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Gender Equity in Nursing Education: Student Perceptions and Impact on the Educational Experience

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GENDER EQUITY IN NURSING EDUCATION:

STUDENT PERCEPTIONS AND IMPACT ON THE EDUCATIONAL EXPERIENCE

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Title IX of the Education Amendments of 1972 ensured gender equity in education. Although gender equity is an established concept in the medical and science, technology, engineering, and mathematics fields, the concept has limited exposure in nursing. This study investigates student perceptions of gender equity in nursing education.

The Gender Equity in Nursing Education Questionnaire (GENEQ), developed by the researcher, was used to explore perceived gender equity in the nursing classroom setting and the clinical environment as well as the perceived impact of gender equity on the nursing education experience. The GENEQ was developed from the nursing literature on barriers faced by male nursing students. An expert review panel provided content validity and a pilot study indicated reliability of the tool.

A quantitative, cross-sectional survey methodology was used for this investigation guided by feminist theory. A convenience sample included senior baccalaureate nursing students at multiple nursing education programs in Pennsylvania. The final sample included 471 female and 100 male senior nursing students representing 15 different nursing programs in Pennsylvania.

Findings showed significant differences between male and female respondent scores related to perceived gender equity in the classroom setting and clinical environment. The classroom setting subscale returned significant differences in eight of the 15 subscale items and the total subscale score. The clinical environment subscale showed significant differences in 13

of the 14 subscale items and total subscale score. Results also indicated a significant difference between scores for the total gender equity scale. Identified sex of the student was the only significant predictor of gender equity score in the model which also included age, race/ethnicity, marital status, school setting, choice of nursing career, and desired nursing specialty. Finally, a positive correlation exists between perceived gender equity scores and perceived impact on educational experience scores. Study findings support previous quantitative and qualitative nursing research.

Specific recommendations for nursing faculty, programs, curriculum, and administration related to the significant findings are presented. A call for further investigation into the concept of gender equity in nursing education is also recommended given the significant study findings.

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TABLE OF CONTENTS

Chapter Page

Chapter Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Over 40 years ago, Title IX of the Education Amendments of 1972 (Title IX) became law. Paragraph (a) section 1681 of P.L. 92-318, 20 U.S.C. contains 37 words which represent a compendium of the Title IX legislation:

> No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. (Carpenter & Acosta, 2005, p. 3)

Title IX passed during a period of increasing social awareness of discrimination in American society, and the legislation directly confronted sex discrimination in education. The intent of the original authors and proponents of Title IX was to address issues of gender inequity and underrepresentation of women in post-secondary education and the academic workforce (Women in Higher Education, 2010). The impact of the law, however, far exceeded that initial vision. Title IX encompassed all levels of education and all academic programs receiving Federal dollars and provided the impetus for educational programs to move toward gender equity.

Title IX provides a backdrop to investigate gender equity in nursing education. In the following pages of this chapter, the minority status as well as the subsequent gender discrimination and bias that may exist for men in nursing is described. The purpose for the study is provided, research questions are posed, and a theoretical framework offered. Definitions significant for understanding the investigation are presented. Assumptions of the study are discussed before concluding the chapter with the significance of the study.

Statement of the Problem

The nursing profession is currently experiencing a global shortage of personnel complicated by an aging workforce and an expected increase in demand for nurses in the near future. Nursing education faces a broader predicament within the context of the nursing shortage due to an older workforce and even fewer prepared faculty to fill current position openings (American Association of Colleges of Nursing (AACN), 2010). Despite an apparent need, nursing, for the most part, has not taken advantage of men as a potential pool of candidates to ameliorate nursing shortages (McLaughlin, Muldoon, & Moutray, 2010). Historical calls for the recruitment of men into the profession date to the turn of the last century and multiple times in the latter twentieth century (Wilson, 2001). Notwithstanding the reports and position papers related to increasing male numbers in nursing programs, nursing remains fastidiously entrenched as a feminized role and profession with minimal concerted effort to recruit and retain men into the ranks. For the men who have chosen nursing as a career, educational and professional aspirations have often been stymied through encounters with gender-based barriers (Institute of Medicine (IOM), 2011; Kouta & Kaite, 2011; O'Lynn, 2004). Despite recognition of those barriers, little research has been conducted in the area of gender equity in nursing education.

In the context of education, gender becomes almost synonymous with sex despite gender being a social construct and sex being biologically determined (Loughrey, 2008). When considering gender issues in higher education, females have often been represented as being at a disadvantage. Until the final years of the twentieth century, females were less represented in multiple fields in higher education – especially in the sciences and engineering (Mewborn, 1999). However, admissions of females into these programs greatly increased in the 1990s and in many of the historically male-dominated fields, females now have almost equaled or

overtaken their male counterparts (National Center for Education Statistics (NCES), 2005; Villenueve, 1994). Females now receive 57% of all bachelor degrees awarded in the United States (NCES, 2008). Nursing, however, has not shown a similar equilibrium of the genders. Females remain the large majority of students in nursing and of nursing faculty, while males continue to represent only a very small minority in both. The latest figures show that males represent 11.4% of BSN students, 9.5% of MSN students, 7.5% of students in PhD programs, and 9.0% of students in DNP programs (AACN, 2011); less than 5% of full-time nursing school faculty are men (AACN, 2009).

Complicating the retention and recruitment issues are claims of gender inequities in the nursing education classroom and clinical environments. Anthony (2004) contended that nursing's development as a feminine sex role profession relates directly to Nightingale's reforms and the European religious sisterhood models developed in the 19th and 20th centuries – the results of which ostracized males from the profession. The perpetuation of gender exclusion and a somewhat limited view of the history of nursing by nursing faculty may explain some of the gender bias and discrimination in nursing education today. In her summary, Anthony (2004) concluded:

> Gender bias does exist in nursing education and can lead to discrimination against male students…. Ignorance of the historical role that males have played as caregivers, acceptance of the feminine stereotype of nursing, gender bias in nursing history texts, overemphasis on nursing as an oppressed profession, and practices that create different learning experiences for male and female students are the basis for unintentional bias and discrimination. (pp. 124-125)

The IOM (2011) detailed specific challenges for male students of nursing including stereotypes, lack of role support, and questionable academic acceptance. The report indicated that the

barriers male students of nursing face must be ameliorated for recruitment strategies to be successful and for nursing to obtain larger numbers of male students to offset the nursing shortage. However, few quantitative studies have comprehensively investigated gender bias and discrimination encountered by males in nursing education programs or the barriers they may face.

Among notable efforts, O'Lynn (2004) developed a retrospective quantitative survey for practicing male nurses containing 33 identified gender-based barriers in nursing education programs. Another similar study was performed by the Bernard Hodes Group (2005), a marketing firm investigating the status of men in nursing. Other quantitative and qualitative research, anecdotal evidence, and literature reviews also report on individual or multiple gender-related barriers faced by male nursing students (Kelly, Shoemaker, & Steele, 1996; Kulakac, Özkan, Sucu, & O'Lynn, 2009; Porter-O'Grady, 2008; Roth & Coleman, 2008; Smith, 2006; Villenueve, 1994). Findings from these studies indicate that gender bias and discrimination may occur for male students of nursing in the following areas:

- no male mentorship in nursing programs
- limited or no presentation of the history of men in nursing
- the use of feminine pronouns in nursing textbooks
- lack of encouragement for male students by nursing faculty
- perceptions of the nurse as female
- no male faculty role models
- not feeling welcomed in the clinical environment
- no support for the male student's decision to pursue nursing as a career
- anti-male remarks in the classroom and clinical environments

- exclusion from nursing student activities
- no active recruitment efforts to attract male students by schools of nursing
- different requirements or limitations for male students based on sex
- isolation of male students
- tokenism of male students

Similar findings are identified by MacWilliams, Schmidt, and Bleich (2013) in a literature review on men in nursing related to potential barriers that exist regarding sexual diversity in nursing.

Purpose

The purpose of the current investigation was to provide additional insight into the issue of gender equity in nursing education. Through the use of a quantitative, cross-sectional survey methodology on a convenience sample of senior nursing students at multiple nursing education programs in Pennsylvania, student perceptions of gender equity in nursing education were elicited. As supported by the subsequent literature review, a paucity of quantitative research into the concept of gender equity in nursing education exists, and few studies include both male and female participants. The proposed investigation addressed these shortcomings. Additionally, the results add further perspective and knowledge to current information in the nursing literature in the area of gender equity as well as provide insights that may prove beneficial in the continued efforts to recruit and retain more men into the nursing profession.

Research Questions

The study sought to answer the following research questions to supplement the existing knowledge base on gender equity in nursing education:

1. What is the effect of identified gender on student perception of gender equity in nursing education?

2. What are the major demographic variables that predict student perception of gender equity in nursing education?
3. What is the relationship between student perception of gender equity in nursing education and the perceived impact of gender-based issues on the educational experience?

Conceptual Frameworks

Two theoretical frameworks, both evolving from the recognition and response to oppression, will be used to guide this research inquiry. The broad theoretical framework of feminism was chosen to provide the underpinnings of this investigation through a gender-based lens of oppression and discrimination. Feminism is closely associated with the Title IX movement and more recently has expanded to include any oppression or discrimination by one dominant group toward another. Feminism will guide the efforts for research questions that investigate the gender equity concept. A more focused theoretical framework influenced by the work of Pablo Freire related to oppression through pedagogical undertakings provides support for an examination of actual educational environments and practices that may perpetuate oppression and bias in the nursing classrooms and clinical areas. This more focused theoretical framework is included to provide a lens through which to examine the impact of perceived gender equity on the educational environment, as the theory deals more specifically with pedagogical processes. Both of the theoretical frameworks will be discussed more fully in the next chapter.

Definition of Terms

The following definitions are offered to provide a consistent base knowledge of terminology to be used in this endeavor.

Sex – biological bases of male and female, static, difficult but not impossible to change.

Gender – social construct of male and female, variable, may change over time and between cultures; elicited through a demographic variable.

Sex Equality – same treatment, accommodation, and opportunity for males and females.

Gender Equity – fair treatment, suitable accommodation, and appropriate opportunity for males and females with consideration to the inherent differences related to social constructs, prejudices, and obstacles that either sex may encounter; this variable will be measured via a Likert scale response from never to always reflecting personal experience for specific gender-based issues related to the nursing classroom setting and clinical environment included in the Gender Equity in Nursing Education Scale (GENES).

Choice of Nursing Career – job related attributes and personal characteristics that may influence an individual's decision to pursue nursing as a career; this variable will be measured by indication of how important each of 11 provided characteristics identified in the literature influenced a participant's choice to enter nursing and is included in the Gender Equity in Nursing Education Questionnaire (GENEQ) (see Appendix A).

Classroom Setting – environment where students obtain base knowledge and the didactic portion of nursing education; gender equity in the classroom setting will be measured from responses to 15 items in the first section of the GENES.

Clinical Environment – practice or simulation laboratories, community or ancillary practice modalities, or hospital based units where students obtain practical aspects and hands-on training related to nursing care skills and nursing education; gender equity in the clinical environment will be measured from responses to 14 items in the second section of the Gender Equity in Nursing Education Scale (GENES).

Nursing Education Program – a structured educational opportunity that provides adequate preparation and knowledge for student participants to obtain required pre-requisite study and experience to qualify for the National Council Licensure Examination for Registered Nurses (NCLEX-RN®); for the purpose of this study, nursing education program represents only baccalaureate degree programs.

