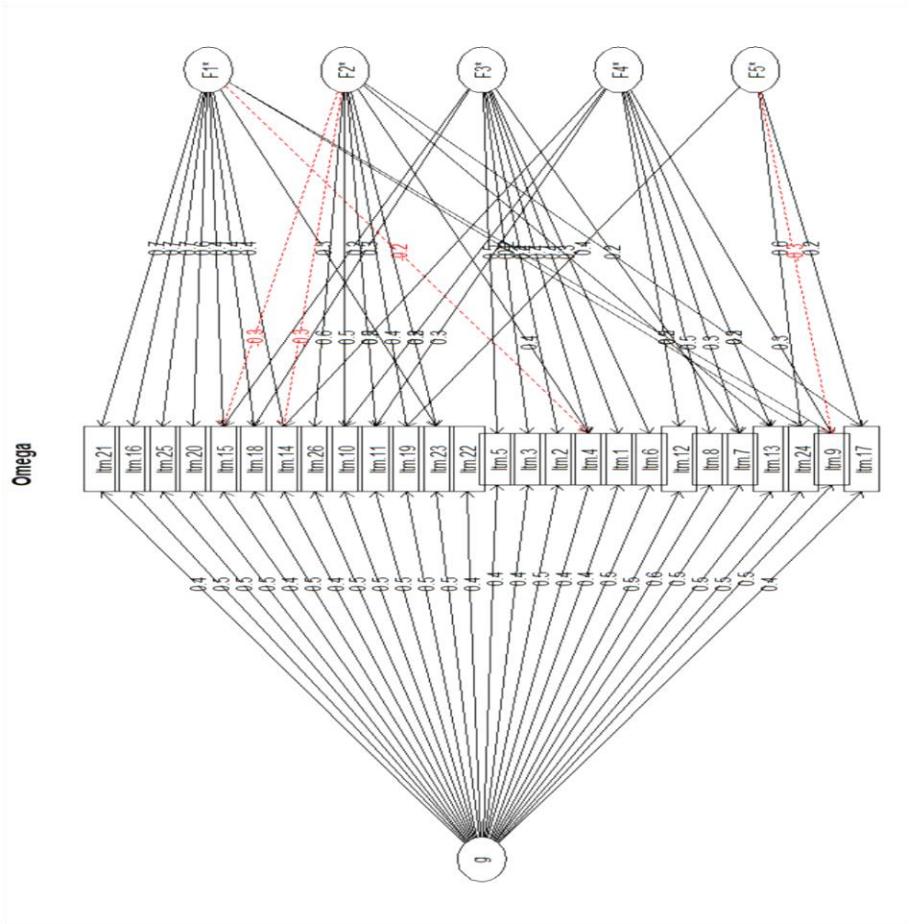
the GPCM or total score is insignificant as these scores are not indicative of a single latent trait.

Weis and Schank (2009) recommend the uncorrelated traits model as a reasonable model for this instrument; however, other models exist. Correlated traits model, second-order model, and the bifactor model are possible models for application to this instrument.

To determine if the second order model or the bifactor model is the correct model for this instrument, questions regarding the measurement of the latent trait need to be addressed. Specifically, is the target latent trait, personal perception of professional values such as, the combination of commonalities of the measureable latent traits identified by Weis and Schank (2009), or is there a general trait, personal perception of professional values, that explains some portion of the variation in the results while the latent traits proposed by Weis and Schank (2009) represent group traits that mediate the results by explaining other portions of the variance in the data?

An example of a five trait, bifactor model is presented in Figure 3 as generated by the analysis of the data collected for this study. In general, a larger study would be useful to explore these more refined structural equation models; however, there is strong statistical support for the use of these methods over simple summative analysis when the possibility of multiple sub-traits is present in the instrument.

Figure 3



Section 1: Instrument Analysis and General Hypothesis Model Fitting

A polytomous IRT (item response theory) model known as the Graded Response Model (GRM) was initially considered for analyzing the survey results. However, one of the underlying assumptions of this model is that the probabilities of response for each category on the Likert-type scale are strictly increasingly monotonic in the cumulative function (Harvey & Hammer, 1999). This fails for many of the questions within this studies sample, due to low/no responses at low values of the item scale; therefore the GRM could not be applied to this model. As an alternative, the Generalized Partial Credit Model (GPCM) was applied.

The assumptions under this model are weaker though allows for occurrence of patterns within the questionnaire items that are not possible under the GRM. Generally speaking, the response to any item on the instrument is a function of the individual's latent trait and the discrimination of the item. This is in contrast to classical test theory where the response is represented by the difficulty of the item (Grove, Burns, & Gray, 2013, p. 445). In applying the GPCM, patterns of responses can be assigned an individual score representing a standardized measure of the individual's latent trait. In this study the latent trait is the personal perceived importance of professional values (Muraki, 1992). This statistical model allows for assessing each item for its discrimination ability and the information provided by that item towards the total measure of the latent trait.

In the analysis of the current study, a divergence from the original intention of the NPVS-R, which is to take a summative measure of the Likert-type items by individual, was chosen to preserve statistical integrity. The GPCM analysis allows for compartmentalization of the variation in responses based on both the question properties and the individual's latent ability (Muraki, 1992). The latent trait or ability is compared, subject to unexplained variation in responses. GPCM analysis was applied to appropriately tease out the variable of interest. It is a non-parametric method and does not rely on the parametric assumptions of normality, but rather relies on observed probabilities of adjacent categories.

A numeric breakdown of the questionnaire is presented in Table 5. Interestingly, none of the items present have a mean close to 2.5, which would be expected of data that has either a uniform or normal distribution (Dawson & Trapp, 2004, p.77). While normally distributed data is summative, data of this format may not end up with a normal

distribution when summed, indicating that this method may be unsuitable for this sort of data. Additionally, many of these items are on a truncated scale with the minimum chosen response being a 2 or a 3, rather than a 1, which contributed to the failure of the GRM analysis (Grove, Burns, & Gray, p. 225).

Following the presentation of the item responses in Table 5, figure 4 presents the correlations between the different item responses. Items with an X through them had a statistically insignificant correlation between them at the 0.01 level of significance. The darker colors and the closer to a straight line the ellipse appears represent stronger correlations, and the lighter colors closer to the circles represent weaker correlations that are still statistically significant. All correlations are positive. These correlations suggest some groups of questions are strongly associated and therefore, dimension reduction was likely a useful tool in this data. This illustration supports the unlikelihood that this survey is only measuring one general factor, thus the univocal assumption is probably not accurate. This is further indicated in Figure 5 by the scree plot which implies that somewhere between 2 and 5 factors is likely appropriate in this data. Though these methods are appropriate for continuous data, their applicability diminishes with polytomous item response.

Table 5:

vars	n	mean	sd	median	trimmed	min	max	range	se
vars	n	mean	sd	median	trimmed	min	max	range	se
1	106	4.056604	0.65944	4	4.081395	2	5	3	0.06405
2	106	4.415094	0.615172	4	4.476744	3	5	2	0.059751
3	106	4.339623	0.660257	4	4.418605	2	5	3	0.06413
4	106	3.415094	0.779107	3	3.453488	1	5	4	0.075674
5	105	3.419048	0.805999	3	3.435294	2	5	3	0.078657
6	106	4.037736	0.716134	4	4.081395	2	5	3	0.069557
7	106	3.95283	0.652936	4	3.953488	2	5	3	0.063419
8	106	3.915094	0.677782	4	3.918605	2	5	3	0.065832
9	106	4.245283	0.701173	4	4.313953	2	5	3	0.068104
10	105	3.819048	0.717648	4	3.811765	2	5	3	0.070035
11	106	3.59434	0.80212	4	3.581395	2	5	3	0.077909
12	106	4.113208	0.734468	4	4.162791	2	5	3	0.071338
13	106	3.95283	0.785367	4	3.976744	2	5	3	0.076282
14	106	4.669811	0.54723	5	4.755814	3	5	2	0.053152
15	106	4.575472	0.568174	5	4.639535	3	5	2	0.055186
16	106	4.537736	0.588372	5	4.604651	3	5	2	0.057148
17	106	3.292453	1.041674	3	3.290698	1	5	4	0.101176
18	105	4.52381	0.65185	5	4.635294	3	5	2	0.063614
19	106	3.433962	0.839715	3	3.430233	1	5	4	0.08156
20	106	4.415094	0.728572	5	4.534884	2	5	3	0.070765
21	106	4.471698	0.679041	5	4.581395	2	5	3	0.065954
22	106	4.188679	0.663515	4	4.232558	3	5	2	0.064446
23	106	3.971698	0.774075	4	3.988372	2	5	3	0.075185
24	106	4.169811	0.761849	4	4.209302	3	5	2	0.073997
25	106	4.537736	0.664394	5	4.651163	2	5	3	0.064532
26	105	3.27619	0.945589	3	3.247059	1	5	4	0.09228

Figure 4:

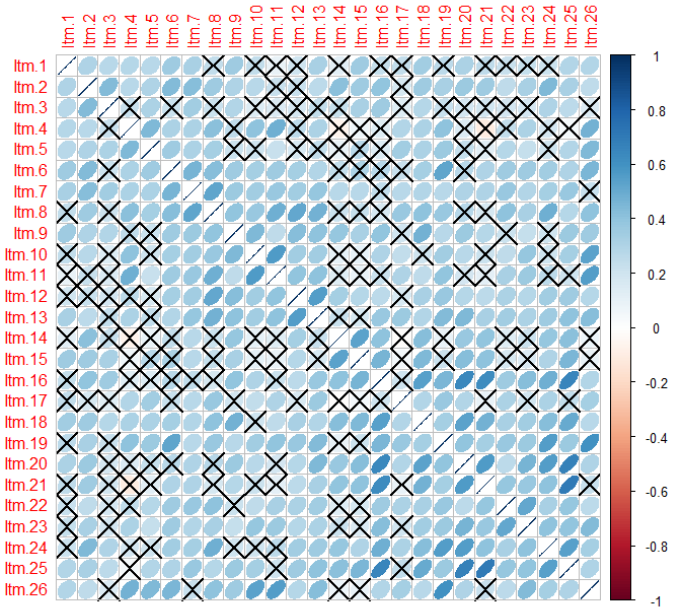
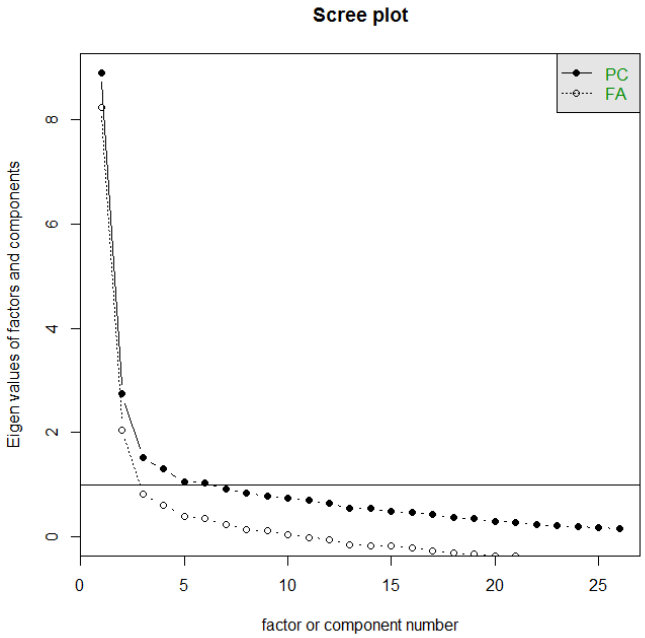


Figure 5:



The instrument dimensionality reduction will be addressed later in the analysis after first considering each characteristic individually in its value to the entire instrument.

Table 6 presents a list of Cronbachs alpha for the instrument with the results of each question removed. Values greater than 0.9 indicate an excellent internal consistency of the instrument; however, they do not imply that the instrument is one-dimensional. More important, very small decreases by any one value when excluded indicate that the items are each adding to the reliability of the whole.

Table 6

		value
Alpha		0.920094
Excluding Item	1	0.918298
Excluding Item	2	0.916961
Excluding Item	3	0.91908
Excluding Item	4	0.918476
Excluding Item	5	0.918428
Excluding Item	6	0.916565
Excluding Item	7	0.916679
Excluding Item	8	0.915687
Excluding Item	9	0.916875
Excluding Item	10	0.916502
Excluding Item	11	0.917392
Excluding Item	12	0.917168
Excluding Item	13	0.915755
Excluding Item	14	0.919128
Excluding Item	15	0.918706
Excluding Item	16	0.916256
Excluding Item	17	0.920389
Excluding Item	18	0.916286
Excluding Item	19	0.915223
Excluding Item	20	0.915977
Excluding Item	21	0.917622
Excluding Item	22	0.91759
Excluding Item	23	0.916871
Excluding Item	24	0.915945
Excluding Item	25	0.915492
Excluding Item	26	0.915671

It's important to consider the item characteristic curves for this instrument (Figure 6). Rather than look at each item individually, the plot of the item information curves are reviewed together. By doing so it illustrates that the curves tend to fall off near the right end which indicates a propensity for scores to fall high on all questions, otherwise described as left skewness in responses (Grove, Burns, & Gray, 2013, p. 540). This indicates the questions in the instrument do an inadequate job of distinguishing latent traits at the higher end of the scale. Additionally, most of the item information curves are relatively flat, that is, they do not provide a great amount of information to the resulting measure in terms of discriminating between how individuals will respond to the various questions. In general, there are a few questions that stand out in this survey. Table 7 presents the discrimination parameter estimates for each question, illustrating the strength of the question related to the latent trait, the larger the value the higher the association (Trochim, 2005, p. 54).

Figure 6

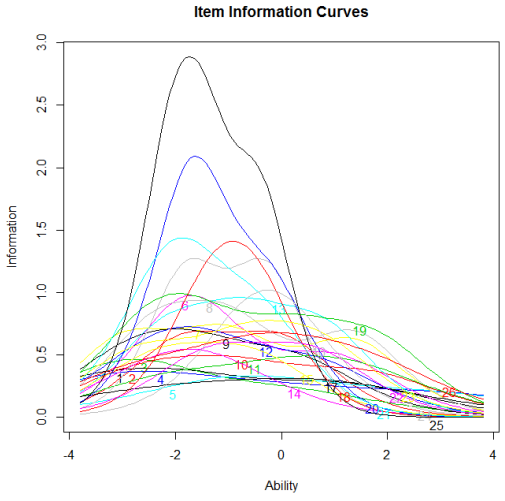


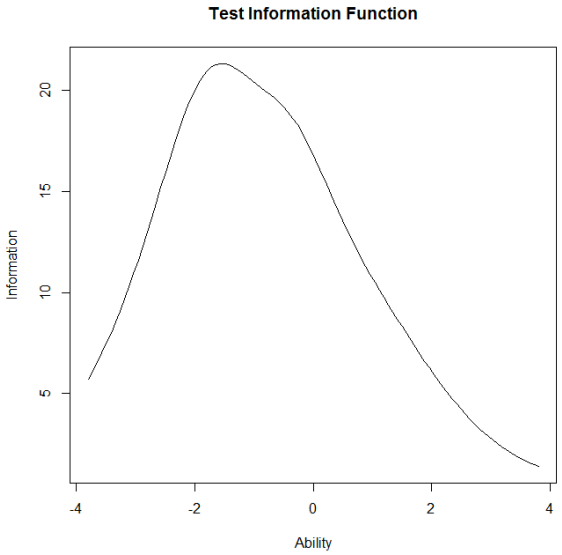
Table 7

		Discrimination
Item	1	0.945
Item	2	1.491
Item	3	0.834
Item	4	0.766
Item	5	0.779
Item	6	1.323
Item	7	1.514
Item	8	1.592
Item	9	1.219
Item	10	1.091
Item	11	1.007
Item	12	1.2
Item	13	1.537
Item	14	1.068
Item	15	1.301
Item	16	2.091
Item	17	0.592
Item	18	1.814
Item	19	1.425
Item	20	1.89
Item	21	1.618
Item	22	1.357
Item	23	1.359
Item	24	1.493
Item	25	2.497
Item	26	1.058

The highlighted rows above indicate the items providing the most information regarding the general latent trait being modeled. Overall, the scores on questions 16, 18, 20, and 25 provide a major portion of the information regarding the ability of the individual in terms of their personal perceived importance of nursing professional values. Figure 7 presents a summary of the test information function that combines the information from all items in the survey. The information provided in the graph (Figure

7) indicates that this tool is best for identifying the individual latent trait of people who score lower rather than higher on the factor.

Figure 7



A goodness of fit test was performed, specifically, a Parametric Bootstrap Approximation, using the Pearson chi-squared Goodness of Fit test performed in R (R Core Team, 2015). Using 98 simulated data-sets the p-value of 0.02 was calculated indicating that this model does not actually fit the data well. A number of reasons exist supporting why this model may fail to fit the data. One of the most common reasons would be a violation of the local independence assumption. This assumption requires that item responses are uncorrelated after controlling for the latent trait in question (Grove, Burns, & Gray, 2013, p. 587). A variety of reasons are possible, but the primary reason is that the model is measuring multiple latent traits instead of a univocal or one-dimensional traits. As a result, a strong correlation between several items may dominate the estimates which cause the assessment of this item to suppress important latent traits that might be

valuable. This indicates a lack of construct validity (Shadish, Cook, & Campbell, 2002, p. 72-73.

Another possibility of this model failing to fit the data well is that different strata within the population perform differently, and therefore the item response function cannot apply to all members of the population. This can occur in a number of circumstances. First, if individual items function differently for varying strata of the population, it may cause problems for the overall results. In other words, if examinees with equal individual abilities have different performance on a question, the item response function would be invalid (Harvey & Hammer, 1999). Secondly, if different strata of the population have, on average different abilities, the unbalanced mixture may affect the test function negatively and therefore; different response functions should be fit by strata.

The distinction between these two possible violations of assumptions for the goodness of fit for this model is precisely the point of this study. If it can be verified that all possible strata of the population have similar abilities, and also have similar response distributions on every question, than the only remaining possibility is that the instrument is not univocal, thus an assessment of the latent constructs is essential to determine what is actually being measured. The reality of testing every possible social or physical strata associated with the data is unlikely; however, as evidenced in the EFA and scree plot as well as plot correlations, the first assumption may be violated regardless of performance by strata.

In order to consider the possibilities, scores were calculated for each individual pattern of responses using empirical Bayes estimation. The assumption of a Gaussian

kernel for the density of these scores was deemed unreasonable as the general behaviors of individuals may be quite different due to the heavy skewness of individual items and the discrimination of the test being strongest at low to moderate scores (Dawson & Trapp, 2004, p. 77). This may present outliers in the data, therefore non-parametric analysis is considered in the analysis of individual strata. The following section is a presentation of strata and their score comparisons.

Section 2: Analysis of Strata

Score comparison by age

Figure 8

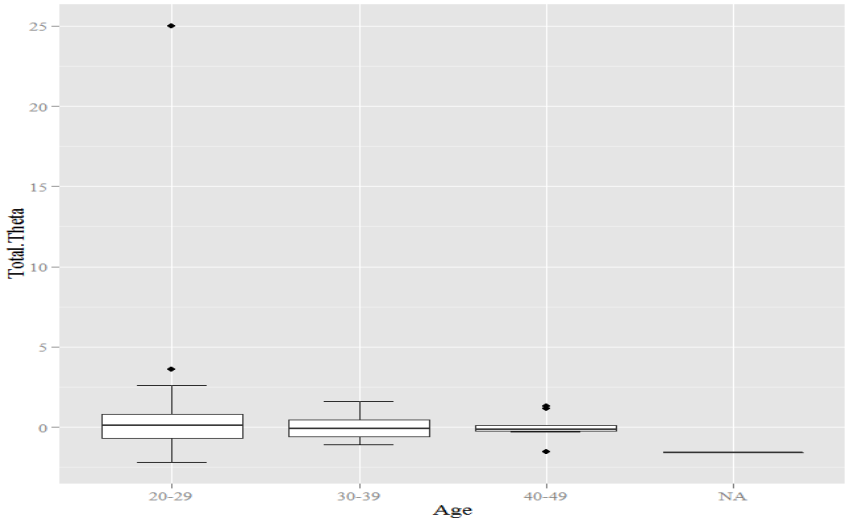


Table 8

				T Test	Kruskal Wallis
	Mean	Sd	n	p-value	p-value
20-29	0.5465	3.2289	67	0.416	0.722
30-39	-0.0188	0.6929	29		
40-49	0.01136	0.8328	9		

Applying the Welch adjustment due to non-equal standard deviations, it is concluded that there is insufficient evidence to demonstrate a difference between scores and the age of the participants (Figure 8, Table 8). Similar results are demonstrated in the question by question analysis as presented in Table 9.

Table 9

		Kruskal-Wallis p-value
Item	1	0.356
Item	2	0.3722
Item	3	0.7837
Item	4	0.678
Item	5	0.7579
Item	6	0.4749
Item	7	0.9239
Item	8	0.2288
Item	9	0.3698
Item	10	0.3666
Item	11	0.6079
Item	12	0.7815
Item	13	0.555
Item	14	0.425
Item	15	0.564
Item	16	0.8434
Item	17	0.451
Item	18	0.3042
Item	19	0.7452
Item	20	0.663
Item	21	0.228
Item	22	0.65
Item	23	0.855
Item	24	0.807
Item	25	0.282
Item	26	0.764

Score comparison by gender

Figure 9

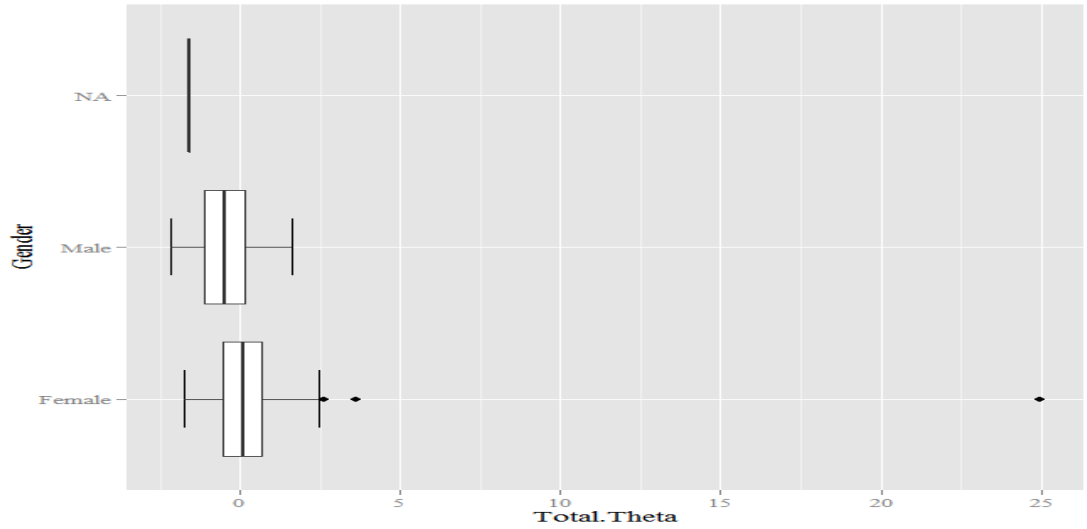


Table 10

				T Test	Mann-Whitney		
	Mean	Sd	n	p-value	p-value	Cohens D	Power
Female	0.439636	2.745081	93	0.127	0.1167	0.396497803	0.252
Male	-0.39252	1.12878	12			0.737216287	0.671

The Mann-Whitney test is used to analyze these data. There is marginally insufficient evidence to support the claim that males and females have different ability scores based on these data in this data set (Figure 9). Also, the observed difference is of moderate to strong statistical significance, Cohen's D = 0.39, using a pooled estimate of variance and d=0.73 when using the minimum due to the outlier (Table 10). With a dataset this size, the probability that a moderate difference would have been detected with the *t*-test is around 0.671 which is moderately strong given the small sample size of males; however, the outlier exacerbates the difficulties due to the mean being non-representative of these data. Considering a small to moderate scientific effect, the difference in medians is moderate at 0.58, and near statistical significance, which

suggests that there may be a difference between the response behavior of males and females.

In order to detect a by-item difference a Mann-Whitney test was applied (Table 11). Because there are 26 items, the critical *p*-value was adjusted by a Bonferroni correction of 0.05/26 = 0.00192. There is insufficient evidence from these data to support the hypothesis that at least one of the questions had a different response distribution based on gender.

Table 11

		Mann-Whitney p-value
Item	1	0.27
Item	2	
Item	3	0.478
Item	4	0.874
Item	5	0.987
Item	6	0.372
Item	7	0.506
Item	8	0.118
Item	9	0.434
Item	10	0.00905
Item	11	0.0376
Item	12	0.0939
Item	13	0.547
Item	14	0.617
Item	15	0.859
Item	16	0.00513
Item	17	0.234
Item	18	0.0156
Item	19	0.0593
Item	20	0.115
Item	21	0.118
Item	22	0.316
Item	23	0.693
Item	24	0.411
Item	25	0.0447
Item	26	0.175

Score comparison of Hispanic/Latino vs. Non-Hispanic/Latino

Figure 10

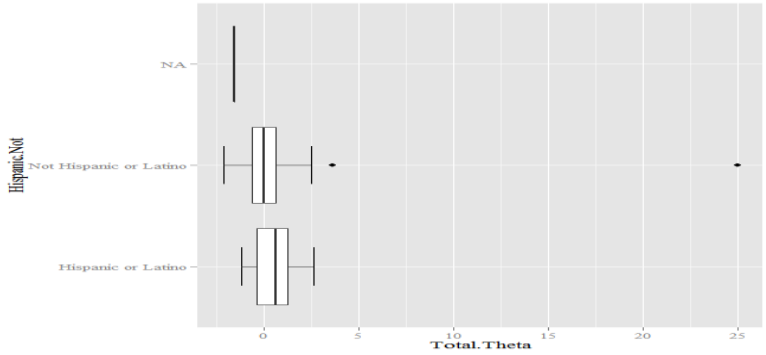


Table 12

				T Test	Mann-Whitney		
	Mean	Sd	n	p-value	p-value	Cohen's D	Power
Hispanic	0.46288	1.108176	15	0.738	0.1888	0.0648	0.042
Non	0.32481	2.798878	90			0.1246	0.0651

Based on the analysis of these data there is insufficient evidence to support the claim that Hispanic/Latino students have different ability scores based on the latent traits measured in this study (Figure 10). Though the Cohen's D values indicate no practical significance; applying a difference of medians instead, due to the outlier, Cohen's D is closer to 0.06 signaling a no difference (Table 12). With a dataset this size, the probability that a moderate difference would have been detected, had it existed, is approximately 0.498. This indicates that additional research is warranted to determine if scores between these two groups are actually different. Assuming this dataset is representative of the characteristic being analyzed, if a difference existed, there was a 50/50 chance of detecting it successfully.

In order to detect a by-item difference, the Mann-Whitney test was applied (Table 13). Because there are 26 items, the critical p-value was adjusted by a Bonferroni

correction of 0.05/26 = 0.00192. Insufficient evidence exists from this data analysis to support the hypothesis that at least one of the questions had a different response distribution based on being of Hispanic or non-Hispanic origin. Additionally, though not statistically significant; item 20 is one of the closest to being significantly different in responses between the categories and also happens to be a heavily weighted item. Results may be due to this item alone; however, due to the small sample size, it would be difficult to tell the difference.

Table 13

		Mann-Whitney p-value
Item	1	0.644
Item	2	0.25
Item	3	0.951
Item	4	0.679
Item	5	0.677
Item	6	0.0922
Item	7	0.0488
Item	8	0.395
Item	9	0.455
Item	10	0.124
Item	11	0.0587
Item	12	0.43
Item	13	0.218
Item	14	0.346
Item	15	0.627
Item	16	0.836
Item	17	0.871
Item	18	0.413
Item	19	0.173
Item	20	0.0774
Item	21	0.606
Item	22	0.612
Item	23	0.431
Item	24	0.464
Item	25	0.609
Item	26	0.282

Score comparison of urban and rural students

Figure 11

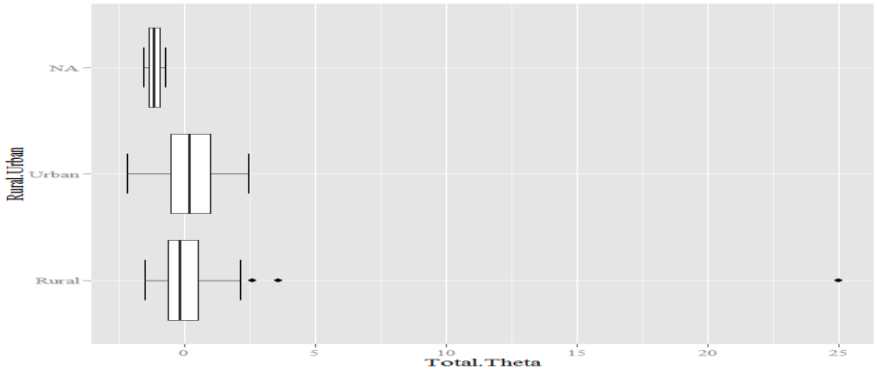


Table 14

				T Test	Mann-Whitney		
	Mean	Sd	n	p-value	p-value		Power
Urban	0.2421483	1.05733	42	0.677	0.218	Approx	0.42
Rural	0.4306173	3.306297	62				

As an indication of the extent to which an outlier skews these data, the median of the urban group is 0.2369, close to the mean, whereas the median of the rural group is -0.1246 (Figure 11, Table 14). The difference between the two medians is 0.3715, which is significantly different in both direction and magnitude than the test of means would indicate. Applying this measure with the minimum of the standard deviations yields an effect size of approximately 0.34 which is in the small practical significance range. In general, there is little evidence of a difference between ability scores of the measured latent traits of urban and rural students.

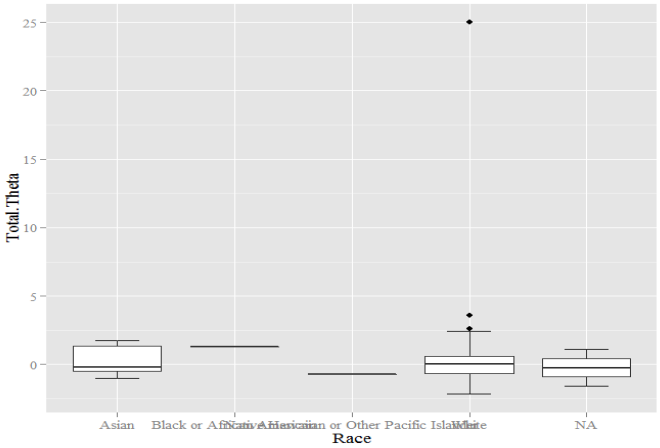
In order to detect a by-item difference the Mann-Whitney test was applied (Table 15). Because there are 26 items, the critical *p*-value was adjusted by a Bonferroni correction of 0.05/26 = 0.00192. There is insufficient evidence from these data to support the hypothesis that at least one of the questions had a different response distribution based on urban versus rural.

Table 15

		Mann-Whitney p-value
Item	1	0.889
Item	2	0.425
Item	3	0.496
Item	4	0.275
Item	5	0.971
Item	6	0.661
Item	7	0.82
Item	8	0.175
Item	9	0.997
Item	10	0.44
Item	11	0.725
Item	12	0.385
Item	13	0.173
Item	14	0.425
Item	15	0.378
Item	16	0.595
Item	17	0.751
Item	18	0.71
Item	19	0.253
Item	20	0.677
Item	21	0.67
Item	22	0.53
Item	23	0.197
Item	24	0.0214
Item	25	0.484
Item	26	0.401

Score comparison by Race:

Figure 12



Due to the limitations of this data set with only one participant reporting as being either, African American/Black, or Native Hawaiian/Other Pacific Islander, the small sample sizes prohibited the use of any statistical test to consider differences. Based on the box-plot there is little evidence to suggest any differences between the groups (Figure 12). In general there is insufficient data to stratify by this variable and achieve statistically valid results. The same can be said about the distributional item by item comparisons.

Figure 13

Comparisons of score by year in school

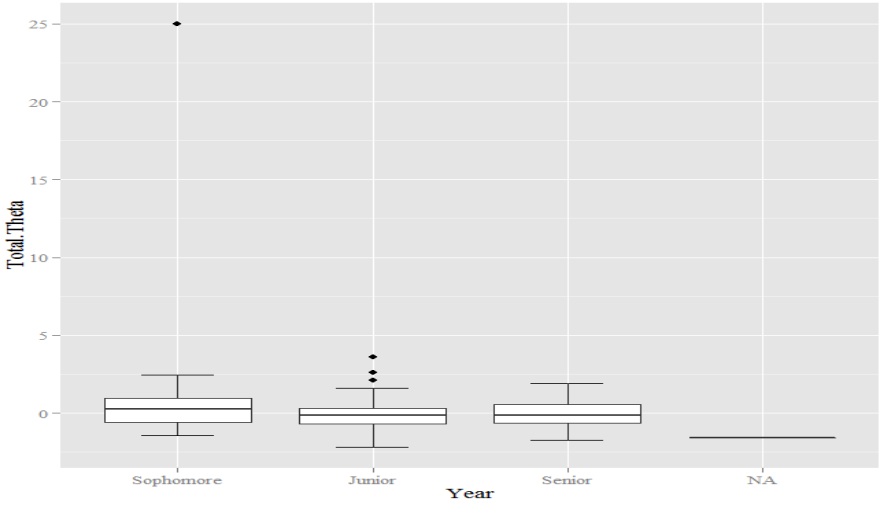


Table 16

				T Test	Kruskal Wallis		
	Mean	Sd	n	p-value	p-value		Power
Sophomore	0.77788	3.8424	44	0.359	0.31	Estimated	Not Calc
Junior	0.023415	1.21587	30				
Senior	0.040216	0.86912	31				

Applying the Welch correction for unequal variances, both the *t*-test and the Kruskal Wallis test indicate there is insufficient evidence of a difference between any combination of these groups (Figure 13, Table 16). Power was not calculated for this data set; however, a balanced ANOVA of this form with approximately 30 observations per group would have a power in the 0.3 range.

In order to detect a by-item difference the Mann-Whitney test was applied (Table 17). Because there are 26 items, the critical p-value was adjusted by a Bonferroni correction of 0.05/26 = 0.00192. There is insufficient evidence from this data to support the hypothesis that at least one of the questions had a different response distribution based on year.

Table 17

		Kruskal-Wallis p-value
Item	1	0.812
Item	2	0.367
Item	3	0.7303
Item	4	0.429
Item	5	0.73
Item	6	0.662
Item	7	0.16
Item	8	0.487
Item	9	0.0923
Item	10	0.8001
Item	11	0.798
Item	12	0.00273
Item	13	0.106
Item	14	0.0501
Item	15	0.395
Item	16	0.404
Item	17	0.823
Item	18	0.432
Item	19	0.657
Item	20	0.304
Item	21	0.492
Item	22	0.853
Item	23	0.502
Item	24	0.468
Item	25	0.193
Item	26	0.664

Section 3: CFA and determination of Latent Trait Model

In the original study, the instrument developers, Weiss and Schank (2009) applied principle components analysis (PCA) to identify significant eigenvalues for factor analysis and then applied EFA using varimax rotation to identify factors and primary loadings in order to reduce the dimensionality of the survey into five components. In this section, CFA is applied to determine whether or not the model provided by Weis and

Schank (2009) fits the current studies data well. Additionally, Weis and Schank's (2009), methodology was reproduced to determine factors and loadings corresponding to the current data. Similarities and differences between the data were compared.

Confirmatory Factor Analysis

Weis and Schank (2009), provided a CFA regarding the hypothesis of the a priori five latent variables being represented by the NPVS-R questionnaire, though they claim further study of the model is needed due to lack of robustness of the indices. The CFA is reproduced on the current studies data and presented in Table 18. The values however, denote insufficient/non-robust indicators of the model's fit; however, the current studies results match closely with the results of Weis and Schank (2009), providing little evidence that the null hypothesis of the five latent variables underlying this instrument is an inappropriate model for this questionnaire.

Table 18:

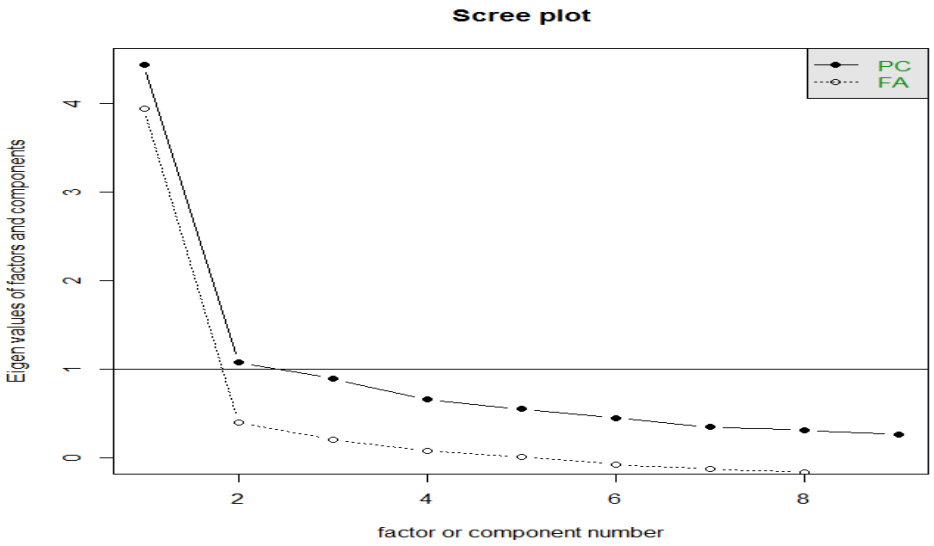
Root Mean Square Error of Approximation	0.074535 (<0.08 = acceptable)
Comparative Fit Index	0.8489056 (>0.9 is desired)
Normal Fit Index	0.6773363 (>0.9 is desired)
Chisquare	451.16 on 289 df, p = 0.000000003134535

In general, there is some indication that treating five or greater item Likert-type data as continuous is a reasonable assumption, therefore, the factors suggested by Weis and Schank (2009), were applied to the current study; however, other methodology is recommended in order to build a proper Structural Equation Model (SEM) representing this instrument.