Desired Nursing Specialty – anticipated or preferred field of nursing practice students identify as likely to be pursued after graduation, each with specific knowledge and skill attributes related to that field of nursing practice; identified from indication of how likely a student is to pursue work in each desired nursing specialty after graduation from a list of 16 nursing specialty areas identified from the literature and included in the GENEQ.

Nursing Student – any individual enrolled in a baccalaureate level pre-licensure nursing education program to prepare Registered Nurses.

Perceived Impact on Educational Experience – nursing student report of the affect of individual items or issues related to gender equity in the classroom setting and clinical environment; this variable will be measured via a Likert scale response indicating a very negative impact to a very positive impact for specific gender-based issues related to the nursing classroom setting and clinical environment included in the GENES.

Assumptions

In the proposed research endeavor, the following assumptions will be made related to the sample selected and the data obtained.

1. Individuals in the final year of their respective nursing education programs will accurately relate their experiences as nursing students.

2. Respondents will answer questions in the study tool without prejudice and the answers will appropriately reflect individual experiences.
3. Study participants will reliably determine adherence to all inclusion and exclusion criteria related to participation.
4. Data obtained from the sample of nursing students will provide a current description of gender equity in nursing education measured with the GENES and as experienced by those students.

Significance

The increasing number of female applicants in other fields may leave nursing with a decreasing pool of candidates from which it historically drew. Unless nursing is able to recruit and retain men, the survival of the profession may be in jeopardy (Kippenbrock, 1990; Villenueve, 1994). The current need for, and expected future shortages of, qualified nurses magnifies this dilemma exponentially. The nursing profession and especially nurse educators in their role as initial contacts for future nursing professionals, must strive for gender equity. Nursing has called for gender equity in health care and other professions (National Institute of Nursing Research, 2000), but may not recognize disparities in its own ranks.

The historical feminization of nursing elucidates the continued dominance of females in the professional and educational settings. The feminization of the nursing role may also explain many of the difficulties encountered by male nursing students and represents a unique conundrum when compared to the advances by females in male dominated professional areas. Females desiring acceptance into a male dominated role encounter less social criticism and stigma than males entering a female role position. Additionally, feminine stereotypes of nursing and of multiple nursing specialties present a greater barrier for males related to an increased

stigma associated with men who are feminine than with women who behave in masculine ways (Muldoon & Reilly, 2003).

Affirmative action legislation directly influenced the advancement of women in male dominated fields. However nursing, as a female majority profession, was exempt from complying with affirmative action policies (Sullivan, 2002). Women have successfully attained gender parity in some previously male dominated professions, and those professions continue in efforts to rise above perceived barriers and stereotypes in an attempt to embrace everyone as valued contributors. The same opportunities should be afforded to men in nursing. If men had experienced the same degree of gender equity in nursing, the nursing shortage might not be as severe today, or as bad as it is anticipated to become in the near future (Gerencher, 2002; O'Lynn, 2004; Sullivan, 2002). However, as Villenueve (1994) pointed out, the nursing profession has made little effort to recruit or retain men in nursing. A more recent IOM (2011) report supports this statement indicating that gender-based barriers in nursing continue and must be overcome if more men are to be recruited to help offset the shortage of nurses and fill expanding nursing roles. The report also indicates that medical schools made "a significant achievement of gender parity in a traditionally male-dominated profession" (p. 238), but a similar gender balance has not occurred in nursing.

A better understanding of nursing students' perception of gender equity in nursing education is required to further efforts to increase the number of men in nursing. Specifically, the relationships between certain demographic variables and student perception of gender equity will provide a foundation of understanding for nurse educators to move toward a more gender neutral learning environment, aid in the development of strategies to recruit and retain more men into nursing, and eliminate gender-based barriers in nursing education. Hopefully, data from this

research endeavor will supply specific factors or themes that will need to be addressed to gain greater momentum toward gender equity in nursing education. Ultimately, results should provide nurse educators with the required information to address specific areas to facilitate movement toward gender equity in nursing education classrooms and clinical environments through improved policies and initiatives. Finally, the results may allow nursing to move toward greater compliance with Title IX legislation by creating more gender-equitable classroom settings and clinical environments and recruiting and retaining more men into the nursing profession.

In the following chapter, a comprehensive review of the literature related to gender equity in the classroom and clinical environments will be presented. Through a focus on bias and discrimination that may be present, stereotypes and barriers that are encountered by male students of nursing will be discussed. This literature provided the framework for the development of GENEQ, the tool that will be used to measure student perceptions of gender equity in, and the impact of gender equity on, the nursing education environments.

CHAPTER 2

LITERATURE REVIEW

According to The MARGARET Fund of the National Women's Law Center (NWLC) (2011), Title IX addresses the issue of gender equity in ten key areas of education and academia. Those key areas include athletics, access to higher education, career education, education for pregnant and parenting students, employment, learning environment, math and science, sexual harassment, standardized testing, and technology. Two of these key areas are integral to this investigation of gender equity in nursing education and will be highlighted in a review of the academic and nursing literature – access to higher education and the learning environment.

The literature commonly measures gender equity in access to higher education through parity of the sexes, or equal numbers of male and female students, in a given program. The large difference in the number of males and females in the nursing profession and nursing education provide evidence that further study and investigation into gender equity is needed to correct this disparity. Obstacles to gender parity in nursing education may be better understood through investigations into choice of nursing career and desired nursing specialty. Gender equity in the learning environment, however, may be examined through a multitude of variables, often dependent upon the specific discipline of study.

For this review of the literature, gender equity in the learning environment will be defined through gender-based classroom and clinical barriers encountered by students of nursing gleaned from the nursing education literature. After the presentation of the literature findings in these areas, the theoretical frameworks for the investigation will be reviewed. Finally, an overview of the development of a new tool to measure gender equity in nursing education will be provided in the methods section. The tool development section will also serve to summarize the

literature findings and present the rationale for the need and benefits of this research endeavor.

Access to Higher Education

One measure commonly used to evaluate access to higher education is the parity of female to male students in a given field. As Cooper (2003) pointed out, Title IX mandated gender parity, or equal access and representation in education, but the greatest benefit was for females. He added, "educators have noted, with increasing alarm, that few … advocacy measures exist for boys. Indeed, the emphasis on feminine accomplishment has left many boys behind" (p. 860). The demographics of nursing education and the nursing profession indicate a need for increased efforts to attain gender equity in nursing when measured by parity of the sexes. Specifically, increased efforts to recruit and retain men into nursing are required to move toward gender equity in access to nursing education.

Nursing Numbers

The National Sample Survey of Registered Nurses (U.S. Department of Health and Human Services, Health Resources and Services Administration, 2010) found that 6.2% of employed nurses licensed before 2000 are male, while 9.6% of employed nurses licensed in 2000 or later are male. However, the AACN (2011) stated that overall, "men represent only 6.6% of the U.S. nursing workforce" (p. 3). The latest figures released by the AACN (2011) indicated around 10% of all nursing students are male. Men represented 11.4% of BSN students, 9.5% of MSN students, 7.5% of students in PhD programs, and 9.0% of students in DNP programs. Among nursing education faculty, figures from 2001 indicated only 3.5% of faculty and 2.4% of deans are male (AACN, 2001). The latest published findings showed only a modest increase in male nursing school faculty to 5% of the total (AACN, 2009). When nursing is compared to other fields influenced by the Title IX legislation, some of which have reached gender parity, the

numbers indicate a significant gender disparity in nursing that should warrant immediate attention and further action.

Student Numbers in Other Fields

The medical field represents a comparable health profession known to be a historically male dominated profession. Females in medical school rose from 7.7 percent in 1964 to 48.5 percent in 2005 (Childers, 2006). Medicine is now considered to be a gender-equitable field despite its history of male domination and social perception of physicians as males. Recent statistics from United States medical schools indicate that 51% of all applicants and 50% of first-year students are female, while 30% of all professors and 10% of all deans are female (Association of American Medical Colleges, 2005). Similar advances have been made by women in other male dominated fields as well. In the period from 1970 to 2001, females receiving law degrees have increased from 5% to 47% and dentistry degrees from 1% to 39% (NCES, 2005).

In the sciences, technology, engineering, and mathematics (STEM) fields, Bonetta (2010) indicated "the situation has dramatically changed in the past three decades" (p. 889). In 2006, women had reached parity with men in certain science disciplines with some fields seeing a majority of women in graduate studies – 76% of psychology graduate students, 56% of biological sciences graduate students, and 54% of social sciences graduate students. The Committee on Maximizing the Potential of Women in Academic Science and Engineering (2006) indicated that women received 27% of mathematics and statistics degrees and almost 20% of engineering degrees. The authors emphasized the significance of the latter number by stipulating that engineering historically attracted the fewest females.

According to West and Curtis (2006), in the year Title IX was passed, women earned

only 41% of Master's degrees, 16% of doctorates, and 6% of first professional degrees. Data presented by these authors from 2004 show women received 59% of Master's degrees, 48% of doctorates, and 49% of first professional degrees. The authors noted that:

> The predominance of women in the student populations of American colleges and universities is so great that the American Council on Education's recent *Gender Equity in Higher Education: 2006*, focuses on the "gender gap" in male achievement at the undergraduate level. (p. 5)

According to American Council on Education data, the percentage of enrolled male undergraduates at American colleges and universities dropped from 44% in the 1995-96 school year to 42% in the 2003-04 school year (King, 2006). Additionally, the male enrollment data reflected a leveling off of male applicants while female applicants continued to rise. Nursing must consider this new trend and the potential consequences related to any efforts to attain gender equity for nursing in the future. A decreasing number of overall male candidates further emphasizes the need for increased efforts to recruit male students into nursing to maintain the current trends toward gender equity as measured by parity of the sexes.

Faculty Numbers in Other Fields

With the impressive advances in access to education, enrollment, and completion of degrees made by women in post-secondary education, one might expect similar advances to have been made by women in academic faculty presence. Unfortunately, the integration of women into faculty ranks has not occurred at a similar rate. According to West and Curtis (2006), women comprised 27% of all faculty in higher education in 1972. Of the women holding full-time faculty appointments, 9% attained full professor positions. In 2003, women made up 43% of all faculty representing 39% of full-time faculty positions and 48% of part-

time faculty positions. However, women attaining full professorship had grown to only 24%. Interestingly at that time, women almost reached parity with men in community colleges, where they represented 47% of full professor positions. These authors concluded that the rate of appointment of women into tenured and tenure-track positions at research universities must increase dramatically over the next decade if gender equity is to be achieved, especially in light of the increased representation of women among doctoral degree recipients. However, given the time required for faculty advancement, some lag between the number of doctoral graduates and attainment of full professor status should be expected. In leadership positions, women have advanced from 3% of college presidents at the time of Title IX enactment to 23% in 2006 (Kuznick & Ryan, 2008). When compared to the nursing numbers, the advancement of females into the male dominant academic environment has far surpassed that of men into the female dominant nursing education environment. Dannels et al. (2009) noted:

> Recent evidence … supports the ethical imperative that increased diversity in gender and race, together with cultural competence, leads to better teaching, research, and clinical care environments. This yields a more diverse set of role models for students, a more representative healthcare workforce for patients, and more effective health care because of the better understanding of disease in the cultural context. (p. 68)

The literature underscores the need for greater awareness and action to increase the male presence in nursing related to gender equity when measured through parity. In the following pages, inequities suggested in relationship to males as a minority population in nursing will be examined related to the nursing education environment.