Factor 1: Caring

The Scree plot for principal components (PC) and factor analysis (FA) presented as Figure 14, demonstrates a primary eigenvalue greater than 4, and a secondary eigenvalue closer to 1. This is a strong indicator the nine items composing this factor are one-dimensional, suggesting measures on this data give a good representation of this factor.

Figure 14



The basic histogram of the scores representing the measurement of the latent trait, caring, suggests the scores of this factor are not normally distributed and present with heavy leftward skewness. Figures 15-20 illustrate the boxplot presentation of the measurement of the latent trait caring, by demographic strata. Table 19 presents the statistical significance of the caring score per demographic strata. There is statistically significant evidence that there is a gender difference in scores for caring with males scoring on average lower than females. The effect size measure of 0.78 is moderately large, indicating that this is both statistically interesting and scientifically interesting as well.

Figure 15

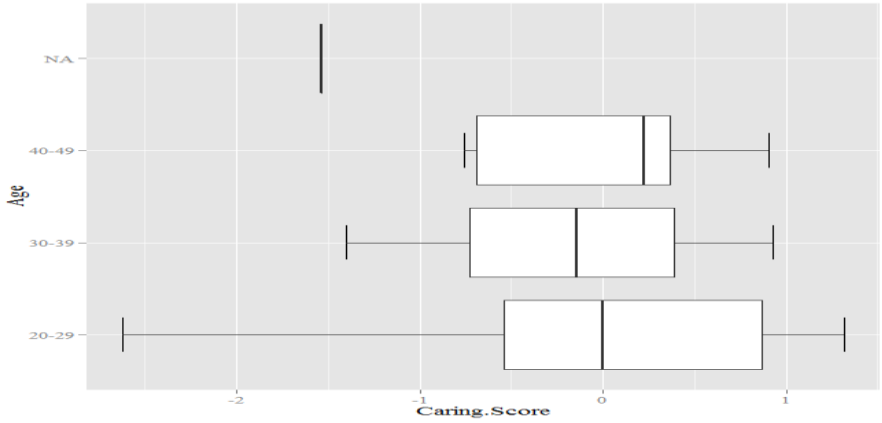


Figure 16

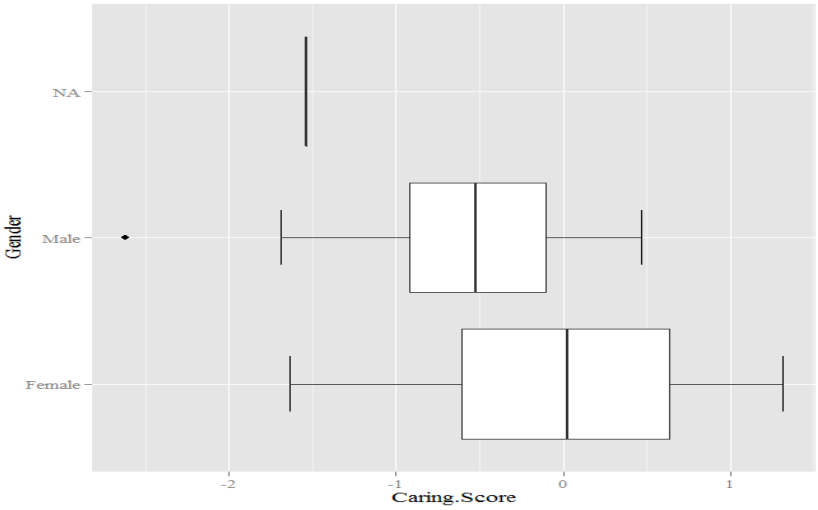


Figure 17

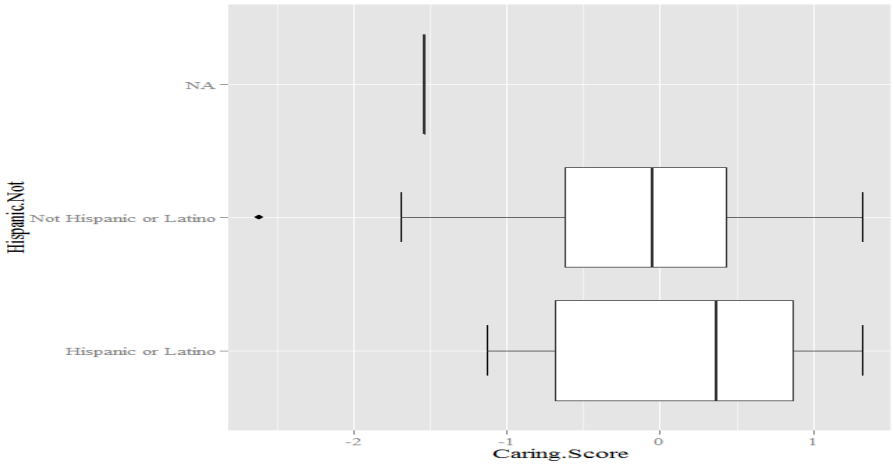


Figure 18

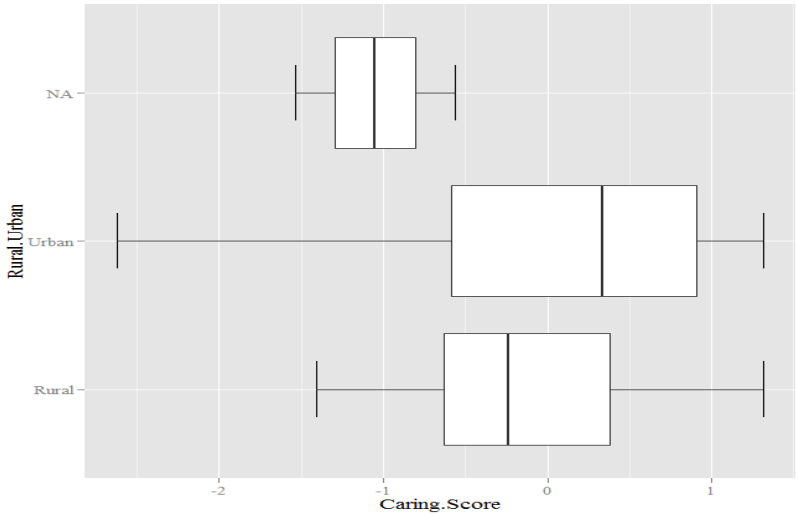


Figure 19

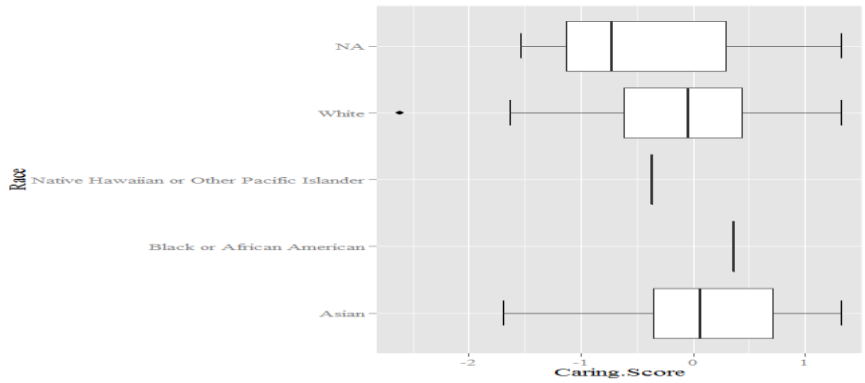


Figure 20

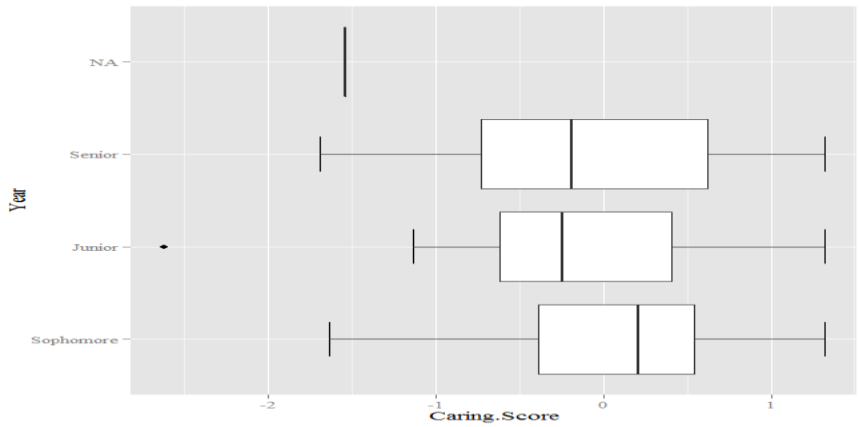


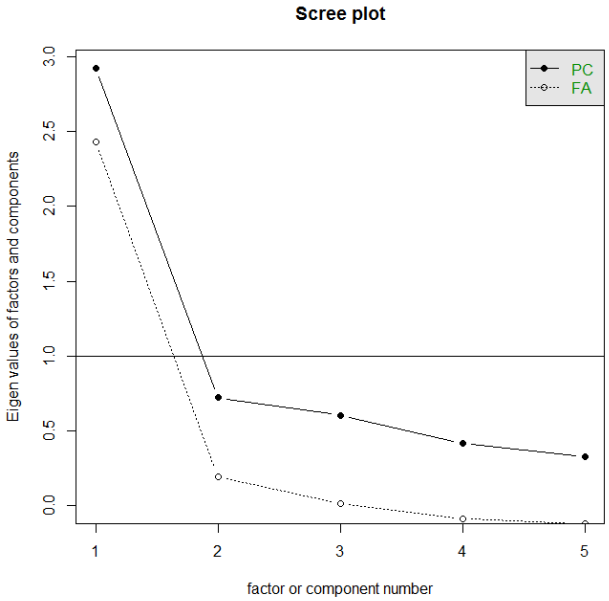
Table 19

Caring Scores								
Gender	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Male	-0.62996	-0.52526	0.796287	12	**p Value**	**p Value**	0.7818558	NA
Female	0.043097	0.02706	0.920898	93	0.03075	0.0269		
Hisp/Not	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Hispanic	0.194621	0.367267	0.846	15	p Value	p Value	0.3178582	0.199
Non	-0.0719	-0.05182	0.8309	90	0.2717	0.3764		
Rural/Urb	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Rural	-0.0871	-0.24117	0.7296	62	p Value	p Value	0.1677502	0.136
Urban	0.05749	0.33739	0.9765	42	0.416	0.174		
Age	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
20-29	0.04245	0.00226	0.905729	67	p Value	p Value		
30-39	-0.2115	-0.146	0.70998	29	0.358	0.403		
40-49	-0.029	0.22446	0.593591	9				
Year	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
Sophmore	0.097978	0.20813	0.78298	44	p Value	p Value		
Junior	-0.13976	-0.24408	0.86139	30	0.384	0.3399		
Senior	-0.11837	0.191963	0.879	31				

Factor 2: Activism

When applying parametric Bootstrap Approximations, using 84 data-sets, the *p*-value for the Chi-Squared Goodness-of-Fit measure is 0.173; however, this is insignificant in regard to the item sampling distribution. There is indication that a reasonable fit exists for this model with items 4, 10, 11, 19, and 26 in measuring a single latent trait. In addition the scree plot, (Figure 21) also provides strong evidence for measurement of a single trait.

Figure 21



Figures 22-27 illustrate the boxplot presentation of the measurement of the latent trait activism, by demographic strata. There is a statistically significant result here that suggests a different score on activism between Hispanic/Latino participants and non-Hispanic/Latino participants; however, the t-test *p*-value is not a reliable indicator due to an outlier, though the effect size suggests a low to moderate difference between the two. Table 20 presents the statistical significance of the activism score per demographic strata.

Figure 22

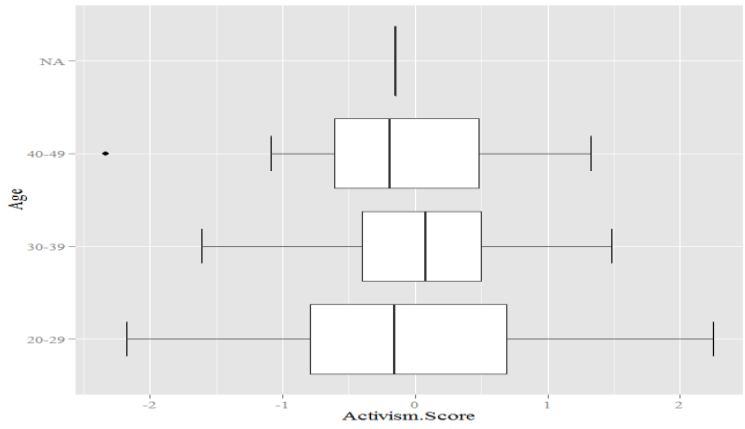


Figure 23

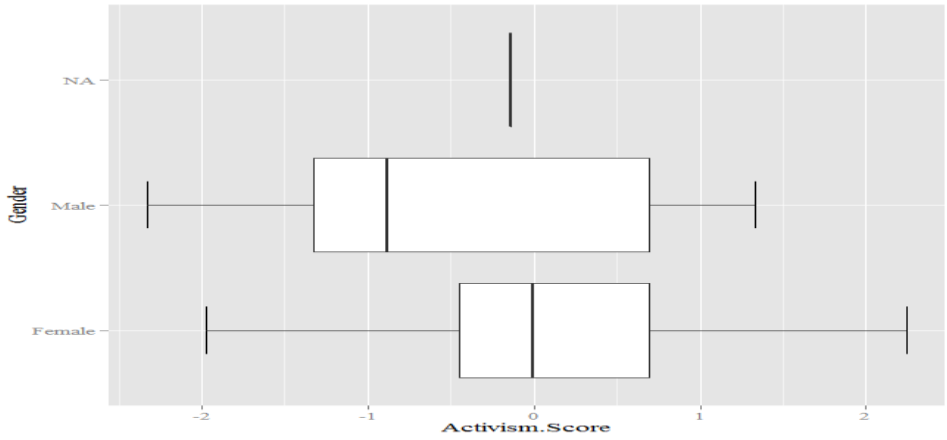


Figure 24

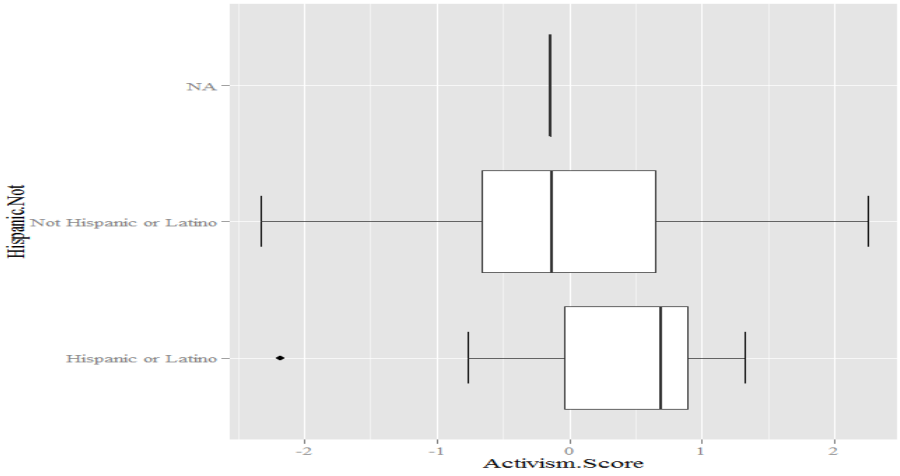


Figure 25

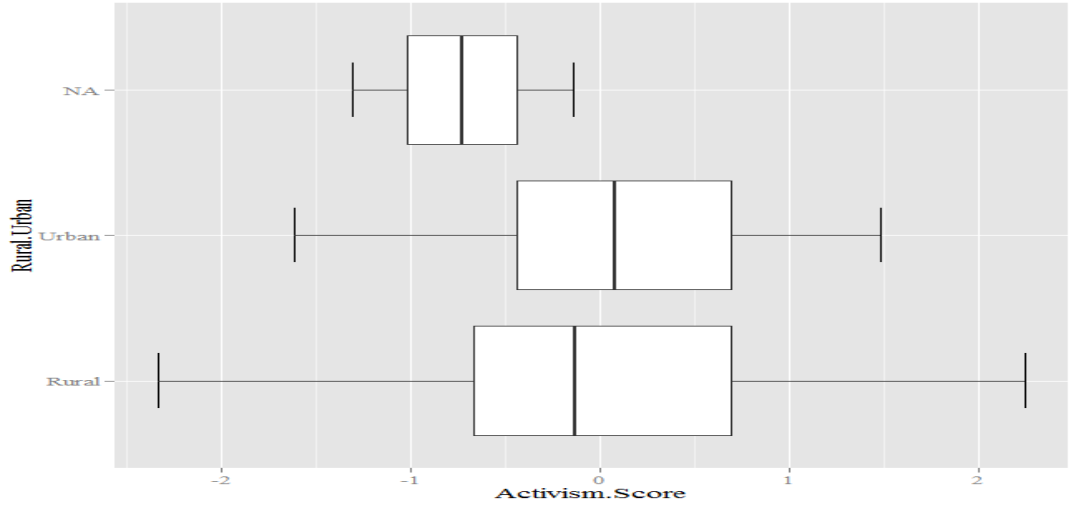


Figure 26

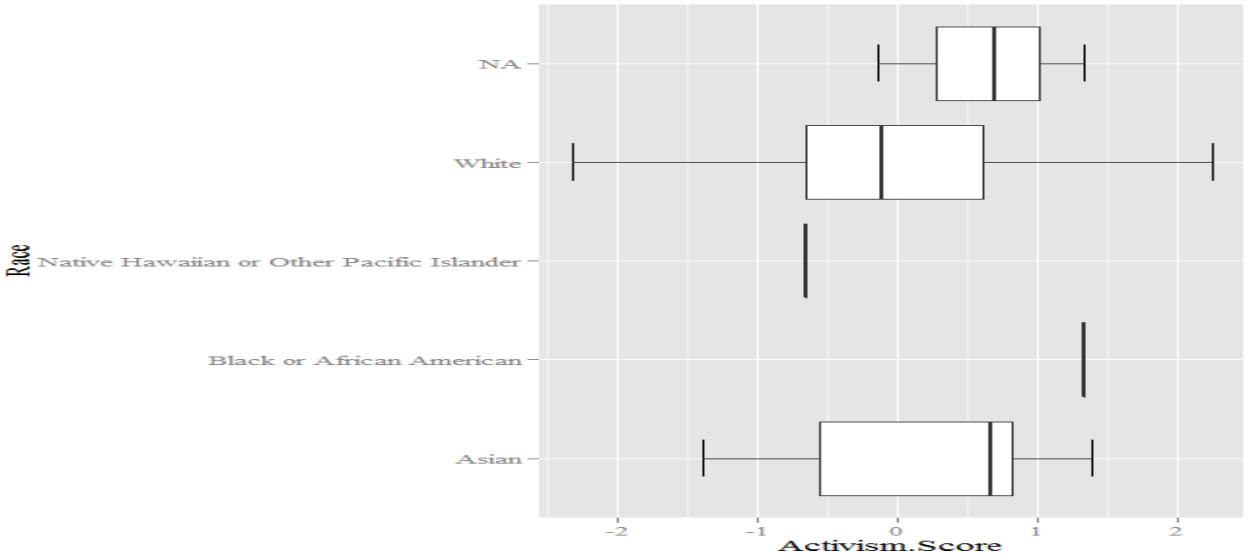


Figure 27

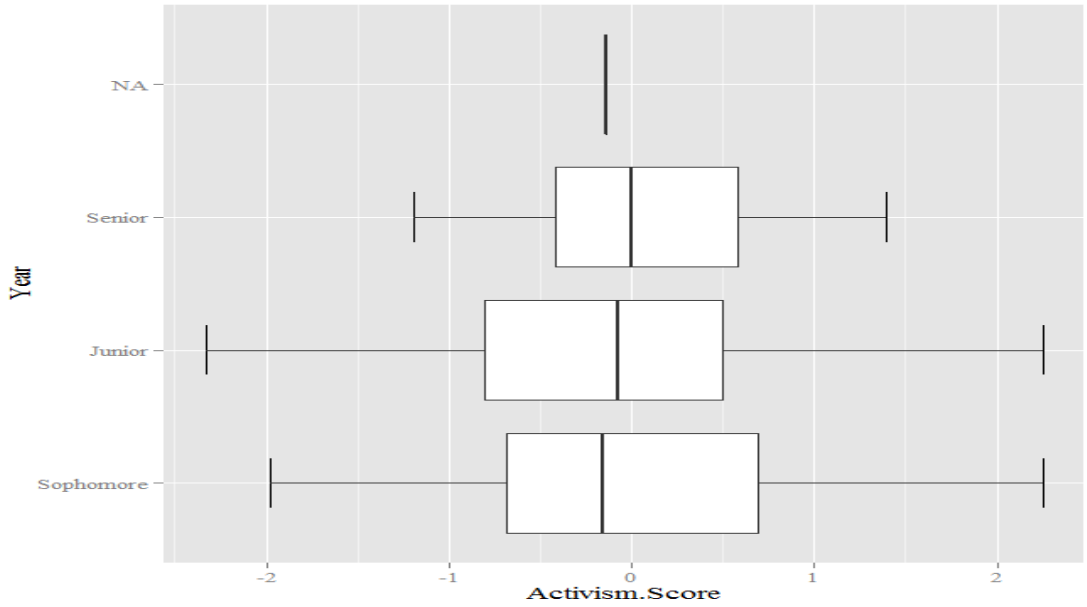


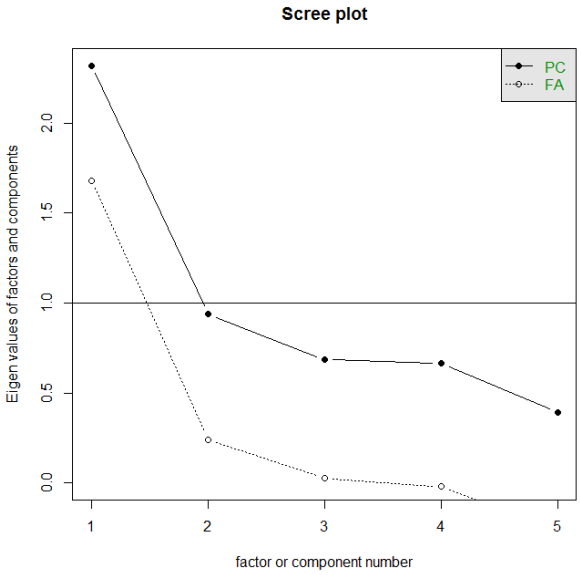
Table 20

Activism Scores								
Gender	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	Power
Male	-0.55916	-0.88006	1.21235	12	**p Value**	**p Value**	0.6072783	0.537
Female	0.07609	-0.00396	0.847758	93	0.103	0.0712		
Hisp/Not	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Hispanic	0.339638	0.691818	0.92597	15	p Value	p Value	0.4287778	NA
Non	-0.05253	-0.13259	0.90314	90	0.144	0.0458		
Rural/Urb	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Rural	-0.03679	-0.13259	0.93676	62	p Value	p Value	0.1449354	0.098
Urban	0.094095	0.080126	0.868	42	0.467	0.419		
Age	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
20-29	0.01168	-0.15773	0.97124	67	p Value	p Value		
30-39	0.055778	0.08013	0.72406	29	0.767	0.7933		
40-49	-0.22595	-0.19322	1.06544	9				
Year	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
Sophmore	0.033776	-0.1577	0.9598	44	p Value	p Value		
Junior	-0.10617	-0.07546	1.034186	30	0.749	0.8		
Senior	0.066634	-0.00396	0.71694	31				

Factor 3: Trust

Goodness of fit using 99 iterations at $p = 0.131$ is sufficient though not suggestive of a strong indicator in regard to fit for the items in this factor for measuring a single latent trait. Repeated bootstrap samples yield *p* values between 0.06 and 0.14, indicating the model of a univocal scale by this factor is reasonable, though not strong. The scree plot (Figure 28) demonstrates weakness in terms of suggesting that a single factor is being analyzed, 2.5 to 1 ratio of eigenvalues, though the correlations suggest measurement of a single trait.

Figure 28



Goodness of fit, using 99 iterations result in $p = 0.131$. This is an adequate p-value indicating fit. Repeated bootstrap samples yield p-values between 0.06 and 0.14 suggesting that the model of a univocal scale by this factor is reasonable though not strong. Figures 29-34 illustrate the boxplot presentation of the measurement of the latent trait, trust, by demographic strata. Table 21 presents the statistical significance of the trust score per demographic strata essentially demonstrating no significant differences in the trust score for any strata measured.

Figure 29

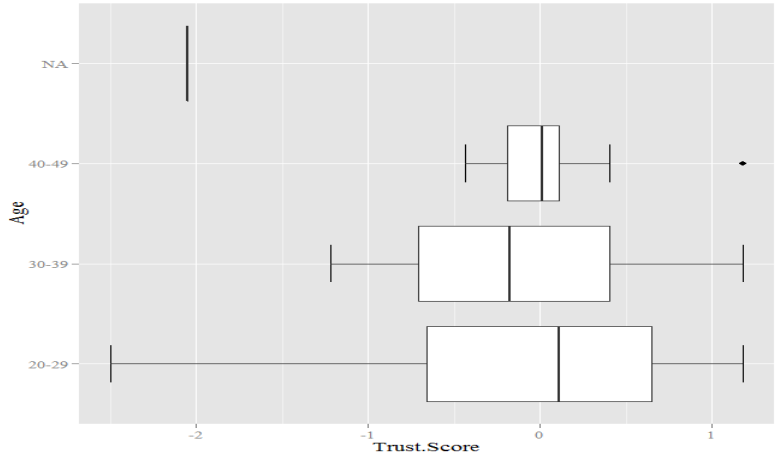


Figure 30

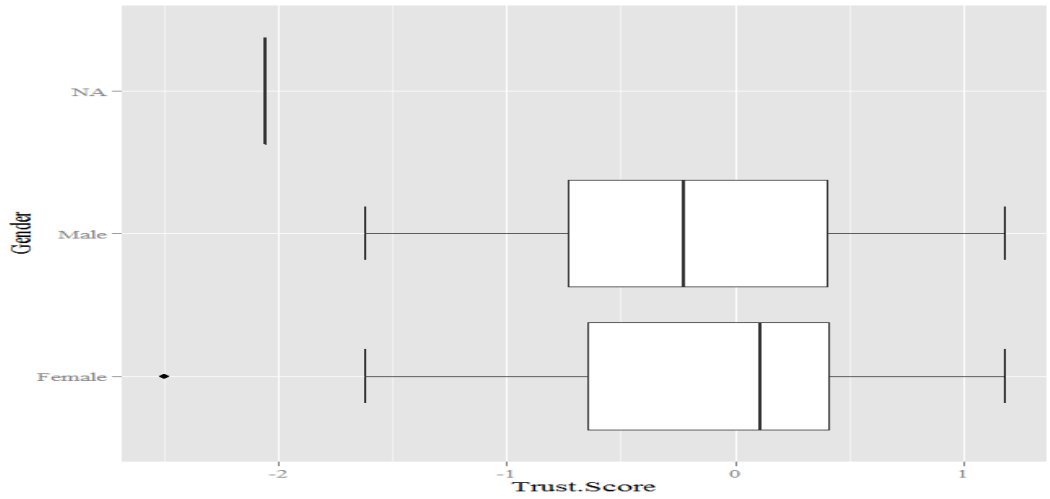


Figure 31

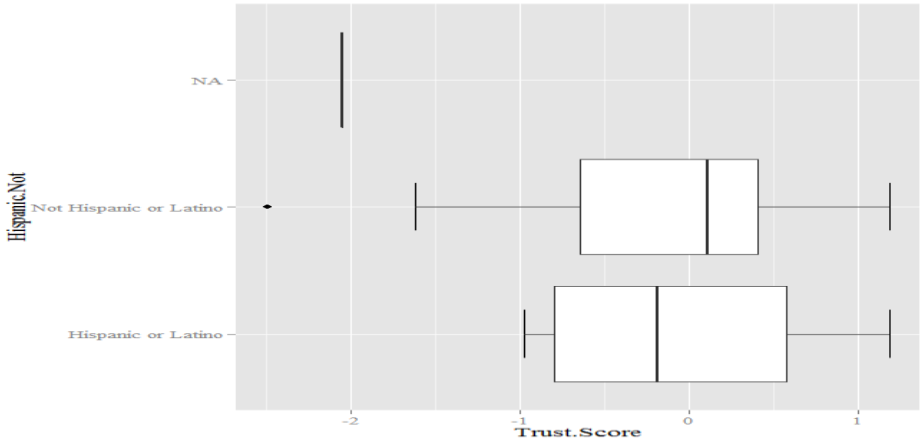


Figure 32

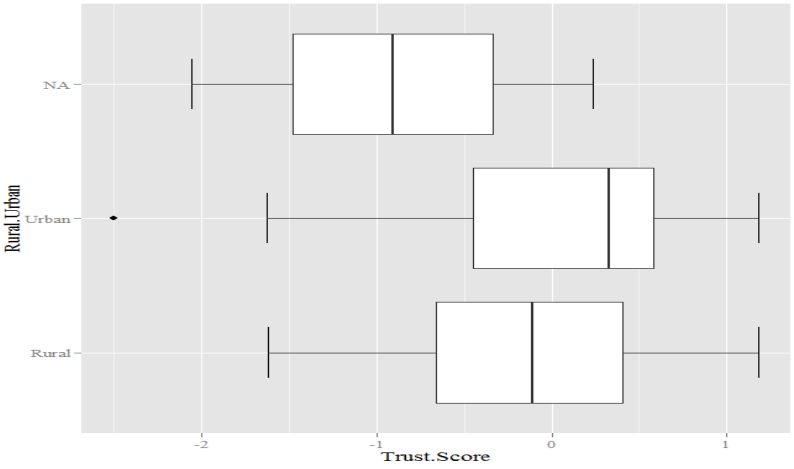


Figure 33

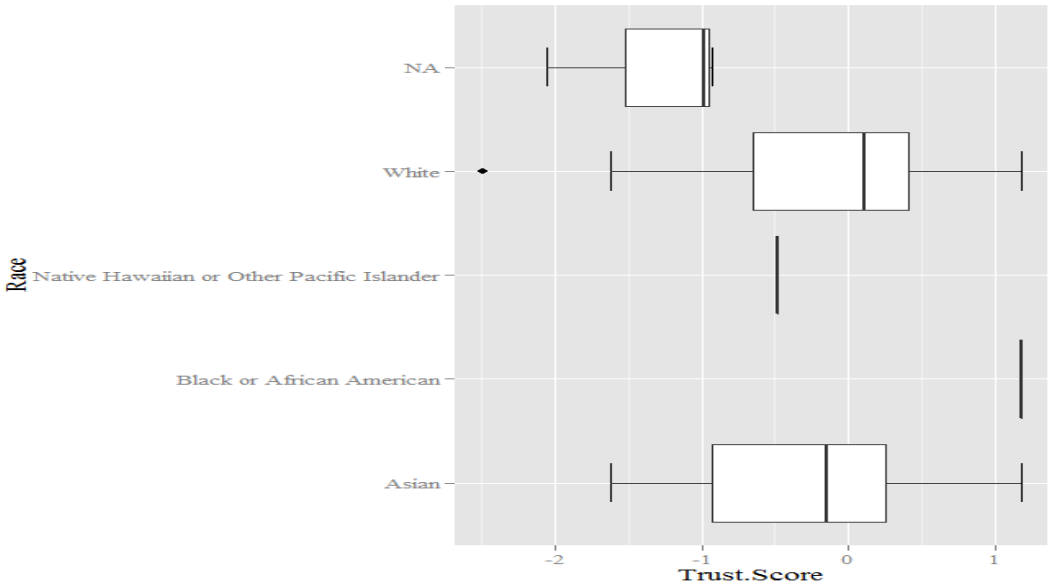


Figure 34

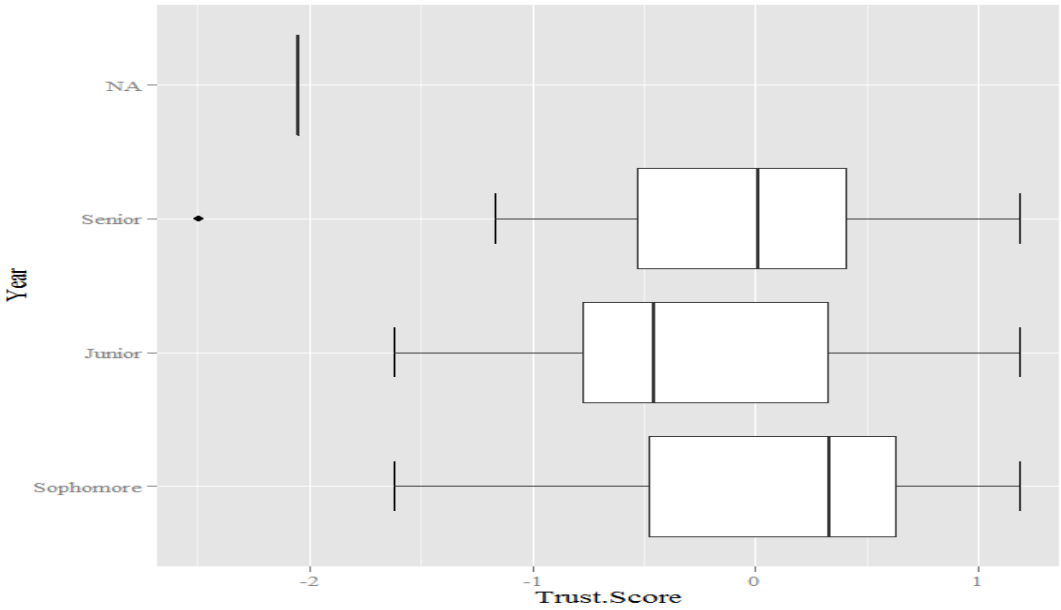


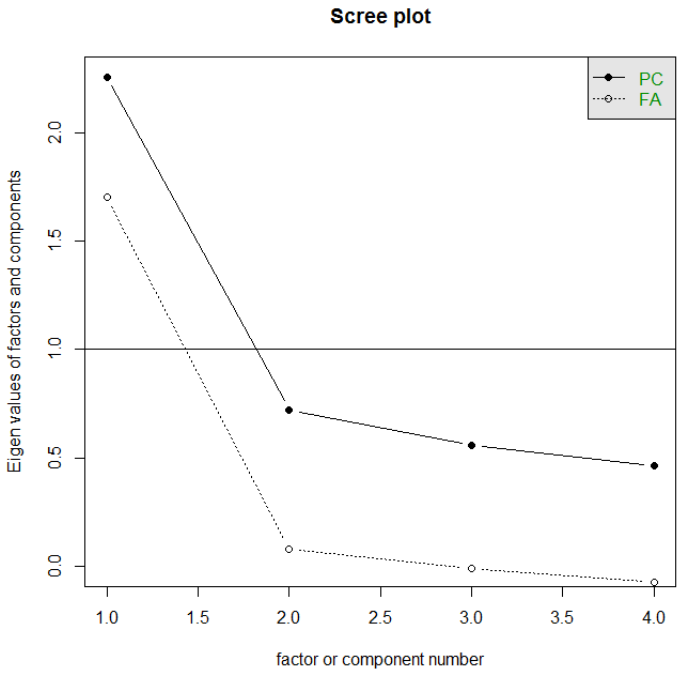
Table 21

Trust Scores								
Gender	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Male	-0.15388	-0.225	0.835	12	**p Value**	**p Value**	0.1612238	
Female	-0.0245	0.1077	0.7686	93	0.619	0.515		
Hisp/Not	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Hispanic	-0.0764	-0.1871	0.7868	15	p Value	p Value	0.0554367	
Non	-0.0331	0.1077	0.7753	90	0.845	0.614		
Rural/Urb	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Rural	-0.0903	-0.11228	0.7211	62	p Value	p Value	0.1512493	
Urban	0.029395	0.32847	0.8559	42	0.459	0.254		
Age	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
20-29	-0.02226	0.107711	0.85089	67	p Value	p Value		
30-39	-0.11149	-0.17439	0.659128	29	0.59	0.788		
40-49	0.0662	0.015599	0.49629	9				
Year	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
Sophmore	0.11959	0.32847	0.718024	44	p Value	p Value		
Junior	-0.25656	-0.45449	0.80888	30	0.639	0.393		
Senior	-0.05463	0.015599	0.785564	31				

Factor 4: Professionalism

Goodness of fit on 97 iterations yields $p = 0.309$ which indicates appropriate fit for the items in this factor for measuring a single latent trait. Additionally, the scree plot (Figure 35), as in the previous measured trait, demonstrates weakness in terms of suggesting that a single factor is being analyzed though the correlations indicate measurement of a single trait. In this factor there is one item with substantially lower information than the others in this model.