Learning Environment

During the review of the literature, specific themes related to reported gender inequities emerged and included how and why men choose nursing as a career, differences in choice of nursing specialty practice, and barriers related to the classroom and clinical environments. These themes will provide structure and organization to this section of the review. The first theme to be discussed examines why men choose nursing as a career and their expectations of the nursing profession.

Choice of Nursing Career

The ultimate choice of a career involves several steps, the first of which involves what attracts students to certain fields. A study by Kippenbrock (1990) investigated recruitment strategies and nursing school variables related to male applications and enrollments among National League of Nursing accredited baccalaureate nursing programs. At that time, almost one in eight schools reported no male students in their nursing programs. Of the 179 schools responding, almost 70% indicated no effort was made to recruit male students. Among the schools with the highest male applications and enrollments, several factors became apparent. Male nursing students preferred lower educational costs, presence of male faculty, faculty with higher educational credentials, and schools with larger gift and endowment funds. However, the only variable reaching significance identified by the study related to schools that provided expense paid visits to high school counselors and other high school personnel. These schools had significantly higher applications and enrollments of male nursing students. The study added information on individual nursing school characteristics that attract male students to the growing research on why men choose nursing.

Overall, the sample size was adequate for the data analysis and results were based on responses from a national survey of accredited nursing programs. However, the low response rate from some geographic areas and a large unexplained variance in the multiple regression analysis may affect the appropriateness of generalizing the results. Additionally, the study examined school responses to questionnaires and included no student input. This may bias the study results as the findings relied on a logical extrapolation of self-reported school and student data. No other studies were found that identified specific school attributes related to male students, but the importance of the findings on attractive school attributes cannot be disregarded despite the age or limitations of the study.

Specific career attributes also may weigh upon an individual's choice of career. Perkins, Bennett, and Dorman (1993) found career attributes such as job opportunities, financial incentives, job security, career flexibility, and multiple career choices as major factors influencing male nursing students' choice of nursing as a career in a quantitative study of 146 undergraduate male nursing students. The sample included all male students enrolled in associate or baccalaureate degree programs at the time of the study from all the nursing schools in one Southeastern state. Investigators achieved a 69% return rate on questionnaires distributed to all potential participants. Additional findings included previous experience in a health care related field, a previous degree in an unrelated area, a family member who was a nurse, being older than female counterparts, being unmarried, and nursing as the initial step in a broader career path. The study provided valuable information related to career choice and characteristics of male nursing students, but lacked generalizability related to the geographic limitations of the sample pool and homogeneity of respondents. However, the findings reported in this study provided a baseline upon which later studies may be compared.

A qualitative study using grounded theory methodology by Boughn (1994) with a convenience sample of 12 male nursing students found three central themes emerged in responses to the question of why males choose nursing. The themes included a psychosocial motivation, a practical motivation, and a self-efficacy motivation. Specifically, the themes identified in this study indicated a desire to care for others, the need for job security and salary, and the realization of feelings of power and empowerment. A key observation made by the author related to the lack of attention and support afforded to men who choose to enter a female dominated profession compared to that given to women who "break barriers" (Boughn, 1994, p. 411) to pursue study in traditionally male dominated fields. Contrary to the significant findings of Perkins et al. (1993), not a single student in this study indicated influence from a high school counselor or other high school personnel as a motivational factor in their choice of nursing. The relatively small convenient sample limits the transferability of study results and must be taken into account when comparing these findings to other results.

However, Kelly et al. (1996) also identified the three themes documented by Boughn (1994) as motivational factors to enter nursing in a qualitative study using focus groups. The sample consisted of 18 male nursing students in Illinois. The male students in this study included four from an associate degree program, two from a diploma program, and 12 from baccalaureate programs. Additionally, these investigators found that family support, available job opportunities, previous experience in health care, and technology were among other motivating factors to enter nursing identified by the male students. The qualitative approach in this study included focus groups and the authors identified several techniques used to strengthen credibility of the findings including prolonged engagement, investigator triangulation, peer debriefing, and verification of findings by participants. This was the first

study related to career choice that identified specific barriers related to the actual choice of nursing as a career. The identified barriers included lack of information related to career choice, being perceived as unmanly, not being accepted by clients, and family role changes. Similar to the Boughn (1994) study and again contradicting the findings of Perkins et al. (1993), the male students in this study indicated little to no information or guidance from high school counselors related to their pursuit of nursing as a career. Although the sample in this study included a greater representation of nursing programs, the convenience sample, limited geographic representation, and homogenous characteristics represented significant limitations.

A later qualitative study using a grounded theory approach by Boughn (2001) used a convenience sample including a matched cohort of 12 male and 16 female students. Using her previously identified themes, she found similarities in the desire for caring between the two sexes, but differences between the sexes in regard to the practical and self-efficacy motivations. Males were more likely than females to identify salary and job security as practical motivators for selecting nursing. Females indicated a higher interest in empowering patients while male students identified power as a professional and looked to empower the profession as a whole in the self-efficacy motivators. Limitations in this study are similar to those previously identified, however the inclusion of females in this investigation provided a richer understanding of previous findings and underscored the need for more heterogeneous samples in future studies and the inclusion of females as a comparison group when investigating gender factors.

A more recent qualitative investigation using Colaizzi's phenomenological method of data analysis by Ellis, Meeker, and Hyde (2006) provided findings similar to Boughn (2001), but also mentioned that several male respondents identified not being smart enough for medical school as another factor. The sample in this study included 13 senior male students from three

baccalaureate programs in a Southern state. Similar limitations as previously mentioned could be argued for this study related to the sample; regardless, the findings provided additional considerations for examining gender equity issues in career choice to supplement the existing knowledge base.

Findings by Chou and Lee (2007) in a qualitative study of male nursing students in Taiwan support the general themes identified above. This study also used Colaizzi's phenomological method of data analysis and found encouragement and support from family and friends toward a nursing career choice, job attributes, desire to care for others, and concern related to academic performance or ineligibility to pursue other majors were the major factors related to the professional ambition choice identified in their study.

A survey of practicing male nurses by Bernard Hodes Group (2005) provided findings similar to those cited by nursing students in response to choice of nursing, but found the desire to help people was the top reason compared to earlier findings of career attributes by Perkins et al. (1993). Among the other top responses indicated for choosing a nursing career were growth profession with many career paths, career stability, and variety of geographic career choices. The sample in the Bernard Hodes Group (2005) study consisted of 498 practicing male nurse respondents and represents one of two large quantitative research endeavors identified. However, the data analysis includes only descriptive statistics. Almost half of the respondents lived in California. A broader sampling did occur through outreach via one national organization and advertisements in two national periodicals. However, the representation from other geographic areas of the country did not balance the Western cohort limiting the generalizability of the results. This limitation, however, may not be the most questionable given the retrospective methodology and self-report of respondents related to choice of a

nursing career. Respondent experiences during their nursing education may be vague or influenced by other professional experiences as in some cases reflection occurred many years after the event. However, despite these limitations, the identified individual career attributes matched the findings in previous endeavors and indicated a consistency of findings over time.

The consistency of findings related to selection of nursing as a career choice support the hypothesis that choice of nursing career has some relationship to the broader concept of gender equity in nursing education. A lack of studies that examine both male and female respondents in this area emphasizes the need to examine differences between the sexes and whether those differences impact perceptions of gender equity and the educational experience. The proposed study will investigate choice of nursing career in male and female senior nursing students and the effect of choice of nursing career on perception of gender equity in nursing education. For data analysis, choice of nursing career will be converted to a numeric value using a gender factor based on those choices most commonly associated with male nurses. After selecting nursing as a career and near the completion of their education, students invariably make decisions about the nursing specialty that most interests them. Another important variable to be investigated, then, is the desired nursing specialty.

Desired Nursing Specialty

As seen with the previously reviewed choice of nursing career, the desired nursing specialty among male nursing students compared to practicing male nurses remains somewhat consistent. The findings by Perkins, et al. (1993) indicated the majority of male nursing students at that time envisioned careers in the emergency room, critical care, and as nurse anesthetists. The Bernard Hodes Group (2005) also found critical care and emergency room nursing among the top specialties of practicing male nurses in their survey; however, nurse

anesthetists represented only two percent of the responses. Medical surgical nursing, nursing management and nurse educator were also identified among the top responses by male nurses in the Bernard Hodes Group (2005) study. These findings suggest male nurses today continue to gravitate to nursing specialties reflective of the historical context of areas congruent with the male sex role in nursing—basically critical care, emergency medicine, psychiatry, operating room, and administration (Stott, 2003; Villenueve, 1994). Anecdotal evidence also supports these findings as evidenced by an article by three male nursing students involved in leadership roles in the student nurse association (Desjardins, Davis, & Gregoire, 2008).

Muldoon and Reilly (2003) investigated nursing career choices among enrolled nursing students to describe gender appropriateness of the career, desirability in relation to perceived gender appropriateness, effects of individual characteristics on career choice, and an analysis of gendered views and social stereotypes on nursing career choices. The sample consisted of 384 nursing students in their first four weeks and included 34 male participants. The Bem Sex Role Inventory was used to determine psychological characteristics consistent with traditional sex role attributes. Nursing specialties were rated on gender appropriateness for males or females and then characterized as highly female sex typed, female sex typed, and gender neutral—as the majority of nursing careers were viewed more appropriate for women. The conclusions indicated that "gender does not emerge as the single most important factor in predicting the student nurses' career choices" (Muldoon & Reilly, 2003, p. 98).

Hierarchical multiple step-wise regression analyses from the Muldoon & Reilly (2003) study indicated that gender role identity, academic self-efficacy, and occupational self-efficacy were also significant predictors of career choice in nursing. For career choices identified as

highly feminine, gender ($\beta = 0.18$, $P < 0.001$), academic self-efficacy ($\beta = 0.25$, $P < 0.001$), occupational self-efficacy ($\beta = 0.16$, $P < 0.001$), and gender role orientation ($\beta = -0.12$, $P < 0.05$) were all significant predictors. For career choices identified as feminine, the only significant predictors were academic self-efficacy ($\beta = 0.25$, $P < 0.001$) and occupational self-efficacy ($\beta = 0.16$, $P < 0.05$). Gender ($\beta = -0.16$, $P < 0.001$), academic self-efficacy ($\beta = 0.21$, $P < 0.01$) and occupational self-efficacy ($\beta = 0.22$, $P < 0.01$) were significant predictors for those career choices identified as gender neutral with male students reporting greater interest in gender neutral careers than female counterparts.

A limitation of the Muldoon & Reilly (2003) study is the small number of male respondents, but the number is representative of the fraction of men in nursing at the time of the study – less than 10%. The investigators also considered the need for a longitudinal design to more fully support the findings. An additional conclusion of the study indicated psychological sex role characteristics may act as a barrier with feminine type females related to a belief that they would be less successful in gender neutral or female type careers. Feminine stereotypes of nursing and of multiple nursing specialties also presented a greater barrier for males related to an increased stigma associated with men who are feminine than with women who behave in masculine ways. These findings might suggest that psychological sex role characteristics may also relate to perceived gender equity.