Figure 35



Figures 36 - 41 illustrate the boxplot presentation of the measurement of the latent trait, professionalism, by demographic strata. Table 22 presents the statistical significance of the professionalism score per demographic strata. There is no statistical significance among strata on the personal perceived importance of professional values on the latent trait professionalism.

Figure 36

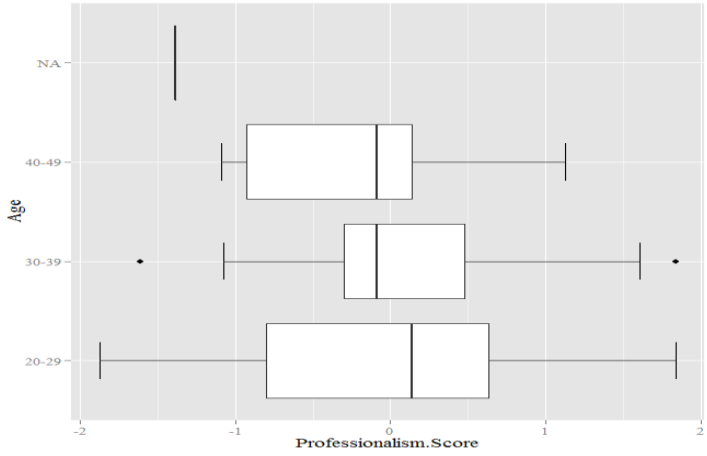


Figure 37

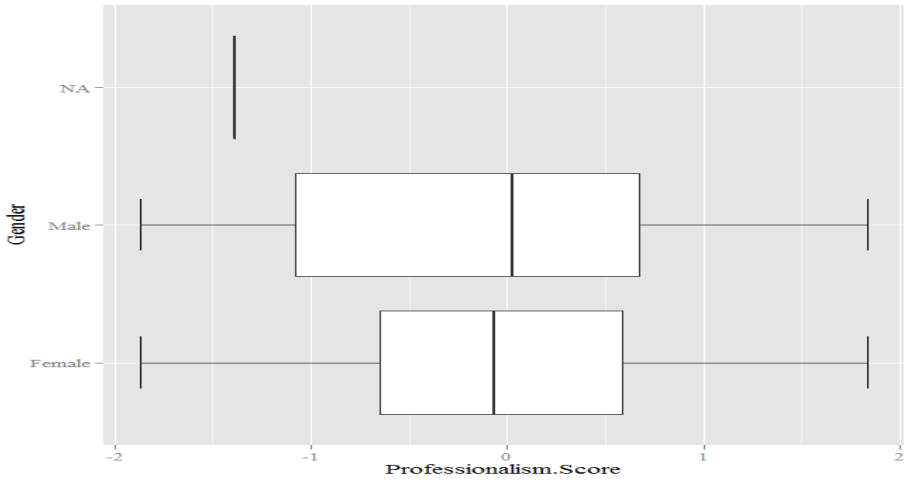


Figure 38

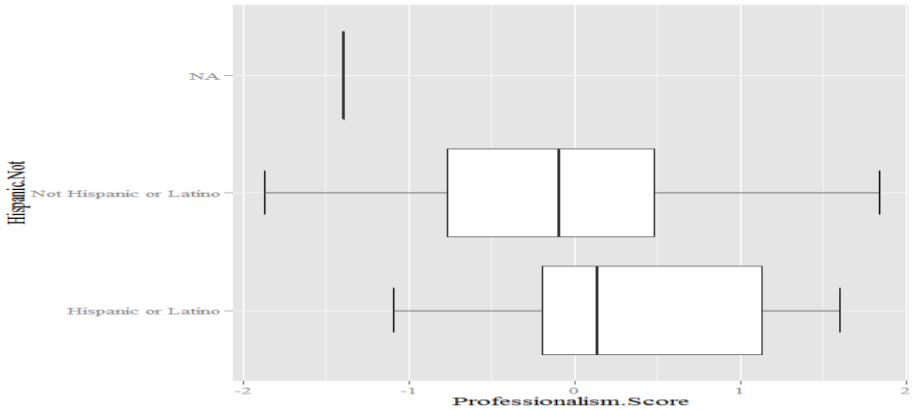


Figure 39

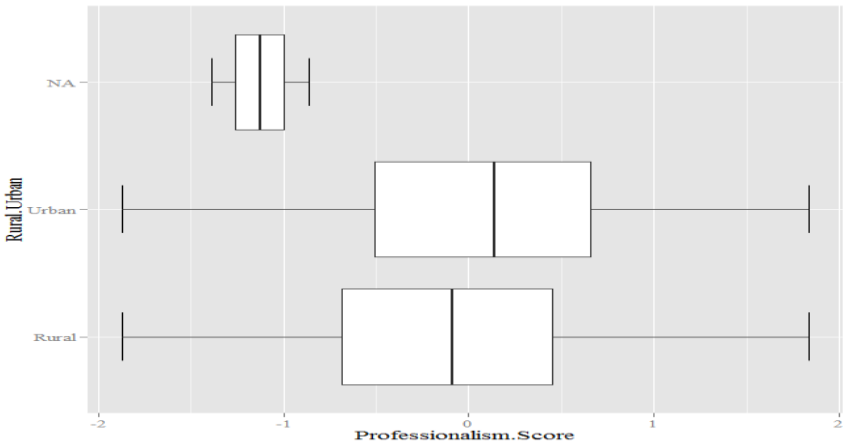


Figure 40

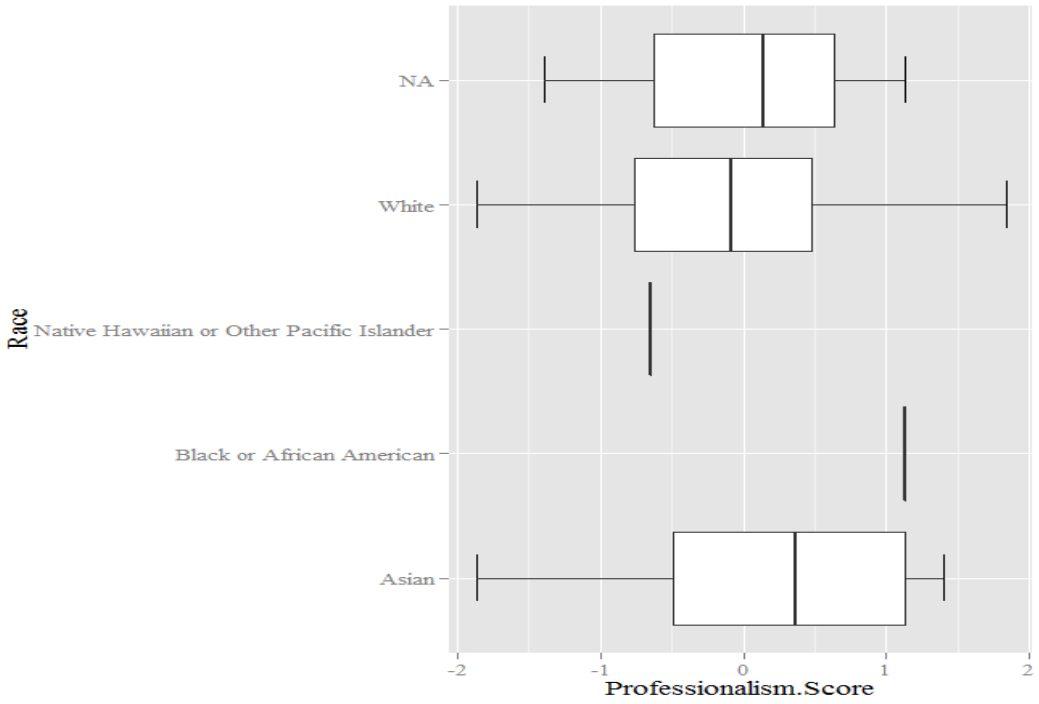


Figure 41

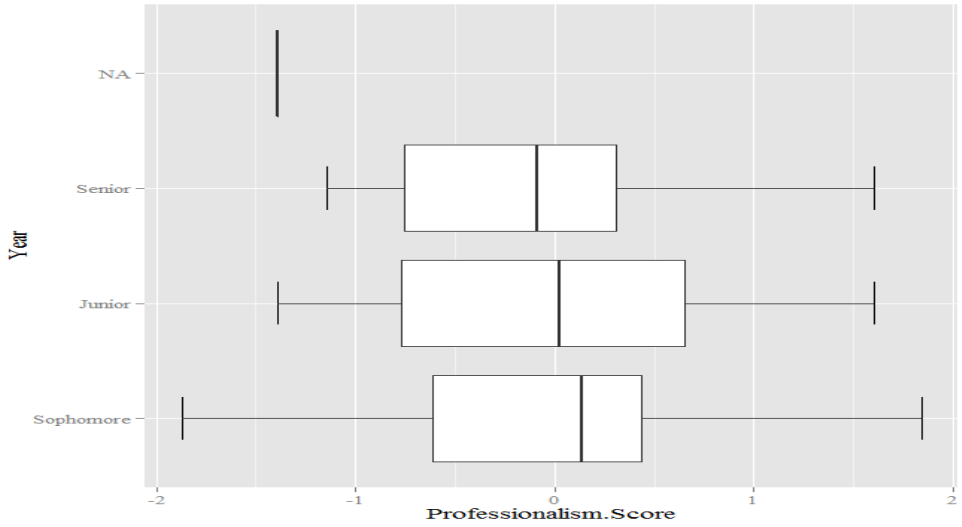


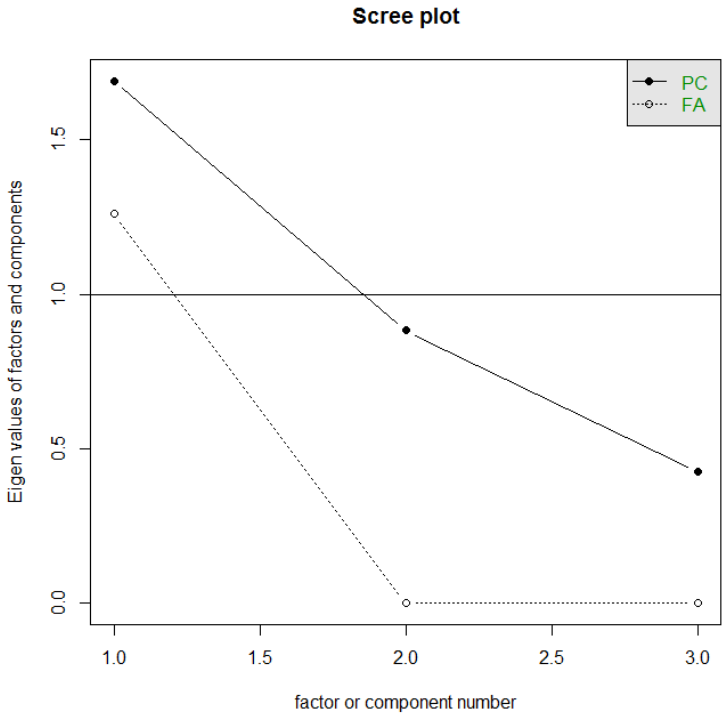
Table 22

Professionalism Scores								
Gender	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Male	-0.11477	0.025424	1.114759	12	**p Value**	**p Value**	0.1274219	
Female	0.01065	-0.06829	0.833645	93	0.713	0.646		
Hisp/Not	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Hispanic	0.35658	0.138388	0.885768	15	p Value	p Value	0.4837972	0.413
Non	-0.06373	-0.08754	0.851422	90	0.104	0.114		
Rural/Urb	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Rural	-0.03579	-0.08754	0.8375	62	p Value	p Value	0.1143331	
Urban	0.064223	0.138388	0.91048	42	0.572	0.489		
Age	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
20-29	0.005281	0.138388	0.92668	67	p Value	p Value		
30-39	0.014774	-0.08754	0.76191	29	0.879	0.872		
40-49	-0.12988	-0.08754	0.765171	9				
Year	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
Sophmore	0.00353	0.138388	0.91923	44	p Value	p Value		
Junior	0.037936	0.025424	0.91973	30	0.906	0.8841		
Senior	-0.05419	-0.08754	0.747763	31				

Factor 5: Justice

Goodness of fit indicator applying 91 data-sets yields a *p*-value of 0.011, demonstrating a poor fit. Consequently there is little support for the hypothesis that this model fits the data in representing a single latent construct. Additionally the scree plot (Figure 42), upholds the indication from the goodness of fit test, suggesting there is insufficient information to create a single trait. Also, question 3 (to protect health and safety of the public), lacks contribution to the model and questions13 (assume responsibility for meeting health needs of the culturally diverse population), dominates the results in this data set.

Figure 42



Figures 43-46 illustrate the boxplot presentation of the measurement of the latent trait, justice, by demographic strata. Table 23 presents the statistical significance of the justice score per demographic strata.