Both sex role characteristics and gender are social constructs, and as defined in chapter one of this work, may change over time. This phenomena is evident in research conducted by Jinks and Bradley (2004) showing how attitudes and stereotypes of nursing have changed from 1992 to 2002. In the discussion of their findings, these authors indicate “a significant shift of opinion about nursing stereotypes and gender within the last decade” (p. 125). The importance

of identifying specific nursing specialties that may link to perceptions of gender equity in nursing education may lead to interventions that ultimately allow a more gender neutral perception of all areas of nursing specialties and the nursing education environment or develop strategies to highlight those specialties in recruitment efforts.

Classroom Setting

Nursing education encompasses both didactic and practical components requiring both classroom and clinical instruction. As such, both areas must be investigated for potential inequities. The classroom setting will be reviewed first. Dyck, Oliffe, Phinney and Garrett (2009) found that male performance in the classroom paralleled traditional masculine traits including decisiveness, risk-taking, assertiveness, and leadership in a qualitative study involving six male nursing students and their instructors. Among the observational findings in the study, male nursing students contributed more to classroom discussions, made more comments, and asked more questions than their female counterparts. Additionally, instructors indicated that male students took on more leadership roles in the class, used more humor in comments and actions, and more frequently exhibited risky behaviors like challenging information or taking on a confrontational role. The study also supported previous findings of a feminine culture in nursing education classrooms (e.g., Ellis et al., 2006) citing emphasis on personal reflection, emotion, and feminine intuitive processes. Male students described "contrived and artificial efforts on the part of instructors to elicit the 'men's perspective' or 'male input' into class discussion" (Dyck et al., 2009, p. 652), as if the few men in the class represented the totality of male opinion. To establish credibility for this explorative study, the investigators used data immersion, reflective thought, peer discussion, bracketing, direct quotations, and verification of findings with study participants. The authors admitted that

study design, small sample size, and geographic limitation impacted the transferability of the study, but stated:

> generalizability was neither the aim nor claim of this study. Instead the findings offer intriguing insights and point to the need for larger, longitudinal studies to better understand what prevails in the gendered experiences of men and women in nursing classrooms. (Dyck et al., 2009, p. 653)

Observational findings in the Dyck et al. (2009) study indicated nursing instructors assumed student familiarity with the female anatomy and devoted greater time and detail on review of the male anatomy during instruction on catheterization, supporting a finding by Harding, North and Perkins (2008). These authors found that male students indicated a lack of education on female genitalia and that "it was presumed that the young women knew and understood" (p. 96). As a result, male students often found the need to supplement their classroom teaching with personal education endeavors or seek assistance from peers when confronted with assisting female patients. A further finding of this qualitative investigation was that participants also emphasized feelings of vulnerability and exclusion.

Smith (2006) lamented that research in nursing often treats men as a single category, without variability in the ranks complementing the findings of Dyck et al. (2009). This phenomenon may have been the impetus for his study exploring the challenges faced by non-traditional male nursing students. Using critical demography theory, the study investigated a unique subsample of men in nursing school, specifically, a criterion sample consisting of 29 non-traditional male nursing students from a two-year program in the Northeast US. The investigator used both a survey and interview format providing quantitative and qualitative data for analysis. The pressures of nursing school, a specific lack of resources and facilities for men, feelings of

isolation and being a minority, and having clients refuse care from nursing students who were male were among the gender-based barriers in the reported findings. Limitations of the study include a lack of generalizability related to the convenience sample and threats to internal validity related to the data collection methods. As the author admits, the decision to include the quantitative data was intuitive in nature and not strategically planned. Therefore, the survey did not specifically address issues of gender in a purposeful manner. However, the results of the survey supported findings of the qualitative piece and were included to provide additional depth to the findings.

Bell-Scriber (2008) also found classrooms to be a challenging environment for male nursing students in her qualitative study of the differences in perception of the nursing education environment between male and female learners. Through observations of a medical-surgical classroom of 53 learners and interviews with 21 students (6 male and 15 female) and seven lecturers, this investigator found specific "cooling" factors (Bell-Scriber, 2008, p.146) for male nursing students. Terseness or harshness in communications, discriminatory words or behaviors, a feeling that some did not approve of men, a sense of prejudice, and a use of generalizations related to gender in the classroom were found to be challenging nurse educator behaviors toward male students. Neither gender indicated a lack of support, discrimination, or bias from peers, but indicated all existed in nurse educator behaviors or the nursing education environment with bias through exclusive use of female pronouns in nursing textbooks and therapeutic communication dialogues specifically mentioned. The bias in textbooks echoes similar findings from previous studies (e.g., Kelly et al., 1996; O'Lynn, 2004; and Smith, 2006). Limitations of the study included a convenience sample with matching criterion providing only close, not exact pair matching to demographic data. Additionally, all the instructors in the study were female.

However, this is one of the few studies that included a matched cohort of female students for comparison of findings.

In a discussion of the results of her study, Bell-Scriber (2008) stated, "the discriminatory findings in this study can be correlated with findings in non-nursing classrooms where discriminatory treatment toward women *has been previously* [emphasis added] described in male-dominated career path" (p. 148). Findings related to the barriers present in the nursing education environment supported those identified by Kelly et al. (1996). However, the author indicated a contrast to some of Smith's (2006) findings. Differences in age and maturity of the participating students in the two studies may represent possible confounding variables. Bell-Scriber (2008) conceded a lack of progress among nurse educators in creating a more gender-equitable environment for male nursing students. In the conclusion, this investigator called on nurse educators to use new tactics and strategies to welcome male students to the classroom and recognize the unique contributions the male presence provides for nursing. In an opinion article, Brady and Sherrod (2003) also placed the responsibility on nursing faculty to make male nursing students feel more comfortable in the classroom and to reshape the nursing education experience to eradicate existing gender-based barriers.

To investigate specific gender-based barriers, O'Lynn (2004) developed a survey tool including 33 gender-based barriers for males in nursing education programs identified from a review of the literature and informal interviews. The tool was reviewed by members of the American Assembly for Men in Nursing (AAMN) for content and face validity. The survey was sent to 200 randomly selected male members of the AAMN and licensed male nurses in Montana. A total of 111 completed surveys were returned representing a 60% response rate. Although this represents one of the larger quantitative undertakings, only descriptive statistics

were presented in the results. None of the 33 barriers in the tool met pre-determined criteria for exclusion indicating that at least 30% of respondents deemed an item important with the only exceptions being those items related to Learning Style Theory which had a threshold of 10% of respondents indicating the item as important.

Findings indicated that over two-thirds of the respondents identified no history of men in nursing, feminine pronouns in textbooks, and lack of encouragement or support as some of the problems faced by men during nursing school. Ten of the barriers were identified by over three-quarters of the respondents as important and included: no support for decision to pursue nursing, anti-male remarks, exclusion from nursing student activities, lack of preparation for men working in the profession with women, and different requirements or limitations based on sex. These findings support other quantitative and qualitative research and literature review reports on the barriers faced by male students (Bernard Hodes Group, 2005; Kelly et al., 1996; Kulakac et al., 2009; Okrainec, 1994; Roth & Coleman, 2008; Smith, 2006; Villenueve, 1994). As O'Lynn (2004) concludes, "the barriers men face in nursing school are pervasive, consistent, and have changed little over time" (p. 229).

Roth and Coleman (2008), in their review of the literature, included older articles as they also postulated little has changed related to the problems and perceived barriers men face upon entering nursing. This attitude by male investigators may be why Evans (2002) believes that women remain more adept at researching the issue of barriers for men in nursing in her commentary on the subject. She contends that the male minority receives hidden advantage by virtue of being male in a patriarchal society (Evans, 1997). According to this author, the advantages male nursing students enjoy include privileged minority status with special benefits, being taken more seriously, filling more positions of leadership and prestige, and

receiving special treatment by physicians among others. The huge disparity between these commonly held and published beliefs and actuality is highlighted by several authors (Brady & Sherrod, 2003; Porter-O'Grady, 2008; Villenueve, 1994). In fact, the statistics previously cited should dispel any contention of male dominance or advantage that can be conjectured in relationship to nursing education or in the professional nursing realm and actually may indicate the opposite – that discriminatory practices and gender inequities for men exist in nursing education and may be perpetuated by nurse educators.

The literature related to the classroom setting and instruction specifically identifies several salient topics related to discriminatory practices and gender inequities. These topics include:

- inadequate coverage of anatomy
- lack of reference to the history of men in nursing
- gender bias in textbooks and instruction
- discriminatory behaviors by faculty
- lack of support for male students
- altered assignments or differential treatment in the classroom
- unappreciated contributions or faculty dissent to comments

Each of these topics has been included as part of this study in the GENES to evaluate the perception of gender equity in the classroom setting. Additionally, the impact of the individual items on the educational environment will be elicited. The literature also emphasizes the need to incorporate both male and female respondents in further studies and currently lacking in most of the published offerings related to gender-based studies in nursing.

Clinical Environment

The literature certainly supports the need to reshape the nursing classroom into a more gender neutral environment, but the clinical environment must also be scrutinized. Grady, Stewardson, and Hall (2008) dealt more with the clinical aspect of nursing education, specifically the phenomenon of caring. In this interpretive phenomenological study, the researchers explored faculty perceptions and responses to caring in male nursing students. Similar to the findings by Dyck et al. (2009), some faculty identified the use of humor among male nursing students in the clinical environment as an aspect of caring. Faculty also indicated male nursing students provided more patient education to empower patient's with the knowledge to make decisions regarding their care in contrast to the findings by Boughn (2001). All faculty in this study agreed that caring in the male nursing student was a different caring than that expressed by their female counterparts. The authors admit that study faculty used female student caring as a frame of reference and this may have hindered views beyond the stereotypical notices of caring. The only male faculty member indicated that male nursing students may not follow traditional caring behaviors and thus be considered less caring than female classmates. Limitations of this study related to restrictions of the sample to one school, known relationships among the researcher and participants, and the theoretical lens through which the study was conducted. These limitations restrict generalizability and veracity of the findings; however, the results cannot be discounted. The question has been raised as to whether men can provide the same care as women.

Men in nursing school often conform to a feminist caring role which may not reflect male caring behaviors. In fact, men might be expected to demonstrate a feminization of their role to coincide with the expectations of faculty and the historical viewpoints of caring and nursing

(Ellis et al., 2006; Grady et al., 2008; Muldoon & Reilly, 2003; O'Lynn, 2009; Stott, 2006). As Lynch (2009) points out, the young male and female nursing students today have little in common with, and struggle to make connections with, the older female nurses they encounter on clinical rotations. Using female caring behaviors as a frame of reference for male student clinical behaviors may perpetuate the stereotypical feminization of nursing and might hinder male progress in the clinical arena. This gendered viewpoint may also impact the greater nursing knowledge related to the clinical phenomenon of caring. Such a skewed frame of reference among nursing clinical faculty and resulting disconnect between students and clinical nurses may jeopardize the learning environment for all students, not just males.

Additional challenges for the male student in clinical environments have been described in several studies. Stott (2006) found isolation, exclusion, and being singled out in the clinical setting to be prevalent—an example cited male nursing students being singled out repeatedly to remove clothing when role-playing a clinical scenario. Smith (2006) indicated isolation and exclusion take place when instructors introduce male nursing students with gender-specific terms like "male nurse" or "male nursing student", noting that instructors do not introduce women in clinical classes as "female nurse".