Figure 43

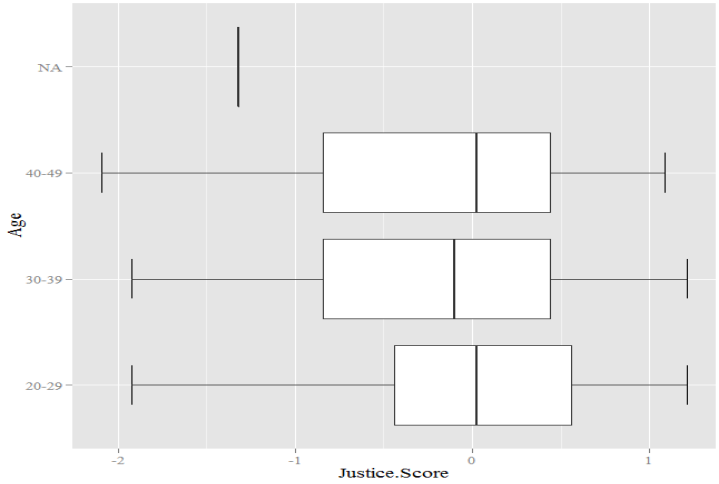


Figure 44

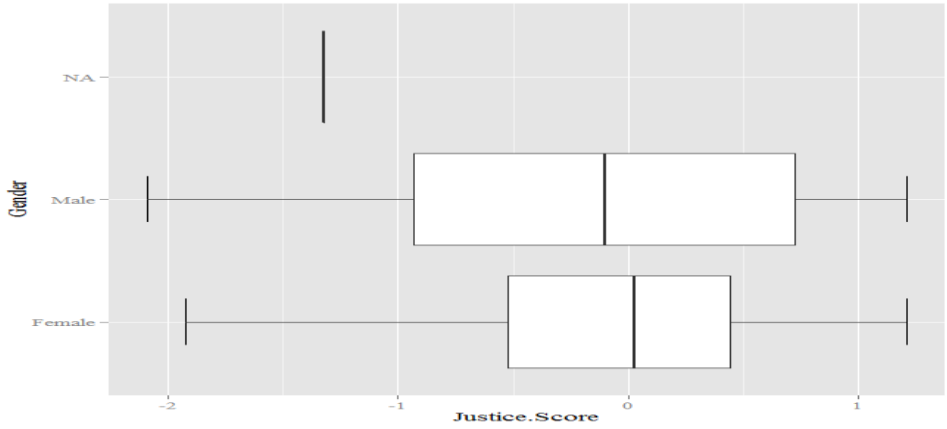


Figure 45

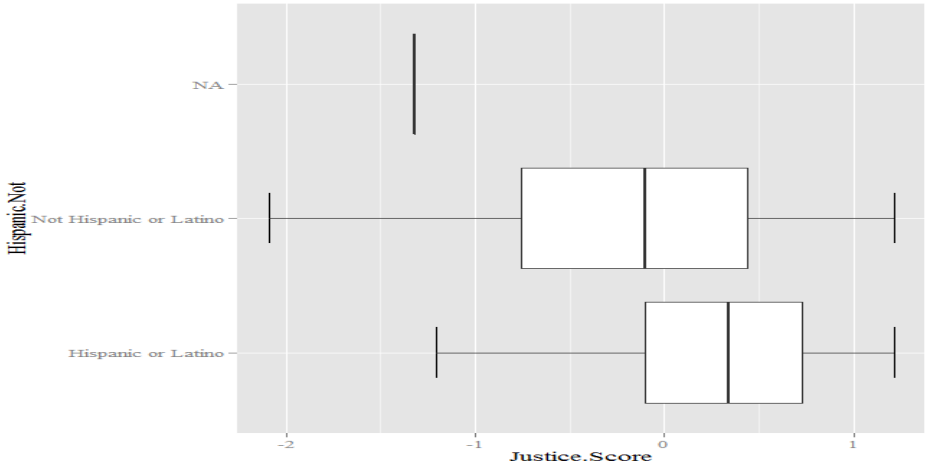


Figure 46

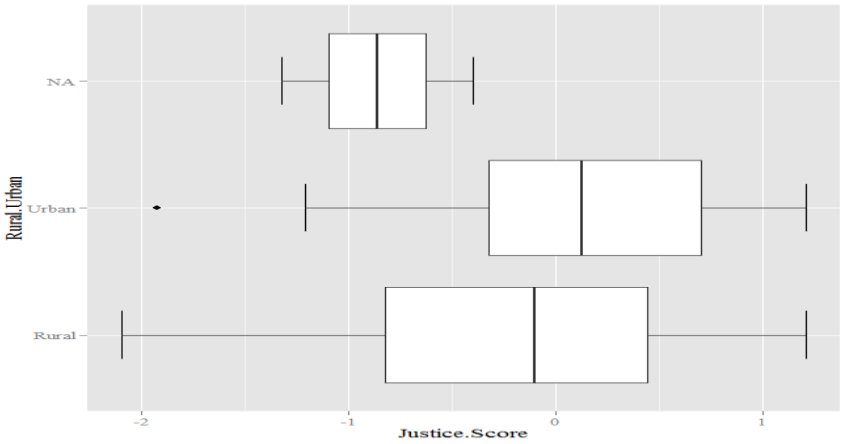


Figure 47

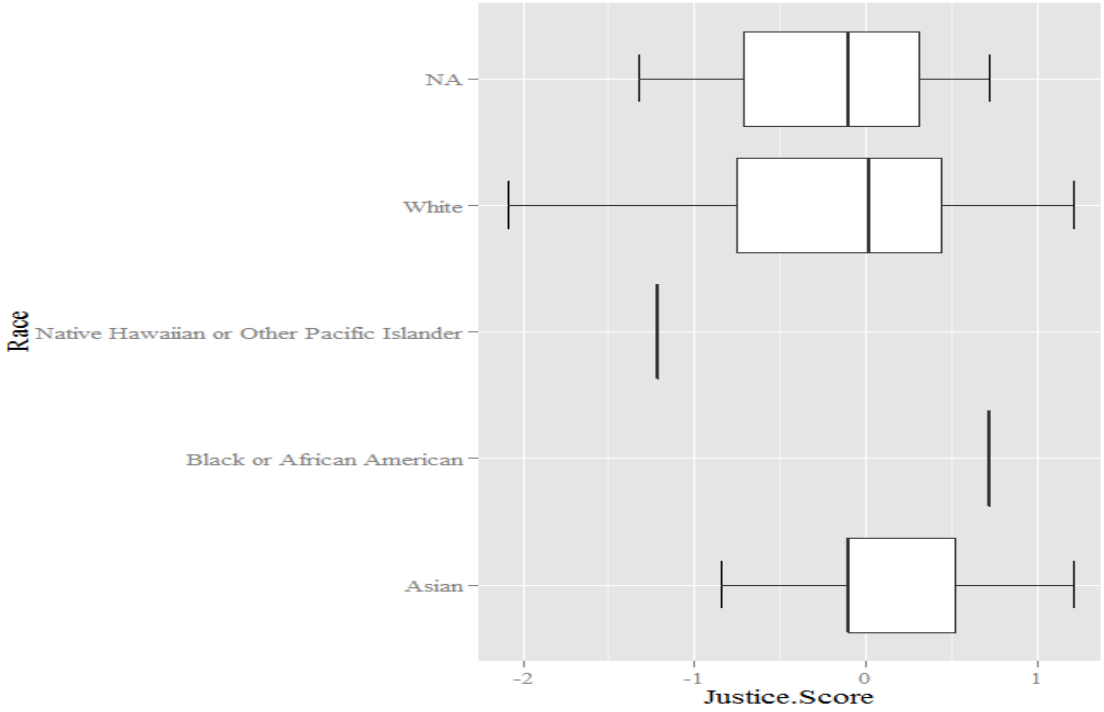


Figure 48

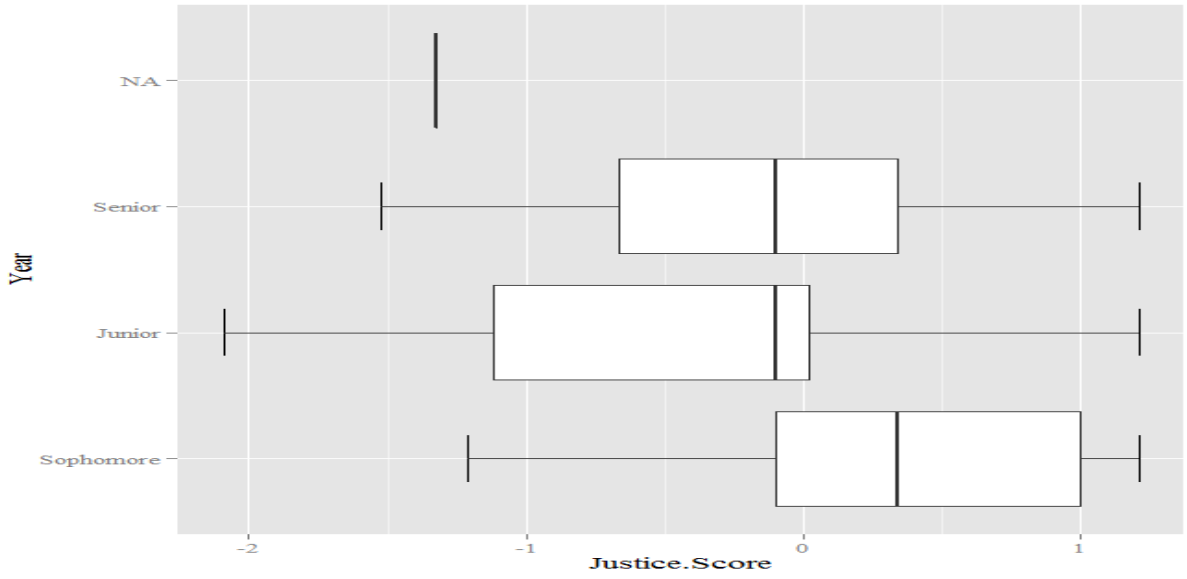
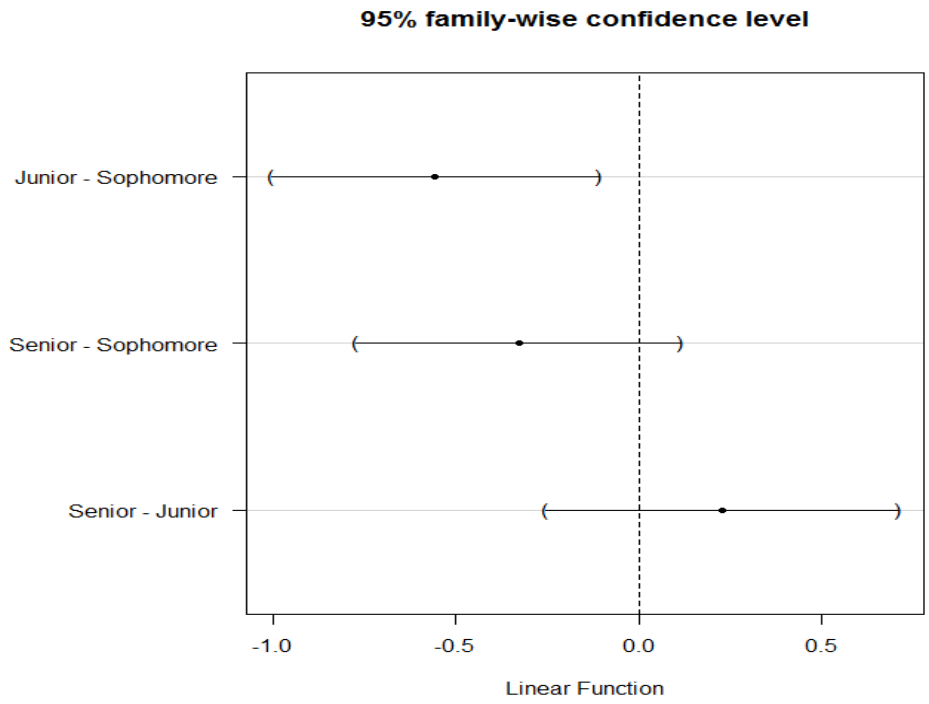


Table 23

Justice Scores								
Gender	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Male	-0.30011	-0.0981	1.09	12	**p Value**	**p Value**	0.3400969	
Female	0.022318	-0.098	0.7807	93	0.34	0.349		
Hisp/Not	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Hispanic	0.238	0.3418	0.7263	15	p Value	p Value	0.3769854	
Non	-0.0566	-0.098	0.83298	90	0.17	0.171		
Rural/Urb	**Mean**	**Median**	**Sd**	**N**	**T Test**	**Mann-Whitney**	**Effect Size**	**Power**
Rural	-0.0888	-0.09814	0.80677	62	p Value	p Value	0.2331438	
Urban	0.104144	0.127866	0.84787	42	0.249	0.156		
Age	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
20-29	0.0485	0.02364	0.7848	67	p Value	p Value		
30-39	-0.1106	-0.09813	0.8744	29	0.62	0.634		
40-49	-0.17422	0.02364	0.96335	9				
Year	**Mean**	**Median**	**Sd**	**N**	**ANOVA**	**Kruskal Wallis**		
Sophmore	0.24132	0.3418	0.751145	44	p Value	p Value		
Junior	-0.315	-0.09813	0.948227	30	0.0211	0.018		
Senior	-0.08688	-0.09814	0.687218	31				

The ANOVA, testing year in school against scores on justice is statistically significant when using both parametric and non-parametric analysis. For this problem, parametric ANOVA is indicated. A post-hoc analysis to test the results applying Tukey contrasts was conducted. The results presented in Figure 49 and Table 24 demonstrate that the difference in scores between sophomores and juniors is statistically significant with the sophomores scoring higher on average on this construct, indicating sophomores place a greater importance on the professional value of justice.

Figure 49



Comparisons of Means: Tukey Contrasts
Fit: (formula = Justice.Score ~ Year, data = Survey)
Linear Hypotheses:

	Estimate	Std. Error	t value	Pr (>|t|)	
Junior - Sophomore == 0	-0.5563	0.1883	-2.955	0.0107	*
Senior - Sophomore == 0	-0.3282	0.1865	-1.760	0.1880	
Senior - Junior == 0	0.2281	0.2037	1.120	0.5034	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

Table 24
Linear Hypotheses: 95% confidence Intervals

	Estimate	Lower	Upper
Junior - Sophomore	0 -0.5563	-1.0039	0.1088
Senior - Sophomore	0 -0.3282	-0.7714	0.1150
Senior - Junior	0 -0.2281	-0.2559	0.7122

Section 4: Summary of Quantitative Results

An in-depth review of the NPVS-R instrument illuminated several difficulties contributing to the complexity of the analysis for this study. Proposed to quantify personal perceived importance of nursing professional values, the NPVS-R was intended to be a summative measurement of univocal traits. The statistical work presented in the original paper (Weis & Schank, 2009) was based on factor analysis and is mathematically incongruent with the properties implied in this instrument. The responses on the scale are measured according to Likert-item scoring and are ordered, but non-metric indicating summative scoring is not mathematically appropriate.

Another difficulty presented as a result of the initial study (Weis & Schank, 2009), was the application of a varimax rotation within the original analysis. Varimax rotation suggests univocal correlation of traits which possibly is not the preferred method, considering what the identified factors are measuring. To validate the hypothesized structure a CFA was applied in addition to an alternative methodology, bifactor analysis.

Selection of a model appropriate for analyzing the survey results was impacted by the choice of low/no responses at low values on the item scale, thus rendering the ideal methodology GRM, inappropriate resulting in the decision to apply the GPCM. Though the assumptions are weaker, the GPCM allowed for assigning individual scores of the latent traits and assess for discrimination of the item towards the total measure of the latent trait (Muraki,1992). This was a divergence from the original intent of the instrument but allowed for valid statistical results.

A numeric itemization of the survey questionnaire demonstrated many of the items were truncated and none of the items were at a mean of 2.5 which is expected for

normal distribution. The relationship between the different item responses illustrated in a correlation matrix and scree plot, indicated strong association between some of the items, yet also supported that the univocal assumption was not likely. A Cronbachs alpha for the instrument indicated excellent internal consistency but did not imply the instrument was univocal.

Lastly, item characteristics were analyzed applying item information curves revealing the weakness of this instrument for distinguishing latent traits at the higher end of the scale. Few items on the instrument stood out as strong indicators for measuring the latent traits; however, 4 of the items contributed a major portion of the measurement of the individual's latent ability.

A goodness of fit was performed to evaluate whether this model was suited for the current data. When applied, a *p*-value of 0.02 indicated a poor fit. Primarily two possible violation of assumptions occurred in this test. The first possibility was the failure of local independence or failure of responses to be uncorrelated after controlling for the latent trait. This suggests that multiple latent traits are measured by the item rather than a univocal trait. The second possibility was that different strata within the population performed differently on the items, thus disallowing the item response function to be applied to all members of the population.

The results of this analysis are perhaps the most interesting results in this section of this study. An aim of this study was to verify if differences in latent traits occurred among possible strata. Analysis of the correlation between strata, to each factor and item exposed similar abilities in latent traits and similar response distributions on every question. This is suggestive of the latter of the two possibilities for the failure of the

goodness of fit, was not likely the violation of assumption. Eliminating the differences in latent abilities among strata as a possible violation of assumption conveys strong indication that the instrument is not univocal.

Results of ability or latent trait scores were impacted by an outlier scoring 5, or most important, on all 26 characteristics of the instrument. Though ability scores on most of the traits measured did not vary per strata, caring, activism, and justice did present with some moderate to strong statistically significant findings.

Evidence of statistical significance in the caring factor based on gender scores suggests males have a lower personal perceived importance of professional values in this trait as compared to females. Scores measuring the latent trait activism, indicate a stronger personal perceived importance of professional values among Hispanic/Latino compared to Non-Hispanic/non-Latino participants. Justice scores were statistically significant comparing sophomores (first year) to junior (second year), and senior (third year) students. Most significant was the score comparison between sophomore and junior students indicating sophomores place a higher importance on the professional value, justice.

Section 5: Analysis of Single Open-Ended Question

Factors that foster the adoption or internalization of nursing professional values were examined in the current study through inclusion of an open-ended question on the survey questionnaire. The question, “What factors influenced the adoption of your nursing professional values?” was listed as item #27 with a text box for recording open-ended responses. Sixty eight (64%), of the 106 participants responded to the open-ended

question. The responses were analyzed by the researcher through a process of categorizing patterns by taking frequency counts of like and similar answers.

The participant responses contributed to the categorization of nine categories representing the factors influencing adoption of nursing professional values and include the categories of: a) experience, b) observation of others, c) caring, d) faith/religion, e) ethics, f) education, g) patient characteristics, h) professional role identity, and k) regulation/law. From these nine categories, several sub categories were created for each with the exception of regulation/law, which only elicited one response, faith/religion, which had multiple responses all around a central theme, and patient characteristics, which also had several responses around a central theme.

Experience was further categorized into four sub categories: 1) health care, 2) patient, 3) life, and 4) student. Observation was further categorized into four sub categories: 1) other health care professionals, 2) family and friends, 3) nursing instructors, and 4) role models. Caring was further categorized into two sub categories: 1) personal, and 2) professional. Ethics was further categorized into two sub categories: 1) personal, and 2) bioethics. Education was further categorized into six sub categories: 1) instructors, 2) activities and discussions, 3) clinical experience and preceptors, 4) peers, 5) evidence-based literature, and 6) the process of learning. Professional role identity was further categorized into two sub categories: 1) desire to be ethical, and 2) desire to be competent.

Of the nine categories, two broad categories represented the most frequency counts within this studies sample. With thirty unique responses in the category of experience, and twenty nine unique responses in the category of ethics, the participants

suggest factors influencing their adoption of professional values include occurrences separate from that experienced in the formal educational process of becoming a nurse. Reported with frequency in the category of experience, was the sub-category, experience in health care. Participant's responses in this sub category include:

> *My own experiences working as a CNA for fourteen years have helped shape my professional nursing values*
>
> *.....working in home health, the vulnerability that is felt*
>
> *Personal experience, and previous experience working in the healthcare setting…. seeing and knowing what is most important from the patients view*

Additionally, past experience of being a patient was considered to be an important factor contributing to the adoption of professional values in this sample. Participants included responses such as:

> *Being a patient myself, using empathy to understand that a patient may be having the worst day of their life and wanting to treat them as I would like to be treated*
>
> *As a patient receiving care, it's very easy to see the importance of these values. I hope that any health care professional working with me would treat me with the same respect and compassion*

Also one participant referred to life experience in general as a factor for fostering the adoption of professional values stating:

> *Seeing the good and the bad have shaped the values I have for the nursing profession*

The category of ethics with sub categories of personal ethics and bioethics included participant responses suggesting strength in this factor for contributing to the adoption of professional values. Respondents emphasized the influence of ethics prior to entering nursing school for their adoption of professional values stating:

...values were important to me before I came to nursing school like integrity, accountability, and respect of autonomy and individuality

Morals and ethics learned in childhood

Being Hispanic and having all same traditional values has influenced my values greatly

Personal values, I look at what I would want for myself

...always somewhat had some of these values

Other participants contributed their adoption of professional values to the influence of the values included in bioethics. Particularly attributing this development to what is professionally expected, one participant stated:

....Advocating for the patient, first and foremost, protecting their rights and their dignity, making sure everyone gets equal care at the best level

The third most frequently reported category was education with sub categories of, instructors, activities and discussions, clinical experience and preceptors, peers, evidence-based literature, and the process of learning. The comments in the sub category, activities and discussions, contained responses indicating certain factors in their formal education contributed to the adoption of professional values. Responses include:

...excellent discussion in class and hearing voices of others

Classroom exercises and activities as well as clinical experiences in the last year all influenced the development of values

Class discussions about ethics and nursing values

Opportunities to speak with nurse educators, professional practice leaders, and nurse managers

...reflections and discussions regarding professional nursing values

Additional responses attributing education as a factor for fostering the adoption of professional values indicate evidence-based literature and theory to be important. Responses include:

…. exposure to the field of health care through nursing school

ANA code of ethics and our nursing course work on concepts of practice

Theory and clinical component of nursing courses
….nursing course work on concepts of practice and *Evidence-based literature*

Though other categories did not have the volume of responses as the aforementioned categories, they are important to the aim of this study and are presented in Table 25 along with additional responses from the previously discussed categories. Closely aligned with the factors measured by the NPVS-R, caring and identification with the professional role of the nurse emerged as important factors for fostering the adoption of nursing professional values. One respondent emphasized a desire to assume the caring role, stating, "…*Wanting to treat people how they should be treated and help them have higher quality of life".* Another respondent emphasizes the importance of professionalism or role identity by stating, *"Factors that influence my marks include my worldview and subsequent philosophy, and my view on "being a nurse"--identity of "a nurse" VS "a person who is a nurse."*

Table 25

Verbatim Quotes answering the open-ended question, "What factors influenced the adoption of your nursing professional values?"	
Experience:	*"My own experiences working as a CNA for fourteen years have help shape my professional nursing values. I have observed successful nursing practices and examples of inappropriate patient care that I have learned from".* *"My experiences with being a patient and working in home health…"* *"We have had many reflections and discussions regarding professional nursing values. I have been consistently encouraged to adopt and reflect on my professional nursing values and what that looks like in practice".*

Observation	*"I have observed successful nursing practices and examples of inappropriate patient care that I have learned from".* "*Seeing how nursing values are incorporated in to every day nursing is really helpful for me to learn how to incorporate those things".*
Caring	*"…caring deeply for all individuals".* *"…Desire to provide optimal patient-centered care".* *"Wanting to educate and support those in need. Wanting to advocate for the underrepresented and underserved. Wanting to do better. Wanting to treat people how they should be treated and help them have higher quality of life".*
Faith	"*…attending church"* *"My Christian values are the greatest factors that influence the adoption of my professional nursing values"*
Ethics	*"I have a strong sense of personal values which greatly influence every aspect of my life, but this is especially true for when I'm in the healthcare setting because I believe that by upholding my personal values, I am better able to care for my patients and make a positive difference in their lives".* *"My personal background growing up".* *"…personal values translated into nursing practice".* *"Every day and every interaction, I try to demonstrate these".*
Education	*"As I've progressed through nursing school, I have come to feel stronger about these values".* *"…nursing school and cohort".* *"Good preceptors".*
Patient Characteristics	*"Factors that influenced my professional nursing values have been cultural, preference, and personality differences in patients".* *"The patients I've worked with … have been the most influential in the development and adoption of my nursing values".*
Role Identity	*"Factors that influence my marks include my worldview and subsequent philosophy, and my view on "being a nurse"--identity of "a nurse" VS "a person who is a nurse."* *"The desire to be the most efficient, understanding and educated on up to date procedural policies RN I can be, in order to properly care for my patients".* *"Being a competent nurse".*
Regulatory	*"Current law".*

Further exploration of the participant responses included correlating the response to year in school to see if there was an appreciable difference in categories of responses between sophomore, junior, and senior level nursing students. Though this was not

specifically identified as an aim for this research question, it is relevant to the first research aim of this study. The open-ended responses were evenly distributed among the levels of students represented, with 25 sophomore students responding, 22 junior students responding, and 21 senior students responding. Consistent with the findings from the quantitative analysis, response themes had little variation among participants based on year in school.

Section 6: Summary of the Open-Ended Question Results

Nine categories emerged from the responses to the single open-ended question, "What factors influenced the adoption of your nursing professional values?" Of these categories, responses crediting previous experience, personal values and ethics, and formal education constituted the majority of the answers. In reviewing the responses by year in school, answers per level were evenly distributed and variation in theme was undetectable.

Interestingly the factor receiving the most credit for aiding in the adoption of professional values was experience. Attributing past experience as either a patient or provider of health care for fostering the development of professional values, the participants described many personal examples. The participants contributed several accounts of having previously adopted personal values prior to entering nursing school and attributed this factor to be influential for their adoption of professional values. Though education had the third highest number of responses, the number of sub-categories abates the strength of any one given factor. The sub-category, activities and discussions, rendered the most responses.

Identifying with the professional role of the nurse seemed to be an important factor contributing to the adoption of professional values. Participant responses included several statements about the ethical code for nurses. The category of caring, interestingly had a number of responses that voiced a deep sense of altruistic principles, and responses attributing adoption of professional values to characteristics of patients, and supported a sense of justice. Though religion or spiritual beliefs were captured in a few responses, factors in this category accounted for only a small number of answers.

Overall, the responses to the open-ended question indicate there are many contributing factors occurring prior to entry into a professional program that influence the adoption of professional values.

CHAPTER V: Discussion

The purpose of this study was to measure the internalization of nursing professional values of baccalaureate nursing students in the first, second, and third year of their educational program and investigate the factors that fostered the development of these values. An exhaustive review of the literature on professionalism and nursing professional values indicated a gap in research, thus indicating this study appropriate. Beginning with a historical review of the literature on professionalism, the concept was traced from medieval guilds to the current era. Professionalism was described in detail to include the expectation of dress, conduct, knowledge, relationships, and evidence of values in individuals ascribing to a profession. Of these characteristics of professionalism, the research and relevant literature on nursing professional values were explored in depth as this was the foci of this study.

This discussion begins with reviewing the sample and generalizability of the study. Additionally included in the discussion is an interpretation of the major findings and their relevance to the theoretical framework and previous studies. Implications for nursing education, and limitations, including the challenges that arose from using the NPVS-R as a psychometric instrument will also be discussed.

Sample and Generalizability

A total of 407 baccalaureate nursing students from a single university with multiple campus sites were contacted to participate in this study. Of those contacted 26% (n = 106) participated. The sample for this study included 44 sophomore, or first year students, 30 junior, or second year students, and 31 senior, or third year students enrolled in the baccalaureate nursing program. One of the 106 participants did not declare, year in

school. Of the 105 participants declaring year in school, 42% were sophomores. All students received the survey in the same manner though certain faculty members additionally encouraged their students to participate by sending out email prompts or mentioning the opportunity in class. This could explain why there were a greater number of participants from one grade level as compared to others.

The NPVS-R was administered to measure the perceived importance of nursing professional values among the participants and an open-ended question was included to investigate the factors contributing to the adoption or internalization of these values. Originally the open-ended question was developed using the term, internalization rather than adoption. Prior to implementing the survey, the researcher tested the question with a small group of sophomore students to see if the term, internalization was understood. The students suggested alternative words and agreed the term, adoption, conveyed the essence of the question better.

The primary aim was to measure the difference in scores on the NPVS-R between sophomore, junior, and senior nursing students though additional stratification by demographics was also of interest. Participants were mostly female (88%), and white (88%) which is consistent with current nursing workforce data (HRSA, 2013). Also of interest, in contrast to the current nursing workforce and education data, 63% of the participants were in the age range of 20-29 and 60% identified as being from a rural community whereas in the United States, a larger percentage of nurses live in urban communities with the highest percentage of registered nurses between 51-55 years of age (HRSA, 2013).

Outcome Variables

The NPVS-R, a 26 item Likert-type scale instrument was selected for this study. The instrument was originally developed to measure personal perceived importance of values among the nursing profession. With a 1-5 scale, 1 being least important and 5, being most important, possible total scores range from 26 - 130. In the current study, mean scores were not evenly distributed and did not represent a normal curve. Participants overall, reported a mean between 3.3 and 4.6 on all items.

Analysis of scores by strata resulted in no significant differences when compared by age ($p = 0.416$), rural vs. urban ($p = 0.677$), or by year-in-school ($p = 0.359$) which is consistent with the studies conducted by Fisher (2014), LeDuc & Kotzer (2009), and Iacobucci, et al. (2013). In analysis of the overall scores by gender, there is marginally insufficient evidence to support males have different ability scores than females; however, an observed difference (Cohen's D = 0.39) and pooled variance (d = 0.73), along with consideration of the outlier, it is suggested that with a larger sample size there is a moderate probability a difference would have been detected.

There is insufficient evidence to suggest a difference in ability scores of Latino/Hispanic compared to non-Latino/Hispanic. Applying a difference of means due to an outlier; however, there is a moderate probability that a difference would have been detected if one existed, indicating additional research is recommended to see if a difference actually exists. Comparison by race was impacted due to the limitations of the small sample sizes thus prohibiting the application of any test for detecting statistical differences. The score comparisons of participants stratified by year-in-school indicate insufficient evidence ($p = 0.31$) of a difference between any combination of these groups

which is consistent with the study conducted by Leduc and Kotzer (2009). This is somewhat contrary to a studies conducted by Fisher (2014) indicating a statistical significance in the importance of professional values among students in varying types of nursing education programs, and Kubsch et al. (2008), and Rassin (2008), indicating level of education significantly increased the score on several professional value factors. Data from prior research studies indicate education positively influences the adoption of professional values yet is not an exclusive contributing factor.

When the data were analyzed by factor, the caring score presented as statistically significant by gender. Males on average scored lower than females, reporting a *p*-value of 0.0269 and an effect size of 0.78. The caring score when analyzed on all other strata reported no statistical significance. These results are consistent with a previous study using the NPVS, whereas males scored lower on average than females on all factors (Martin et al., 2003).

A statistically significant finding was reported ($p = 0.045$) on the activism factor compared by strata, suggesting Hispanic/Latino participants scored higher as compared to non-Hispanic/Latino participants; however, an outlier confounds the reliability of the data. These data cannot be correlated to the study by Martin et al. (2003), primarily due to race and ethnicity being combined in the Martin et al. (2003) study.

There were no significant differences among strata on the trust score or professionalism score. Interestingly, a significant difference exists ($p = 0.021$) in the justice score when stratified by year-in-school, with sophomore students scoring higher on average compared to junior students. A contributing factor to the higher scores in

sophomore students could be due to exposure to content on social justice in the curriculum during the time this survey was administered.

Discussion of Findings Related to Theoretical Framework

Ryan and Deci (2000) theorize a psychological need exists for healthy human development that includes the need to feel and experience competence, the need for autonomy, and the need to experience a sense of relatedness. The researchers also propose two central concepts relative to self-determination, suggesting actions and behaviors are motivated by an autonomous or controlled distinction (Deci & Ryan, 2008). Underpinned by the theoretical framework of SDT, this study proposed a link exists, whereas, the internalization of professional values, resultant of intrinsic motivation, leads to self-determined functioning characterized through value-based behaviors and actions.

Study results indicate a high importance is placed on all factors measured by the NPVS-R for the baccalaureate nursing students in this study sample. Mean scores on the factors measured were reported between 3.3 and 4.6, out of a possible 5, on all characteristics. There were no scores of low/no importance, regardless of year in school or other demographic strata. This suggests the motivation to value certain ethos of the profession is important. It also suggests the internalization of professional values is not entirely dependent on the educational process or other demographic or environmental influences. This is consistent with the study by Leduc and Kotzer (2009) in which the measurements of each of the value factors were rated as important, very important, or most important by all participants. Additionally, this is consistent with the findings in the study by Lenners et al. (2005) suggesting an increase in value importance could be a result of varied experiences.

Characteristics representing caring, trust, activism, professionalism, and justice are closely linked to the concepts posited in SDT, supporting a correlation between intrinsic motivation and the desire to internalize the values of the profession. This is consistent with the findings in the Thorpe and Loo (2013) study suggesting that adoption of professional values is reflective of the need to develop as a person. Based on the overwhelming positive responses to the survey questions, the engendered ethos of the nursing profession are deemed important to the participants in this study.

This was further strengthened by the responses elicited from the open-ended question, "What factors influenced the adoption of your nursing professional values?" The responses were grouped into 9 major areas with the most responses in the categories of, experience, ethics, and education. These groupings of factors are consistent with findings from prior studies indicating the influence of experience, ethics and education are important contributors to the internalization of nursing professional values (Leners, et al., 2005; Morris & Faulk, 2007; Kubsch et al., 2008; Rassin, 2008; Ware, 2008; Fischer, 2014).

The category of experience was further reduced to four sub-categories, 1) health care, 2) patient, 3) life, and 4) student. Relating personal experience to the concept of caring for others, the participants attributed this occurrence as an important factor for fostering the development of professional values. This is suggestive of the personal satisfaction that comes from experiencing a sense of relatedness when caring for others. Implied in SDT, this sense of relatedness combine with autonomous motivation, allows for the alignment between ones' own personal values and those ascribed by the profession. A particularly poignant statement shared by one participant, "*Being a patient*

myself, using empathy to understand that a patient may be having the worst day of their life and wanting to treat them as I would like to be treated" exemplifies the innate needs for healthy human development, identified by Ryan and Deci (2000).

The responses categorized as personal ethics or bioethics, establish a link between the adoption of professional values and the self-determined need to experience autonomy. One participant attributes the role of advocate to influencing the adoption of professional values stating, "*....Advocating for the patient, first and foremost, protecting their rights and their dignity, making sure everyone gets equal care at the best level".* This response also indicates a connection to the desire to experience a sense of relatedness through the expression of the responsibility to ensure justice and patient autonomy.

The category of education consisted of several sub-categories including; instructors, activities and discussions, clinical experience and preceptors, peers, evidence-based literature, and the process of learning. The responses indicate a need exists to feel and experience a sense of competence in the professional nursing role and for the adoption of nursing professional values. Participant responses exemplifying this concept include; "*...excellent discussion in class and hearing voices of others", "As I've progressed through nursing school, I have come to feel stronger about these values" and, "Classroom exercises and activities as well as clinical experiences in the last year all influenced the development of values…".* Though the need to experience and feel competence in the nursing professional role is primarily derived from autonomous motivation, controlled motivation also augments the actions and behaviors representative of nursing professional values. Professional nursing regulatory bodies set standards and requirements for membership. Extrinsic by nature, controlled motivation does influence

the acceptance and internalization of the values held by the profession. Minimally represented in the data but explicitly stated, one participant attributes the adoption of professional values to be derived from extrinsic motives simply stating, *"Current law".*

Overall the responses to the open-ended question align with the concepts identified in SDT. The participants express events and circumstances contributing to their adoption of professional values. The responses contextually relate prior experiences with motivation to ascribe to, and act accordingly, typifying values-based actions and behaviors. Additionally, responses clearly indicate a sense of alignment between personal values with the values of the profession suggesting the motivation to adopt these values derive from a desire for autonomy.

Implications

The primary aims of this study were to measure the personal perceived importance of nursing professional values among baccalaureate nursing students and to investigate the factors fostering the internalization of these values. Detection of differences of scores on the NPVS-R between first, second, and third year nursing students was a key aim. Of interest, measurement of differences by additional strata; age, gender, race, ethnicity, and rural or urban identity were also considered valuable.

Study results indicate that on average, little to no differences exist among all strata measured by the NPVS-R in this study sample. The research outcomes are contrary to this studies hypothesis. … 'the internalization and demonstration of nursing professional values of baccalaureate nursing students increase between the first, second, and third year of baccalaureate nursing education'. This implies the restructuring or delivery of nursing education for influencing the internalization of professional nursing

values among students is not a chief priority. Though a portion of the open-ended responses indicate education as a factor for fostering the adoption of professional values, the lack of specificity in the respondent's answers did not support any one single aspect over another. However, there is indication that professional values are highly influenced by ones' own personal experiences and circumstances, values, ethics, and morals.

The study results suggest, nursing students professional values are formed out of previously adopted personal values, thus, identifying the existence of values-based behavior and actions prior to admittance to a nursing program is of high importance. This implies the development of an application process for nursing programs, inclusive of essay or interview questions designed to examine personal values based on past experiences is recommended. With indication that personal values and experiences influence the adoption of professional values, it is important to investigate if these values are congruent with those ascribed by the profession prior to admittance into a nursing program. Based on item selection and open-ended responses, it is also suggested that the internalization of professional nursing values is mostly intrinsically motivated. Evaluation items for the application process for entry into a nursing program should also include an assessment of contributing factors relevant to personal motivation.

Further study and exploration of the educational component for fostering the internalization of professional nursing values is indicated. Though education emerged as an important factor, the breadth, yet lack of depth, of participant responses reduced the opportunity for determining particularly strong areas for development. Inclusion of values-based education; however, should not be regarded as unimportant.

Limitations

This study has several limitations. The design of the study was limiting based on the self-reporting nature of the measurement instrument in that participant honesty, errors, and bias were not controlled for. A non-randomized, non-experimental descriptive design was used to measure the internalization of professional nursing values, thus relationships or causation was not detectable. The non-randomized sampling process may have resulted in enrolling study participants that were not representative of the general population of baccalaureate nursing students. Limiting the study sample to baccalaureate students in a single university with multiple campus sites also restricted the opportunity for generalizing the results. Additionally, the sample size and the deficiency of participants representing race other than white, gender other than female, and ethnicity, limited the detection of differences based on strata.

Contributing to the limitations of the study results, were the complications ensued with an in-depth analysis of the psychometric tool. Significant difficulties occurred from the statistical work presented in the original paper by Weiss and Schank, 2009. The instrument was stated to measure a univocal scale of personal perceived importance of nursing professional values using a summative measure. Factor analysis is only mathematically appropriate for continuous manifest variables with a continuous measure of a latent trait. Though the NPVS-R is intended to measure a continuous variable, the manifest variable, measured by Likert-type item scoring is ordered but non-metric, thus does not hold within mathematical properties. This rendered factor analysis an inappropriate methodology for developing this tool.

Another difficulty stemmed from the application of a varimax rotation within the original analysis of the tool, whereas a promax rotation would have been more appropriate. Also, failure of goodness of fit measures, detect a weakness in the instrument indicating the latent traits measured are not univocal. This supports the suggestion of applying a promax rotation which allows for items to load to more than one factor, rendering it more appropriate for this instrument than a varimax rotation. The combination of complicating factors impacting the reliability of this instrument for measuring personal perceived importance of nursing professional values in this study sample is considered a limitation.

Summary

The major finding of this study indicated all possible strata measured by the NPVS-R had similar abilities and similar response distributions on all characteristics. This finding is in contrast to the hypothesis that the measurement of nursing professional values increase with each year in school. The only factor indicating stronger personal perceived importance when stratified by year in school was justice, with first year or sophomore students scoring significantly higher on this factor as compared to junior or second year students. A possible explanation for this difference is in the timing of the survey, whereas sophomore students were learning about social justice at the time the study was conducted. Other statistical differences based on strata were minimal. Personal perceived importance of nursing professional values compared by gender; indicate males ascribe a lower value to the factor of caring as compared to females. Activism received a higher measurement of personal perceived importance of nursing professional values among Hispanic/Latino participants compared to non-Hispanic/non-Latino participants.

A question is posed whether the instrument is measuring the identified factors or if other latent constructs are being measured. This is a complicating circumstance impacting the analysis of this study. The tool was developed to take a summative measurement of latent traits, though Likert-type scaling is not an appropriate measurement when manifest variables are non-metric. Additionally, a goodness of fit measurement indicates the traits identified in the tool are not univocal. An interesting finding from the analysis of the tool is that the NPVS-R is better at detecting the absence of traits as compared to distinguishing latent traits at the higher end of the scale. This was evidenced by the left skew of the information curves.

The responses to the open-ended question, "What factors fostered the adoption of your nursing professional values", gave credibility to the application of a social cognitive theory as the framework for this study. SDT was selected to provide the foundation for exploring the factors contributing to the internalization of nursing professional values. Respondent's answers validated the assumption, that values and values-based behavior are largely influenced by personal motivation and desire to act a certain way.

Analysis and interpretation of the open-ended question lent credibility to the concept of self-determination and autonomous motivation for influencing the internalization of values. Many responses by the participants contained expressions of connections to past experiences and personal beliefs as factors fostering the adoption of professional values. These responses underscore the view that values stem from personal circumstances and are not exclusively reliant on formal education for instilling these values. However, educational activities, experiences, and exposure to others whom role model values-based behavior do have a positive impact.

The area of professional values has been carefully studied in a variety of settings, with varied study designs, and with multiple participant samples. Study results include similarities and differences to the current study. There is indication multiple and varying factors influence the adoption of professional values including past experiences, personal beliefs, as well as structured educational opportunities. The current study and prior studies illustrate ascribing to nursing values are of high importance for most of those entering into or currently in the profession. Activities and experiences within structured nursing education programs can both catalyze and augment ones' internalization of professional values; however, foundational personal values are strong influential factors for adoption of the values held by the profession.

Further study of the internalization of professional values is recommended. Furthermore, it is recommended additional instrument development for measuring nursing professional values is essential.

References

American Association of Colleges of Nursing, (2008). Essentials of Baccalaureate Education forProfessional Nursing Practice. Available from American Association of Colleges of Nursing, One Dupont Circle, Suite 530, Washington DC, 20036.

American Association of Colleges of Nursing (AACN). (2014). Retrieved from: http://www.aacn.nche.edu/about-aacn/mission-values

Alfred, D., Yarbrough, S., Martin, P., Mink, J., Lin, Y., & Wang, L.S., (2013). Comparison of professional values of Taiwanese and United States nursing students. *Nursing Ethics, 20*(8) 917-926.