Gender-specific terminology might be most noticeable in obstetrical nursing specialties. Cudé (2004) identified gender-specific terminology as a barrier for male student nurses in their obstetric rotations. MacRae (2003) found that female nurses working in obstetrics supported male colleagues, but opposition and negative attitudes to men in obstetrics were found among nurse educators. The negative attitude of nursing educators may be in response to earlier findings by Morin, Patterson, Kurtz, and Brzowski (1999):

> Although the majority of mothers preferred not to have a male student provide nursing care, most expressed a need for male nurses in general. In fact, some mothers viewed not allowing a male nursing student to care for them as discriminatory. Nevertheless, this did not seem to affect their decision about male nursing students in a maternity setting. (p. 86)

However, as the authors warn, the study reflected the findings from a homogeneous group of women in a small community hospital and suggested future research in this area to include a sample representative of individuals from other cultures and metropolitan areas. The authors indicated that the nature of intimate care expected in the post-partum period might also impact the findings.

Intimate touch is another subject studied related to male nursing students and male nurses in the clinical setting. In a qualitative study using discourse analysis, Harding et al. (2008) conducted an exploratory investigation of the use of intimate touch by male nurses in clinical environments. Participants for the study were selected through a purposive sampling plan and a snowball effect. The final sample included 18 men who were registered nurses, or studying to become qualified for licensure in nursing in New Zealand. Findings included four thematic elements: sexualizing of men's touch, vulnerability and stress related to touch, keeping oneself safe, and a lack of professional support. Supporting evidence included how males are chaperoned with female patients; intimate physical care provided by a male is problematic regardless of the gender of the patient – accusations of heterosexual misconduct by females and homosexual advances by males; seeking permission from the patient or assistance from another staff member during intimate physical encounters with patients; and finally, similar to the findings by Dyck et al. (2009), nurse educators did not adequately prepare male students to

provide intimate care and hygiene for female patients. Harding et al. (2008) concluded that nurse educators create a "paradoxical discourse" when allowing female patients to refuse care based on gender, but not allowing refusal of care based on race. A limitation of this study included an admission that the sample of 18 was not related to data saturation, but to manageability of data collection and analysis related to project time constraints. Additionally, one could argue the validity of applying or considering the results from a New Zealand study to the North American environment. However, Evans (2002) found similar themes in a qualitative study in Canada.

Using interviews and thematic analysis, informed by both feminist theory and a masculinity theory, Evans (2002) investigated gender stereotypes in male nurses and the sexualization of intimate touch in their work experiences. The sample consisted of eight male nurses in Nova Scotia selected via a convenience sampling technique. Data collection included two rounds of semi-structured interviews – the first allowing for general discussion of the issues by the participants, the second followed analysis of the first round responses and more fully explored thematic elements. The themes identified in this study included affirmation of caring, the problematic nature of touch for male nurses, determining if it is safe to touch, and strategizing to protect against inappropriate accusations. These themes are very similar to those found by Harding et al. (2008) in the New Zealand study.

Evans (2002) further expanded the paradoxical discourse identified by Harding et al. (2008) in her conclusions and mentioned the stigma related to gay males as being sexual deviants, predators, and pedophiles and concludes that men in nursing "are caught up in complex and contradictory gender relations that situate them in stigmatizing roles vulnerable to accusation of inappropriate touch" (p. 447). Limitations of the study include the convenience sampling

technique, small sample size, homogeneity of the sample, and lack of a comparison group. Again, one might question the validity of the results related to American male nurses and nursing students given the origins of the study. However, the gender barriers implied and identified related to intimate touch cannot be discounted from consideration given the similarity of findings in these two studies. Men in nursing encounter significant differences in the clinical environment related to intimate touch and caring which may impact perceived gender equity.

The discordant environment related to intimate touch by male nursing students, among other factors, may lead to increased role strain, or an inability to fill role expectations, which constitutes another area of investigations related to male nursing students. Callister, Hobbins-Garbett, and Coverston (2000) found significant differences in reported role strain between male and female nursing students in a maternal child health clinical rotation. Male nursing students reported higher levels of role strain stress on the Sherrod Role Strain Scale. Through additional qualitative analysis of student journals, Callister et al. (2000) identified two themes that contributed to the male students' reported role strain. The themes that emerged included an expression of inadequacy or feelings of incompetence and fear related to gender stereotyping or nurses not wanting male students to participate in the care of their patients. These findings, in an American study, support consideration of the findings of the two previous investigations. Support from clinical instructors and staff willingness to help the male nursing students resulted in the expression of more positive feelings about the rotation and the experience. The authors provided evidence of the validity and reliability of the measurement tool used and although they used a convenience sample, the participants attended several different baccalaureate nursing programs, included equal numbers of male and female respondents, and represented a wider range of ages than many of the previously cited studies. The addition of a qualitative analysis of

clinical journals provided methodological triangulation of data that complemented the quantitative data.

In another study of 184 male nursing students investigating role strain, Baker (2001) found moderate to severe role strain in the majority of participants using the Total Role Strain Scale. Although significant differences in the mean level of role strain were identified between program years ($p < .05$), the actual data was not reported, only the statistical methodology (Fisher's PLSD test) used to find significance. The sample included male nursing students from 14 different schools of nursing in Ontario. Additionally, the sample consisted of representatives from each year of a three year program of study. Baker (2001) also used the Bem Sex Role Inventory in the study and found "the more strongly a respondent identified with traditional female sex-role characteristics the less role strain they experienced" (p. 379). Referenced alpha coefficients supported reliability of the instruments and validity was established through reference to other studies. The author indicated the need for further study with female nursing students to provide a comparison for the findings again highlighting the limitations of a homogeneous sample; however, the sample size was adequate to support significance of the findings. Geographic limitations again decrease the generalizability of the results of this investigation; however, the study provides a baseline of information on this phenomenon.

The literature from the clinical nursing education environment identifies specific topics relevant to the concept of gender equity and underscores the need for further investigations to include both male and female participants. The topics derived from the clinical environment literature reiterate many of those from the classroom setting, but introduce some additional considerations related to the practice environment and include:

- altered assignments or differential treatment based on gender

- discriminatory behaviors by clinical faculty
- lack of support for male students
- fear of accusation of inappropriate conduct
- lack of preparation or feelings of incompetence
- gender bias or gender stereotyping / gender-based terminology
- isolation or exclusion, singled out
- difficulty in meeting perceived role expectations

Each of these topics has been included in the GENES to evaluate the perception of gender equity in the clinical environment. Additionally, the impact of the individual items on the educational environment will be elicited. Again, the literature emphasizes the need to incorporate both male and female respondents in future studies, this investigation includes both sexes, which will provide greater depth to the results obtained.

The previous literature review related to gender equity in nursing education indicates a lack of quantitative investigations into this concept to date. Qualitative studies have provided rich descriptive data related to the phenomenon, but only a few quantitative studies in related areas have been performed. The published results from two of the quantitative studies lacked significant statistical rigor, providing only descriptive analysis of the data. However, the data obtained from these studies indicate specific gender-based barriers and discriminatory practices in nursing classroom settings and clinical environments. The proposed research will provide additional new information on gender equity in nursing education and meet several of the shortcomings in the current knowledge base related to the topic. Additionally, results will provide more depth and richness with inclusion of female nursing students in the sample.

Theoretical Frameworks

The previous sections indicate a need for further investigation into the phenomenon of gender equity in nursing education. In the following paragraphs, the theoretical frameworks to support the study are further reviewed. A theoretical framework provides a worldview that guides the investigation and allows findings to supplement and support the philosophical underpinnings and tenets of the theory. For this research endeavor, two such theoretical frameworks exist; each provides the necessary foundation and principles to guide a specific aspect of the investigation. Feminism provides an overarching theoretical framework related directly to gender equity. Originally developed from the oppression of women by a patriarchal society, feminism has evolved into a theory that includes the eradication of oppression for all individuals and classes. Similarly, Freire's theoretical framework has evolved from the oppression of the lower class through an educational system that imparts only the knowledge deemed necessary, to a framework that critically examines the pedagogical system and learning environment to raise consciousness of oppressive forces and become part of the process of social change. Each of these theoretical frameworks is included within critical inquiry and both reflect on and are committed to social justice (Reimer-Kirkham & Anderson, 2010).

Feminism

Chinn and Wheeler (1985) defined feminism as "a world view that values women and that confronts systematic injustices based on gender" (p. 74) in their seminal piece in the nursing literature *Feminism and Nursing.* Campbell and Bunting (1991) concurred that an emphasis on gender is consistent throughout feminist theory. However, these authors portray feminist theory and feminist research in an essentialist paradigm – to be done by women and for the benefit of women. Feminist theory has evolved, though, to a more egalitarian paradigm as indicated by

Allan's (1993) concept analysis of feminism for nursing education research. She outlined characteristics of feminism including equal treatment of the sexes, or gender equality, and that an individual be judged on his/her contributions, not biological sex. Her identified defining attributes provide the broad theoretical framework for this investigation and include:

1. a concern with gender equality and the promotion of equal rights for men and women,
2. the expression of the above through theory and action,
3. a concern with the individual rather than sexual or biological characteristics or roles (p. 1550).

Although the current proposal may seem incongruent with the last attribute, the inclusion of females and males in the study sample is a step toward investigating differences and similarities that may eventually provide the impetus to move toward meeting this criterium in future nursing education research. Only a few of the previous studies have included both genders, with most focusing more on the sexual and biological characteristics of the participants in their investigations.

More recent offerings in the general literature further support the use of feminist theory as a theoretical framework related to the overall oppression of men in the nursing education environment. Breeze (2007) lamented the lack of male feminist undertakings and suggested that participation by a diverse population is key to fully realizing an end to the oppression of women. He encouraged discussing the connections between feminism and other issues such as gender, class, race, and sexual orientation. In contrast to earlier feminist theory and feminist research, support for participation by males in feminist scholarly pursuits and research roles is emphasized. Dowd (2010) supported masculinities scholarship as an integral piece of feminist analysis as she stipulated: "Masculinities analysis may also remind us to be attentive to different

patterns of inequality and to our interpretation of those patterns. Where one sex is sole or dominant, dominance should be something that triggers scrutiny" (p. 416). The minority status of men in nursing education therefore further validates feminism as an appropriate theoretical framework for this investigation. Feminist theory provides the framework to examine issues related to gender and minority inequality and oppression, however another theoretical framework supports inequality and oppression through pedagogical practices.

Freire's *Pedagogy of the Oppressed*

Matheson and Bobay (2007) indicated that Freire's model of oppression has been previously applied to nursing and the subject or focus of nursing scholarly discussions, but few nursing research efforts have been undertaken to validate the theory as it might apply to oppression in nursing. Furthermore, their literature search and review concluded that an appropriate model of oppressed group behavior in nursing has not been developed and validated, although specific behaviors have been studied independently. They summarized that oppressed group behaviors in nursing may be related to the current nursing shortage. The gender-based barriers and discriminatory practices identified in the previous sections of this chapter and evident in nursing education today may well represent multiple examples of oppressed group behaviors identified by Matheson and Bobay, making Freire's *Pedagogy of the Oppressed* (1970/2000) an appropriate theoretical framework for the current research endeavor.

One specific example of oppressed group behavior that has been echoed in the previous literature review is how the oppressor forces values and norms on the oppressed group, with characteristics of the oppressed group being seen negatively or of little value. In the nursing classroom setting literature and the nursing clinical environment literature, examples of the need to adapt to the feminine culture of nursing and lack of support or isolation for non-conformity

were evident for male nursing students. Freire (1970/2000) believed education as a practice of freedom as opposed to domination is necessary for oppressed groups to become aware of their subjugated status and through dialogue and awareness eventually free themselves from the oppressor. Findings from the current proposal should provide information to increase awareness of gender equity in nursing education and further the dialogue to end any practices that may bias or discriminate against the male nursing student minority.