American Nurses Association (ANA). (2015). *Code of Ethics for Nurses with interpretive Statements*. Silver Spring, MD.

Arnold, L. (2002). Assessing professional behavior: yesterday, today, and tomorrow. *Academic Medicine, 77*(6) 502-515

Baumann, A., & Kolotylo, C. (2009). The professionalism and environmental factors in the workplace questionnaire: development and psychometric evaluation. *Journal of Advanced Nursing, 65*(10) 2216-2228.

Benner, P. (1984). *From Novice to Expert: A collection of Readings Related to Competency-Based Training.* Deakin University, Victoria, Australia.

Benatar, S.R. (1997). The meaning of professionalism in medicine. *South African MedicalJournal, 87*(4) 427-431.

Burford, B. (2012). Group processes in medical education: learning from social identity theory. *Medical Education, 46*(2) 143-152.

Chang, H., Shyu, Y. L., Wong, M, Friesner, D, Chu, T, & T, C. (2015). Which aspects of professional commitment can effectively retain nurses in the nursing profession? *Journal of Nursing Scholarship, 47*(5) 468-476.

Clickner, D. A., & Shirey, M. R. (2013). Professional comportment: the missing element in nursing practice. *Nursing Forum, 48*(2), 106-113. doi:10.1111/nuf.12014

Coulehan, J. (2005). Today's professionalism: Engaging the mind but not the heart. *Acad Med,80*, 892-898.

Cook, T.H., Gilmer, M.J., & Bess, C.J. (2003). Beginning students' definitions of nursing: an inductive framework of professional identity. *Journal of Nursing Education, 42*(7) 311-317.

Dawson, B. & Trapp, R.G. (2004). *Basic & Clinical Biostatistics.* McGraw-Hill Companies Inc.

Deci, E.L., Koestner, R, & Ryan, R.M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards and intrinsic motivation. *Psychological Bulletin, 125*(6) 627-668.

Deci, E.L., & Ryan, R.M. (1985). The general causality orientations scale: self-determination in personality. *Journal of Research in Personality, 19*, 109-134.

Deci, E.L. & Ryan, R.M. (2000). The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4) 227-268.

Deci, E.L., & Ryan, R.M. (2008). Self-determination theory: a macrotheory of human motivation, development, and health. *Canadian Psychology, 49*(3) 182-185.

Deist, F.D. & Winterton, J. (2005). What is competence? *Human Resource Development International, 8*(1) 27-46.

Delgado-Antolin, J.C. (2013). Integrating values in the care giving activity from the professional point. Investigacion, Educacion and Enfermeria, 32(1) 157-164.

Dempsey, J. (2009). Nurses values, attitudes and behavior related to falls prevention. *Journal of Clinical Nursing, 18*(6) 838-848.

Dinc, L., & Gastmans, C. (2012). Trust and trustworthiness in nursing: an argument-based literature review. *Nursing Inquiry, 19*(3) 223-237.

Dinc, L., & Gastmans, C. (2013). Trust in nurse-patient relationships: a literature review. *Nursing Ethics, 20*(5) 501-516.

Dinmohammadi, M., Peyrovi, H., & Mehrdad, N. (2013). Concept analysis of professional socialization in nursing. *Nursing Forum, 48*(1) 26-34.

Eddy, D.M., Elfrink, V., Weis, D., & Schank, M.J. (1994). Importance of professional nursing values: a national study of baccalaureate programs. *Journal of Nursing Education, 33*(6) 257-262.

Esmaeili, M., Dehghan-Nayeri, N., & Negarandeh, R. (2013). Factors impacting membership and non-membership in nursing associations: a qualitative study. *Nursing and Health Sciences, 15*(3) 265-272.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175-191.

Faulk, D.R., Parker, F.M., & Morris, A.H. (2010). Reforming perspectives: MSN graduates' knowledge, attitudes and awareness of self-transformation. *International Journal of Nursing Scholarship, 7*(1) 1-15.

Fernandez, N., Dory, V., Ste-Marie, L., Chaput, M., Charlin, B., & Boucher, A. (2012). *MedicalEducation*, *46*(4) 357-365.

Fischer, M. (2014). A comparison of professional value development among pre-licensure nursing students in associate degree, diploma, and bachelor of science in nursing programs. *Nursing Education Perspectives,35*(1) 37-42.

Flexner, A. (1915). Is social work a profession? National Conference of Charities and Corrections, Proceedings of the National Conference of Charities and Corrections at the Forty-second annual session, Baltimore, Maryland, May 12-19, 1915. Chicago. *Research on Social Work Practice, 11*(2) 152-165.

Fowler, D.L. (2013). Service-learning and nursing professional values development: an experimental research study. *Nursing Education Perspectives, 34*(1) 50-51.

Gambino, K.M. (2010). Motivation for entry, occupational and intent to remain: a survey regarding registered nurse retention. *Journal of Advanced Nursing, 66*(11) 2532-2541.

Gersh, M. R. (2008). *Professionalism in physical therapy: Exploring the clients' perspectives.* Gonzaga University). , 375 p. (UMI Order AAI3302738.). (2010060846).

Grove, S.K., Burns, N., & Gray, J.R. (2013). *The practice of nursing research: appraisal, synthesis, and generation of evidence (7th* ed.). St. Louis: Elsevier.

Hanks. R.G. (2008). The lived experience of nursing advocacy. *Nursing Ethics, 15*(4) 468-477.

Harvey, R.J. & Hammer, A.L. (1999). Item response theory. *The Counseling Psychologist, 27*(3) 353-383.

Health Resources and Service Administration (2013). The U.S. Nursing Workforce: Trends in Supply and Education. Retrieved from: bhpr.hrsa.gov/healthworkforce/reports/nursingworkforce/nursingworkforcefullreport.pdf

Hensel, D. (2014). Typologies of professional identity among graduating baccalaureate-prepared nurses. *Journal of Nursing Scholarship, 46*(2) 125-133.

Hooft, S.V. (2011). Caring, objectivity and justice: an integrative view. *Nursing Ethics, 18*(2) 149-160.

Hopkins, L.T., (1937). Integration; its meaning and application. Retrieved from: ajph.aphapublications.org/doi/pdfplus/10.2105/AJPH.28.6.785-a

Hurd, H., G. (1967). Who is a professional? *Journal of Cooperative Extension*. 77-84. Retrieved from: *www.joe.org/joe/**1967**summer/**1967**-2-a1.pdf*

Iacobucci, T.A., Daly, B.J., Lindell, D., Griffin, L., & Griffin, M.Q. (2013). Professional values, self-esteem,and ethical confidence of baccalaureate nursing students. *Nursing Ethics, 20*(4) 479-490.

Johnstone, M. (2011). Nursing and justice as a basic human need. *Nursing Philosophy, 12*(1) 34-44.

Kubsch, S., Hansen, G., & Huyser-Eatwell,V. (2008). Professional values: the case for RN-BSNcompletion education. *The Journal of Continuing Education in Nursing, 39*(8) 375-384.

Larson, M., S. (1977). The rise of professionalism: A sociological analysis. University of California Press. 0-520-03950-5.

LeDuc, K., & Kotzer, A.M. (2009). Bridging the gap: a comparison of the professional nursing values of students, new graduates, and seasoned professionals. *Nursing Education Research, 30*(5) 279-284.

Lenners, D.W., Roehrs, C., & Piccone, A.V. (2006). Tracking development of professional values in undergraduate nursing students. *Journal of Nursing Education, 45*(12) 504-511.

Lindberg, C., Fagerstrom, C., Sivberg, B., & Willman, A. (2014). Concept analysis: patient autonomy in a caring context. *Journal of Advanced Nursing, 70*(10) 2208-2221.

Livsey, K.R. (2009). Structural empowerment and professional nursing practice behaviors of baccalaureate nursing students in clinical learning environments. *International Journal of Nursing Education Scholarship, 6*(1) 1-16.

Mannarini, S. (2010). Assessing the Rosenberg self-esteem scale dimensionality and items functioning in relation to self-efficacy and attachment styles. *Testing, Psychometrics, Methodology in Applied Psychology, 17*(4) 229-242.

Manojlovich, M. (2005). The effect of nursig leadership on hospital nurses' professional practice behaviors. *Journal of Nursing Administration, 35*(7/8) 366-373.

Martin, P., Yarbrough, S., & Alfred, D. (2003). Profession and society: professional values held by baccalaureate and associate degree nursing students. *Journal of Nursing Scholarship, 35*(3) 291-296.

Mead, G.H. (1934). *Mind, Self, and Society: From the Standpoint of a Social Behaviorist.* The University of Chicago Press, Chicago, Illinois.

Mezirow, J. (1990). *Fostering Critical Reflection in Adulthood,* Jossey Bass.

Moller, A.C., Deci, E.L., Ryan, R.M. (2006). Choice and ego-depletion: the moderating role of autonomy. *Personality and Social Psychology Bulletin, 32*(8) 1024-1026.

Morris, A.H., & Faulk, D. (2007). Perspective transformation: enhancing the development of professionalism in RN-to-BSN students. *Journal of Nursing Education, 46*(10) 445-451.

Muraki, E. (1992). A generalized partial credit model: application of an EM algorithm. Research Report, Educational Testing Service. National Council of State Boards of Nursing (2015). retrieved from: https://www.ncsbn.org/nurse-practice-act.htm

Newton, J.M., Kelly, C.M., Kremser, A.K., Jolly, B. & Billett, S. (2009). The motivations to nurse: an exploration of factors amongst undergraduate students, registered nurses and nurse managers. *Journal of Nursing Management, 17*(3) 392-400.

Nickerson, & Resick. (2010). Comparing student role perceptions: Traditional to community-based curriculum. *International Journal of Nursing Education Scholarship, 7*(1), 1p. doi:10.2202/1548-923X.2018

Nouri, J.M., Ebadi, A., Alhani, F., Rejeh, N., & Ahmadizadeh, M.J. (2013). Qualitative study of humanization-based nursing education focused on role modeling by instructors. *Nursing and Health Sciences, 15*(2) 137-143.

Ohlen, J. (1998). The professional identity of the nurse: concept analysis and development. *Journal of Advanced Nursing, 28*(4) 720-727.

Peter, E., & Morgan, K.P. (2001). Explorations of a trust approach for nursing ethics. *Nursing Inquiry, 8*(1) 3-10.

Porr, C., & Egan, R. (2013). How does the nurse educator measure caring? *International Journal of Nursing Education Scholarship, 10*(1) 1-9.

Primm, R. D. (2010). Professionalism among occupational health nurses. *AAOHN Journal,58*(7), 281-283. doi:10.3928/08910162-20100625-02

Rafael, A.R.F. (2000). Watson's philosophy, science, and theory of human caring as a conceptual framework for guiding community health nursing practice. *Advances in Nursing Science, 23*(2) 34-39.

Rassin, M. (2008). Nurses' professional and personal values. *Nursing Ethics, 15*(5) 614-630.

Reutter, L., Field, P.A., Campbell, I.E., Day, R. (1997). Socialization into nursing: nursing students as learners. *Journal of Nursing Education, 36*(4) 149-155.

Rohan, M. (2000). A rose by any name? the values construct. *Personality and Social Psychology Review, 4*(3) 255-277.

Russell, K.A. (2012). Nurse practice acts guide and govern nursing practice. *Journal of Nursing Regulation, 3*(3) 36-42.

Rutherford, M.M. (2014). The value of trust to nursing. *Nursing Economics, 32*(6) 283-290.

Rutty, J. E. (1998). The nature of philosophy of science, theory and knowledge relating to nursing professionalism. *Journal of Advance Nursing, 28*(2) 243-250.

Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1) 68-78.

Scammell, J. (2014). Values: the heart of our professional code. *British Journal of Nursing, 23*(19) 1048.

Scotto, C.J. (2003). Faculty forum: a new view of caring. *Journal of Nursing Education, 42*(70) 289-291.

Shadish, W.R., Cook, T.D., & Campbell, D.T. (2001). *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin.

Shaw, H.K., & Degazon, C. (2008). Integrating the core professional values of nursing: a profession, not just a career. *Journal of Cultural Diversity, 15*(1) 44-50.

Shih, F.J., Lin, Y.S., Smith, M.C., Liou, Y.M., Chiang, H.H., Lee, S.H., & Gau, M.L. (2009). Perspectives on professional values among nurses in Taiwan. *Journal of Clinical Nursing, 18*(10) 1480-1490.

Sills, G., M. (2000). Peplau and professionalism: the emergence of the paradigm of professionalization. *Journal of the American Psychiatric Nurses Association, 6*(1) 29-34. 29 DOI: 10.1177/107839030000600107

Sox, C. (2007). The ethical foundations of professionalism: A sociologic history. *Chest, 131* (5):1532-1540. Doi:10.1378/chest.07-0464

Tarlier, D.S. (2004). Beyond caring: the moral and ethical bases of responsive nurse-patient relationships. *Nursing Philosophy, 5*(3) 230-241.

Taylor, A.J.W. (2003). Justice as a basic human need. *New Ideas in Psychology, 21*(3) 209-219.

Tybout, A.M., & Scott, C.A. (1983). Availability of well-defined knowledge and attitude formation process: information aggregation versus self-perception. *Journal of Personality and Social Psychology, 44*(3) 474-491.

Thorpe, K., & Loo, R. (2003). The values profile of nursing undergraduate students: implications for education and professional development. *Journal of Nursing Education, 42*(2) 83-90.

Trochim, W.M.K. (2005). *Research Methods: The Concise Knowledge Base.* Ohio, Cengage Learning.

Vezeau, T.M. (2006). Teaching professional values in a BSN program. *International Journal of Nursing Education, 3*(1) 1-15.

Ware, S.M. (2008). Developing a self-concept of nurse in baccalaureate nursing students. International Journal of Nursing Education Scholarship, 5(1) 1-17.

Weis, D., & Schank, M. (2009). Development and psychometric evaluation of the nurses professional values scale – revised. *Journal of Nursing Measurement 17,* (3), 221-231.

Williams, G.C. & Deci, E.L. (1996). Internalization of biopsychosocial values by medical students: a test of self-determination theory. *Journal of Personality and Social Psychology, 70*(4) 767-779.

Woods, M. (2012). Exploring the relevance of social justice within a relational nursing ethic. Nursing Philosophy, 13(1) 56-65.

Zoller, H.M. (2005). Health activism: communication theory and action for social change. *Communication Theory, 15*(4) 341-364.

References for Statistical Package R

Alan Genz, Frank Bretz, Tetsuhisa Miwa, Xuefei Mi, Friedrich Leisch,Fabian Scheipl, Torsten Hothorn (2015). mvtnorm: Multivariate Normal and t Distributions. R package version 1.0-3. URL http://CRAN.R-project.org/package=mvtnorm

Analysis, Educational and Psychological Measurement: 65, 676-696.

http://www.stat.ucla.edu/research/gpa

Bernaards, Coen A. and Jennrich, Robert I. (2005) Gradient Projection Algorithms and Software for ArbitraryRotation Criteria in Factor.

Dimitris Rizopoulos (2006). ltm: An R package for Latent Variable Modelling and Item

John Fox (2010). polycor: Polychoric and Polyserial Correlations. R package version 0.7-8. http://CRAN.R-project.org/package=polycor

Martin Maechler et al. (2015). sfsmisc: Utilities from 'Seminar fuer Statistik' ETH Zurich. R package version 1.0-28. http://CRAN.R-project.org/package=sfsmisc

R Core Team (2015). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.

URL https://www.R-_project.org/.

Response Theory Analyses, Journal of StatisticalSoftware, 17 (5), 1-25. URL

http://www.jstatsoft.org/v17/i05/

Revelle, W. (2015) psych: Procedures for Personality and Psychological Research, Northwestern University, Evanston, Illinois, USA, http://CRAN.R-project.org/package=psych Version = 1.5.8.

Taiyun Wei (2013). corrplot: Visualization of a correlation matrix. R package version 0.73. http://CRAN.R-project.org/package=corrplot

Venables, W. N. & Ripley, B. D. (2002) Modern Applied Statistics with S. Fourth Edition. Springer, New York. ISBN 0-387-95457-0

Appendix A

Nurses Professional Values Scale-R ©

Indicate the importance of the following value statements relative to nursing practice. Please circle the degree of importance.

(A = not important to E = most important) for each statement.

Not Important	Somewhat Important	Important	Very Important	Most Important
A	B	C	D	E

1.	Engage in on-going self-evaluation.	A	B	C	D	E
2.	Request consultation/collaboration when unable to meet patient needs.	A	B	C	D	E
3.	Protect health and safety of the public.	A	B	C	D	E
4.	Participate in public policy decisions affecting distribution of resources.	A	B	C	D	E
5.	Participate in peer review.	A	B	C	D	E
6.	Establish standards as a guide for practice.	A	B	C	D	E
7.	Promote and maintain standards where planned learning activities for students take place.	A	B	C	D	E
8.	Initiate actions to improve environments of practice.	A	B	C	D	E
9.	Seek additional education to update knowledge and skills.	A	B	C	D	E
10.	Advance the profession through active involvement in health related activities.	A	B	C	D	E
11.	Recognize role of professional nursing associations in shaping health care policy.	A	B	C	D	E
12.	Promote equitable access to nursing and health care.	A	B	C	D	E
13.	Assume responsibility for meeting health needs of the culturally diverse population.	A	B	C	D	E
14.	Accept responsibility and accountability for own practice.	A	B	C	D	E
15.	Maintain competency in area of practice.	A	B	C	D	E
16.	Protect moral and legal rights of patients.	A	B	C	D	E

17. Refuse to participate in care if in ethical opposition to own professional values. A B C D E

OVER ➡

Nurses Professional Value Scale-R ©

		Not Important	Somewhat Important	Important	Very Important	Most Important
		A	B	C	D	E
18.	Act as a patient advocate.	A	B	C	D	E
19.	Participate in nursing research and/or implement research findings appropriate to practice.	A	B	C	D	E
20.	Provide care without prejudice to patients of varying lifestyles.	A	B	C	D	E
21.	Safeguard patient's right to privacy.	A	B	C	D	E
22.	Confront practitioners with questionable or inappropriate practice.	A	B	C	D	E
23.	Protect rights of participants in research.	A	B	C	D	E
24.	Practice guided by principles of fidelity and respect for person.	A	B	C	D	E
25.	Maintain confidentiality of patient.	A	B	C	D	E
26.	Participate in activities of professional nursing associations.	A	B	C	D	E

Demographics: Circle the appropriate descriptor

27. A. Undergraduate Student B. Graduate Student C. Practicing nurse

28. A. Female B. Male

29. A. African American B. Asian/Pacific Islander C. White D. Hispanic E. Native Am

Please feel free to make comments:

 DW/MJ