This theoretical framework of oppression in education is vital in consideration of the nursing education environment, especially given findings such as one by Ellis et al. (2006) that indicated male students considered the nursing curriculum as one "set up by women or geared toward women's understanding" (p. 524). Similarly, as Stott (2006) found, men find it difficult to "carry out effectively a behavior typically associated with nursing and being female" (p. 329). The assignment of the female majority as oppressor and the male minority as the oppressed in nursing education aligns well with Freire's model of oppression and therefore supports use of this theoretical framework to investigate and hopefully reform nursing education to a more gender-equitable environment. The ultimate goal of both theories, and of the current study, is to identify and understand oppression and inequalities, and through recognition and knowledge move to create a more equitable and egalitarian establishment.

Analysis of the Literature Review

As evidenced by the information presented from this literature review, gender equity in nursing education represents an area for additional study. The quantitative studies often lack adequate sample size for significance and generalizability. Furthermore, the use of convenient, homogenous samples does not allow adequate comparison of results for a deeper understanding of the phenomenon and challenges the veracity and generalizability of the results. A majority of

the studies are descriptive qualitative offerings providing information about gender-based barriers with few quantitative investigations to further explore relationships between the barriers and other variables. Of the few quantitative studies conducted, most relied on retrospective reporting and were conducted over five years ago questioning the applicability and validity of the findings to the current nursing education environment. A dearth of replication of any of the studies to confirm findings exists and supports the need for additional research into gender equity in nursing education. This proposed investigation will provide additional quantitative efforts and analysis of the phenomenon of gender equity in nursing education in response to the evident deficits in research and knowledge related to the subject. In the following chapter, an overview of the methods to be used in the currently proposed research study will be presented.

CHAPTER 3

METHODOLOGY

In the following pages, a cross-sectional, descriptive, quantitative study to investigate gender equity in nursing education is presented. The design, setting, and sampling plan are outlined, followed by a description of the measurement tool used. The development of the tool is reviewed with corresponding validity and reliability data from the pilot study conducted. After the presentation of the study tool, a procedures section describes efforts to obtain IRB approval, informed consent, and the steps used in administration of the study tool and data collection. Finally a data analysis section outlines the specific statistical tests used on the final data set.

Design

The undertaken research investigated the effects of specific variables on student perception of gender equity in nursing education and how gender-based issues impact the educational environment. A cross-sectional, descriptive, quantitative study design was employed using a questionnaire to collect data from baccalaureate level senior nursing students in Pennsylvania for statistical analysis. The GENEQ is a new tool developed specifically for this research. The analyses determined the effect of multiple independent variables on the dependent variable, perception of gender equity in nursing education. Additionally, the relationship between perception of gender equity in nursing education and the perceived impact on the educational environment was evaluated. All study data was collected using the GENEQ either through web-based Qualtrics Survey Software (Qualtrics) or pencil-and-paper administration.

Setting

Respondents for the study were recruited from Pennsylvania schools of nursing that were members of the Pennsylvania Higher Education Nursing Schools Association (PHENSA). The

participants included senior pre-licensure nursing students in baccalaureate degree programs and were recruited during visits to nursing student conferences and events and individual PHENSA campuses by the investigator. All respondents acted individually and gained access to the study questionnaire either by computer, through a specific link via a provided website, or by paper-and-pencil administration of the questionnaire in a classroom setting. A consent page was presented to all respondents before access to the study questionnaire. The consent page stipulated that completion of the questionnaire constituted informed consent and willingness to participate. In the following paragraphs, the specific plan used to recruit respondents is presented.

Sample

The population for this study consisted of all senior pre-licensure nursing students in baccalaureate degree programs in Pennsylvania in 2012 and 2013. Eligibility criteria stipulated students were enrolled in the final year of their programs of nursing study. Inclusion criteria were logically based upon the need for students to have experienced most aspects of the nursing education program and curriculum to adequately reflect upon issues related to gender equity in their programs. Participants included adults aged 20 and older, reflecting the expected ages of students currently enrolled in their final year of baccalaureate education. The exact limit of the older students is not available as respondents only indicated they were born before 1984 for purposes of the study. Likewise, the number of foreign students who may have participated in the study is also unknown as the demographic questions identified only race/culture and not foreign-born students. The study enrolled both male and female students.

A power analysis table was consulted to estimate sample size needs for detecting an independent samples t-test based on an alpha of 0.05, a power of 0.80, and a moderate effect of

0.40 (Cohen's *d*). Polit and Beck (2008) indicate that for most nursing studies, the use of a moderate effect is appropriate. The indicated sample size was N = 196 (98 individuals for each group) (Polit & Beck, 2008). Multiple regression analysis determined the effect of various demographic values on the perception of gender equity in nursing education. A sample size calculator for multiple regression (Soper, 2011) was consulted to determine appropriate sample size for the study. Given a moderate effect size of 0.15 (f^2), a desired statistical power level of .80, a probability level of 0.05 and seven predictors, a sample of 103 was indicated.

A non-probability sampling method was used. A convenience sample of students was gleaned from multiple nursing education programs in the Commonwealth of Pennsylvania. According to data obtained from Degree Prospects, LLC (2010), Pennsylvania ranks fifth in the nation for number of nursing programs ensuring an adequate pool for sampling criteria. Senior nursing students at two rural institutions (East Stroudsburg University and Indiana University of Pennsylvania) were approached via classroom presentation to participate in the initial piloting of the tool in the fall of 2011. These institutions were selected because of accessibility to the student body, geographic location in the state, and multiple known faculty contacts. Participants from these institutions were contacted via on-site classroom visits arranged through known faculty contacts. Eligible students were provided with a business card (see Appendix B) indicating a website that provided a link to the study questionnaire. The website included a letter of consent before access to the questionnaire, and completion of the questionnaire constituted informed consent. A link on the web page provided student participants with access to the GENEQ via Qualtrics.

After the pilot, recruitment of additional nursing students who met the study criteria was undertaken at the Student Nurse Association of Pennsylvania annual convention in the fall of

2011 and three Pennsylvania Student Nurse Challenge competitions in the spring of 2012 via an informative poster display and personal invitation business cards. Typically, these forums attract students from multiple participating Pennsylvania nursing programs. The unique business cards provided the necessary URL for the website which contained the informed consent and a link to the GENEQ for students to access the study questionnaire. Identified student participants at the convention and competitions were also asked to provide study information, via a business card, to male classmates who fit the study criteria. The initial data collection did not provide the anticipated number of responses, so further sampling was conducted. An amendment to the original study protocol was made to include paper-and-pencil administration of the GENEQ.

Additional subjects were recruited via focused recruitment efforts at participating PHENSA schools in the fall of 2012 and spring of 2013. A list of PHENSA member schools is available in Appendix C (PHENSA, 2011). A letter was sent to the dean, director or chairperson of the nursing programs for of all PHENSA institutions in early September, 2012 (see Appendix D). The focused recruitment letter provided an introduction to the study, an interest in participation form (see Appendix E), and a copy of the Indiana University of Pennsylvania IRB approval (see Appendix F). A self-addressed, stamped envelope was included to facilitate return of the form by interested parties. As a follow-up to the letter, the investigator presented at the annual PHENSA member's conference to make contact with those indicating an interest in participation and to identify other potential interested parties who may not have responded to the letter. If requested, a letter of research participant agreement or IRB approval was obtained from interested PHENSA institutions before approaching students.

Known contacts identified at the PHENSA conference provided appropriate days or times when greatest access to the student body is available and selected a preferred venue. For each

school, study information was presented during an on-site visit or via email indicating the study URL. Classroom presentations and administration of a pencil-and-paper questionnaire occurred at seven PHENSA schools (Bloomsburg University, Cedar Crest University, East Stroudsburg University, Indiana University of Pennsylvania, Marywood University, Widener University and West Chester University of Pennsylvania). An email providing the study web site was distributed to senior students at an additional three schools (Drexel University, Edinboro University, and Pennsylvania State University). Data collection began after IRB approval was obtained and continued until the number of male surveys collected exceeded the indicated power analysis number. A minimum of 98 total male participants was needed to perform all aspects of anticipated data analysis.

Instruments

The Gender Equity in Nursing Education Questionnaire (GENEQ) is a new tool developed specifically for this research endeavor. The tool was initially devised from professional experience and observations, informal interviews with male nursing students, and an extensive literature review. The initial draft of the GENEQ included three subscales for the Gender Equity in Nursing Education Scale (GENES) which was reduced to two subscales after initial review by selected nursing faculty and experts in gender equity research. Several of the demographic questions were deleted or refined to more closely reflect specific issues identified in the gender-based nursing education literature. Finally, the language in several of the questions was altered to be more easily understood or to be less ambiguous. The resulting final GENEQ was used in this research endeavor.

The GENEQ asks for demographic information including gender, age, race, marital status, choice of nursing career, desired nursing specialty, and which PHENSA school the respondent

attends. The importance of each of 11 factors in determining choice of nursing as a career is indicated via a Likert scale for each item. Similarly, the likelihood of pursuing a specific nursing specialty is indicated via a Likert scale for each of 16 nursing areas of interest or specialty practices. Participants also complete two sections of questions related directly to issues of gender equity in the classroom and clinical environments which constitute the Gender Equity in Nursing Education Scale (GENES).

The GENES is comprised of two subscales. The first subscale provides information about gender equity issues in the nursing education classroom setting. Respondents also indicate the perceived impact on the educational experience for each of the 15 items in this section via a five-point Likert scale. The second subscale examines the clinical environment through 14 additional items. Each item represents a gender equity issue related to clinical practice with the perceived impact on the clinical learning experience again indicated. Some items in each of the scales are negatively worded and need to be reverse-scored in the final analysis. A five-point Likert scale is used to track student responses to all items in the scale. Therefore, the minimum score for the classroom setting is 15 and the maximum score is 75; likewise, the minimum score for the clinical environment is 14 and the maximum score is 70. A total score of 145 represents the maximum achievable gender equity score for the scale and a 29 represents the minimum achievable score. The scores indicated above also represent the maximum potential scores for the perceived impact of gender equity issues on the educational environment in the classroom setting and clinical environment, respectively. A Microsoft Word® representation of the GENEQ is included in Appendix A.

Procedures

An expert panel reviewed the final GENES to provide content and face validity data.

Invitations to participate on the expert review panel were emailed to twelve individuals who previously conducted and published gender-based nursing research. Of the twelve invited participants, nine responded favorably and questionnaire packets were sent for review. Completed review packets were received from six individuals; therefore the expert review panel consisted of six reviewers. Each reviewer was asked to rate each of the GENES items on a four-point Likert scale as to ability of the question to obtain information related to gender equity and the importance of the topic and/or information as it relates to gender equity in nursing education environments. To calculate individual item content validity index (I-CVI), the methods described by Polit and Beck (2006) were used. For each item, the number of reviewers who gave the question a rating of either a 3 or 4 on a 4-point Likert scale was divided by the total number of reviewers. The range of I-CVI ranged from 0.33 to 1.0 for both scales. The scale content validity index (S-CVI) was determined by adding all the I-CVIs for each scale and dividing by the number of items in the scale. Expert responses indicated an S-CVI of 0.89 for the classroom setting scale and 0.90 for the clinical environment scale.

Based on the responses from the expert review panel, two items from the GENES were deleted (one from the classroom setting and one from the clinical environment). Additionally, there were minor wording changes made to several of the items in both the classroom setting and clinical environment scales. After the recommended changes and editing from the expert review panel was complete, the final I-CVI classroom setting scale items ranged from 0.67 to 1.00 and the I-CVI clinical environment scale items ranged from 0.60 to 1.00. The final S-CVI for the classroom setting scale was 0.91 and for the clinical environment scale was 0.93.

The recommendation for CVI for items and scales is above a 0.80 (Polit & Beck, 2006). After the revisions, S-CVI is above this threshold. However, individual I-CVI fall below the

threshold. For the classroom setting items, one item fell below the accepted threshold. A minor change to wording was made on this item based on the recommendations from reviewers and the item was retained. Similarly, with the clinical environment items, one item fell below the accepted threshold. Again, recommended changes to wording were made on this item and the decision was made to include the item in the scale.

The tool was formally piloted using a convenience sample of students from the two identified schools (Indiana University of Pennsylvania and East Stroudsburg University). An IRB approval for piloting and administration of the GENEQ was obtained from both institutions. Reliability data was obtained from the piloting of the tool in early fall 2011. The GENES responses from the initial two schools were analyzed to provide reliability data for the instrument using Cronbach's alpha coefficient. Analysis for reliability of the Classroom Setting GENES yielded a .728 Cronbach's alpha coefficient, the Clinical Environment GENES yielded a .85 Cronbach's alpha, and the Total GENES returned a .884 Cronbach's alpha. The results of the Cronbach's alpha coefficient tests on the pilot data indicated that both the subscales and the overall GENES have good internal consistency reliability as a Cronbach's alpha coefficient greater than .7 is considered acceptable (Pallant, 2007). The responses from the pilot study were also included in the final sample analysis.

Further administration of the GENEQ commenced at the venues and schools identified in the sampling plan after reliability analysis of the pilot data. Administration of the final GENEQ and gathering of study data occurred from spring 2012 through spring 2013 until the required number of male student participants was obtained. The final GENEQ tool was used to collect all data for the pilot and subsequent study data via Qualtrics and paper-and-pencil administration of the questionnaire.

As Heger (1996) indicated, the use of software for the administration and analysis of questionnaires provides a practical and low cost option for educators and researchers. The GENEQ was conceived and developed with the specific intent of using a web-based survey tool. As IUP already holds license to Qualtrics, no additional cost were incurred for administration or analysis of the data using Qualtrics. The specific parameters for participation were iterated on the individual business cards distributed to provide access to the website with the survey link. The pilot data was collected and analyzed by the Qualtrics software for descriptive analysis before the data set was exported to SPSS for additional descriptive and statistical testing as identified below. Web-based survey software technology offers a more efficient and cost effective mode to administer questionnaires as data is automatically collected and analyzed (Avery, Bryant, Mathios, Kang, & Bell, 2006). Additionally, the use of a web-based survey instrument may be more appealing to the technologically savvy students today. However, the return from the web-based survey administration did not meet projected numbers and the proposal was revised to include paper-and-pencil administration as well.

To protect against unknown or unforeseen risks and to ensure all ethical considerations are addressed, a proposal was submitted to the Indiana University of Pennsylvania IRB for approval of the study. Additional institutional IRB approvals or communications related to permission to conduct research were obtained, if required, for student participation at other defined institutions (see Appendix G). No known potential risks to study participants exist. Respondents had the opportunity to submit their names for a raffle drawing to be held at the end of data collection. Twelve $25 Amazon.com gift card – anticipated researcher cost of $300 – were raffled among entering respondents. After completing and submitting the GENEQ, participants were redirected to another website to enter the raffle for the incentive if completed

on-line, or via a separate entry page for on-site paper-and-pencil administration. Respondents entered their name and email address to participate in the raffle. No link existed from the raffle entry to the Qualtrics data submitted or to any paper-and-pencil questionnaire. The use of incentives has been shown to increase survey response rates and participation (Evangelista, Albaum, & Poon, 1999). The gift cards were purchased by the investigator and winning participants received notification of winning the raffle via the email address provided on the raffle entry form. The gift cards were purchased in the names of the raffle winners. Study participants received no other specific benefit for participation.

Participation in this study was voluntary and participants were free to decide not to participate in the study or to withdraw at any time without adversely affecting their relationship with the investigator, any instructor, any participating institution, or standing in their nursing education program. Access to the web-based questionnaire software provided an introductory text and informed consent page (see Appendix H). If a student chose to participate, all answers to the questionnaire submitted were anonymous. No identifying electronic or demographic information was requested. Willingness to participate in the study and receipt of informed consent was assumed with continuation to, and completion of, the on-line questionnaire. If a student chose not to participate in the on-line questionnaire, he/she could withdraw at any time by exiting the web-based program. Likewise, for the paper-and-pencil questionnaire, a letter of introduction and informed consent was provided before access to the questionnaire. Willingness to participate in the study and receipt of informed consent was assumed with completion of the questionnaire. Students returned completed questionnaires to a box at the front of the room. If a student chose to participate in the gift card raffle, the last page of the questionnaire was completed and placed in a separate box so that answers to the questionnaire could not be linked

to raffle participation information. If a student chose not to participate, no further response or action was required, and the student was asked to return the questionnaire to the box at the front of the room. All paper-and-pencil responses were entered into Qualtrics by the study investigator so that all data was contained in the Qualtrics database.

To ensure confidentiality, no identifying information was requested other than the generic demographic questions on the GENEQ. To maintain confidentiality and anonymity, no other personal identification information was solicited or used. Confidentiality of data was maintained via password protected access to the final database. Only the principal investigator, dissertation committee members, and system administrators had access to the data. All responses were held in strict confidence and maintained on a secured server or computer for three years or as otherwise required by individual or other entity mandate. Individual responses are not necessary for final analysis of data or publication of findings.

Analysis of data included examination of the independent variables: sex, age, race/ethnicity, marital status, school setting, choice of nursing career, and desired nursing specialty. Reflective of the literature on the latter two, choice of nursing career and desired nursing specialty were converted into gender-factored continuous variables representing a range of responses from non-masculine (low number) through gender neutral to masculine (high number). The effect of identified gender on the perception of gender equity in the nursing education environment was investigated as well as the overall and individual effect of the independent variables on the dependent variable, student perception of gender equity in nursing education. Finally, the relationship between student perception of gender equity in nursing education and the perceived impact on the educational environment was determined. The results of the analyses are presented in the following chapter.

CHAPTER 4

RESULTS

In this chapter, an overview of the analysis of study data is presented. Findings from the analysis of data will include a review of the total responses received on the GENEQ followed by descriptive statistics on participant demographic and independent variables. Next, findings related to the individual items in the GENES will be offered. After the individual item report, analysis of the GENES subscales will be presented followed by the total GENES scale findings. Finally, statistical analysis of the data related to each of the study questions will be presented including the independent samples t-test, multiple regression analysis, and Pearson product-moment correlation coefficient.

Sample Description

An overview of the total responses to the GENEQ is required before further analysis of data. A total of 622 responses to the GENEQ were received. Of the total number of participants, 51 were excluded for incomplete data or for not meeting sample criteria. Thirty-eight on-line participants were identified as incomplete by Qualtrics. These respondents were most likely individuals who accessed the on-line questionnaire and were unable to proceed due to connection or other technical difficulties or chose to withdraw from the study without completing the questionnaire. None of the responses identified as incomplete by Qualtrics contained answers to all questions, and most contained no data after the initial two questions. Thirteen paper-and-pencil participants were excluded related to incomplete questionnaires following the same criteria identified for the on-line questionnaires or omission of data related to inclusion criteria. The resulting total of 571 participant responses was used for statistical analysis.

Demographic and Independent Variables

The demographics and independent variables examined in the study include sex, age,

race/ethnicity, marital status, school setting, choice of nursing career, and desired nursing specialty. Descriptive statistics will be presented for each. Results will be reported on each of the characteristics or items included in the variable first. Then, findings related to the variable to be used for further statistical analysis of the study questions will be provided (e.g., descriptive statistics will be reported on the age variable for all respondents, and then as a dichotomous variable to be used for later analysis).

Sex

Of the total 571 study participants, 471 were female and 100 were male. The females represented 82.5% of study respondents and the males represented 17.5% of study respondents.

Age

Participants were asked to identify their year of birth by choosing a date on a scale from before 1984 inclusive to after 1992. Table 1 provides data on the reported birth years of study respondents. Conversion of the age variable to a dichotomous variable used the previously

Table 1

Frequency and Percent of Reported Birth Year

Reported Year	Age	Frequency	Percent
After 1992	19 or younger	1	0.2
1992	20	7	1.2
1991	21	180	31.5
1990	22	181	31.7
1989	23	50	8.8
1988	24	25	4.4
1987	25	18	3.2
1986	26	8	1.4
1985	27	8	1.4
1984	28	10	1.8
Before 1984	29 or older	75	13.1
Not reported		8	1.4
Total		571	100.0

identified National Center for Education Statistics (1997) criteria of 23 years old or greater (born in or before 1989) for the non-traditional student. The results of the analysis indicated 369 (65.5%) of respondents met the traditional student category criteria and 194 (35.5%) of respondents met the non-traditional student criteria. Eight respondents did not reply to the birth year question and were excluded from the report on the dichotomous age variable.

Race/Ethnicity

Respondents indicated racial or ethnic background from a list including American Indian or Alaskan Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Pacific Islander, Two or more races, and White. Table 2 provides data on the reported race/ethnicity of study respondents. When converted to a dichotomous variable for further statistical analysis, respondents were grouped into two categories – White and Non-White. The results of the conversion yielded 492 (86.2%) White and 79 (13.8%) Non-White.

Table 2

Frequency and Percent of Reported Race/Ethnicity

Race/Ethnicity	Frequency	Percent
American Indian or Alaskan Native	2	0.4
Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese)	18	3.2
Black or African American	22	3.9
Hispanic or Latino (Mexican, Puerto Rican, Cuban)	20	3.5
Native Hawaiian or Pacific Islander	2	0.4
Two or more races	15	2.6
White	492	86.2
Total	571	100.0

Marital Status

Choices for marital status included single, married, separated, divorced, and widowed. Table 3 provides data on reported marital status of respondents. The marital status responses were converted to a dichotomous variable with 484 (84.8%) remaining in the single category and 87 (15.2%) grouped into a married or previously married category which included married, separated, divorced, and widowed respondents.

Table 3

Frequency and Percent of Reported Marital Status

Marital Status	Frequency	Percent
Single	484	84.8
Married	59	10.3
Separated	10	1.8
Divorced	17	3.0
Widowed	1	0.2
Total	571	100.0

School Setting

Respondents indicated which PHENSA school in Pennsylvania they attended. Of the 43 PHENSA schools, a total of 15 (34.9%) schools were represented in the final data set. Table 4 provides data on respondents' indicated PHENSA schools. The school variable was converted to a dichotomous variable based on the location of the program with respondents from schools being within a Level A Metropolitan Statistical Area (MSA), as defined by the 2010 Standards for Delineating Metropolitan and Micropolitan Statistical Areas (2010) and the Pennsylvania

Department of Public Welfare (2012), grouped into an MSA school category and respondents from other schools grouped into a non-MSA school category. The results indicated 208 (36.4%) respondents attended MSA schools and 363 (63.6%) attended non-MSA schools.

Table 4

Frequency and Percent of Respondents from Identified Participating PHENSA Schools

PHENSA School	Frequency	Percent
Alvernia University	8	1.4
Bloomsburg University	65	11.4
Carlow University	2	0.4
Cedar Crest College	97	17.0
DeSales University	8	1.4
Drexel University	53	9.3
East Stroudsburg University of Pennsylvania	37	6.5
Edinboro University of Pennsylvania	8	1.4
Indiana University of Pennsylvania	108	18.9
Marywood University	20	3.5
Saint Francis University	1	0.2
The Pennsylvania State University	11	1.9
University of Pennsylvania	45	7.9
West Chester University of Pennsylvania	41	7.2
Widener University	67	11.7
Total	571	100.0

Note: Schools included in the MSA category include Carlow University, Drexel University, University of Pennsylvania, West Chester University of Pennsylvania, and Widener University.

Choice of Nursing Career

Respondents were provided with a list of 11 reasons for choosing nursing as a career and asked to indicate the importance of each on their choice to pursue nursing via a five-point Likert scale ranging from not at all important to extremely important. Table 5 provides data on the reported influence of each reason on choice of nursing career. The top three choices indicated as an extremely important influence on choice of nursing as a career included desire to help people, (N = 570, M = 4.73, SD = 0.527); growth profession with multiple career paths, (N = 570, M = 4.45, SD = 0.720); and career stability, (N = 571, M = 4.44, SD = 0.679). Influence by parents, (N = 571, M = 2.57, SD = 1.520); available scholarships or funding for school, (N = 571, M = 2.70, SD = 1.292); and family member/friend in nursing, (N = 569, M = 2.94, SD = 1.332) were deemed the least important influential factors on choice of nursing as a career.

Table 5

Mean Scores for Influence of Reason on Choice of Nursing as Career

Reason	Masculinity Score	*N*	*M*	*SD*
Available scholarships or funding for school	1	571	2.70	1.292
Benefits	2	569	3.62	0.967
Career stability	3	571	4.44	0.679
Desire to help people	3	570	4.73	0.527
Family member/friend in nursing	1	569	2.94	1.332
Growth profession with multiple career paths	3	570	4.45	0.720
Influence by parents	1	571	2.57	1.233
Lifelong ambition	1	571	3.76	1.120
Salary	2	571	3.80	0.863
Schedule flexibility	2	569	3.86	0.959
Variety of geographic career choices	3	571	4.06	1.013

Note: Variation in the sample size is due to unreported data.

For further analysis, the 11 reasons influencing choice of nursing career were converted into one continuous variable representing a gender-factored choice for use in the multiple regression model. The gender-factored choice used two numbers – a masculinity score derived from the Bernard Hodes Group (2005) report (ranging from 1 to 3) and the extent of influence chosen by the respondent (ranging from one to five). The top responses to factors influencing choice of nursing as a career reported by male nurses in the Bernard Hodes Group (2005) study were assigned a masculinity score of 3 and included desire to help people, growth profession with many career paths, career stability, and a variety of geographic career choices. The middle responses from the Bernard Hodes Group (2005) study were assigned a masculinity score of 2 and included salary, benefits, and schedule flexibility. The remaining four responses were assigned a masculinity score of 1. The masculinity score and the extent of influence on choice of nursing as a career reported by each respondent were multiplied to provide a gender-factored response. The gender-factored responses were then added to create the gender-factored choice variable with a potential range from 22 to 110. The actual gender-factored choice scores ranged from 34 to 110 ($N = 563$, $M = 87.62$, $SD = 10.4$). Figure 1 provides a histogram of the distribution of the gender-factored choice scores by frequency.

Desired Nursing Specialty

Respondents were asked to indicate their likelihood of pursing work after graduation in each of 16 identified nursing specialties. Table 6 provides data on the reported likelihood to pursue work in a specific nursing specialty. The three nursing specialties identified by respondents as being those in which they were most likely to pursue work included: critical care nurse, ($N = 568$, $M = 3.67$, $SD = 1.189$); nurse practitioner, ($N = 569$, $M = 3.53$, $SD = 1.249$); and emergency room nurse ($N = 569$, $M = 3.35$, $SD = 1.244$). Rehabilitation nurse, ($N = 570$, $M = 2.09$, $SD = 1.090$);

psychiatric nurse, (N = 571, M =2.18, SD = 1.263); and nurse educator, (N = 570, M = 2.71, SD = 1.245) were the three nursing specialties identified by respondents as being those in which they were least likely to pursue work.

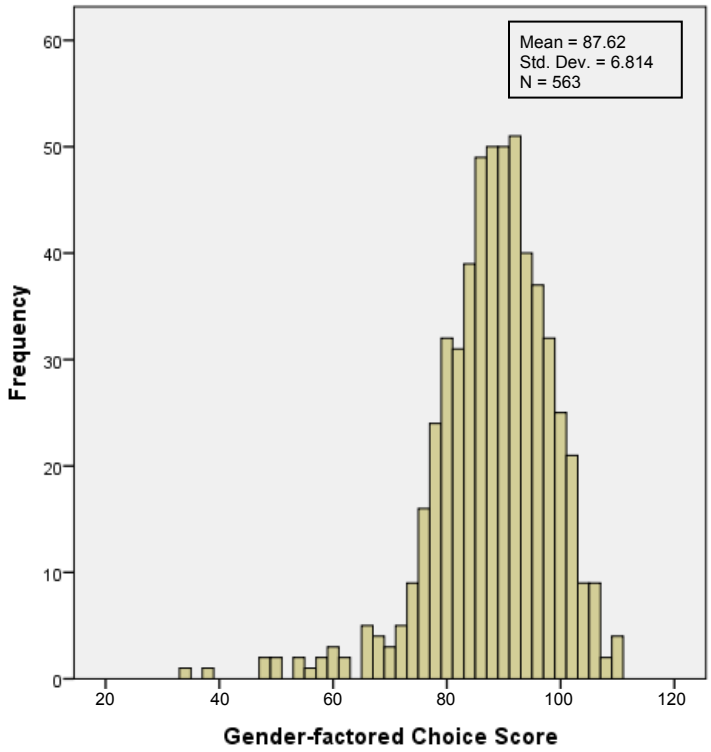

Figure 1. Histogram of Gender-factored Choice Scores and Frequencies

Similar to choice of nursing career, the responses to desired nursing specialty were converted into one continuous variable representing a gender-factored nursing specialty for use in the multiple regression model. The gender-factored nursing specialty used two numbers – a masculinity score derived from the Bernard Hodes Group (2005) report (ranging from 1 to 3) and the likelihood of pursuing work in the indicated specialty provided by the respondent (ranging from 1 to 5). The top responses for nursing specialty from the Bernard Hodes Group (2005) study were assigned a score of 3 and included critical care nurse, emergency department nurse, medical/surgical nurse, nursing management, and nurse educator. The middle responses from

Table 6

Mean Scores for Reported Likelihood to Pursue Work in Nursing Specialty

Nursing Specialty	Masculinity Score	*N*	*M*	*SD*
Clinical Nurse Specialist	2	568	2.99	1.145
Critical Care Nurse	3	568	3.67	1.189
Director/Executive Level Nurse	2	567	2.72	1.096
Emergency Department Nurse	3	569	3.35	1.244
Medical/Surgical Nurse	3	570	3.23	1.260
Nurse Anesthetist	1	566	2.75	1.356
Nurse Educator	3	570	2.71	1.245
Nurse Practitioner	2	569	3.53	1.249
Nursery / Neonatal Intensive Care Unit (PICU) Nurse	1	571	3.05	1.449
Nursing Management	3	571	2.74	1.178
Obstetrics/Gynecology (OB/GYN) Nurse	1	571	2.76	1.470
Oncology Nurse	1	570	2.75	1.207
Operating Room/Post Anesthesia Care Unit (PACU) Nurse	2	569	2.81	1.211
Pediatric Nurse	2	571	3.18	1.452
Psychiatric Nurse	2	571	2.18	1.263
Rehabilitation Nurse	1	570	2.09	1.090

Note: Variation in the sample size is due to unreported data.

the Bernard Hodes Group (2005) study were assigned a score of 2 and included clinical nurse specialist, director/executive level nurse, nurse practitioner, operating room/post anesthesia care unit nurse, pediatric nurse, and psychiatric nurse. The remaining responses were assigned a score of 1. The two numbers (masculinity score and likelihood to pursue specialty) for each respondent were multiplied and the products added to create a gender-factored specialty score

with a potential range from 32 to 160 with higher numbers indicating more masculine nursing specialties. The resulting gender-factored specialty scores ranged from 40 to 160 ($N = 548$, $M = 95.32$, $SD = 15.496$). Figure 2 provides a histogram of the distribution of the gender-factored specialty scores by frequency.

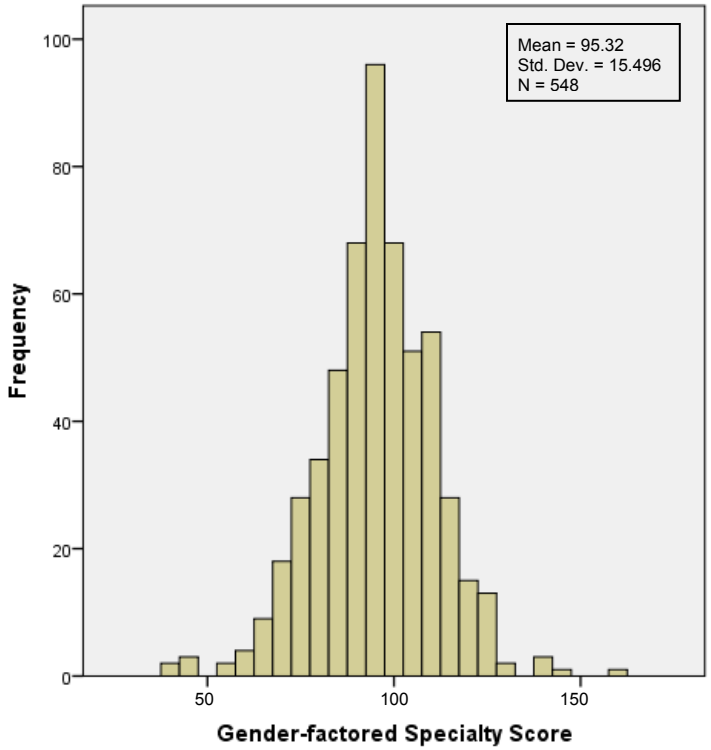

Figure 2. Histogram of Gender-factored Specialty Scores and Frequencies

GENES

The GENES responses were first analyzed to provide reliability data for the tool using Cronbach's alpha coefficient. Analysis for reliability of the Classroom Setting GENES yielded a .75 Cronbach's alpha coefficient, the Clinical Environment GENES yielded a .78 Cronbach's alpha, and the Total GENES was .84. The results of the Cronbach's alpha coefficient tests indicated that both the subscales and the overall GENES have good internal consistency reliability. A Cronbach's alpha coefficient greater than .7 is considered acceptable (Pallant, 2007).

After analysis for reliability data, individual responses were examined for degree of gender equity identified by respondents. Each item received a rating on a scale of one to five from the participant responses with the highest number indicating the most gender-equitable response. A review of the scores on the individual items for each subscale will be followed by the overall score for the subscale and then for the total GENES.

Classroom Setting

The classroom setting subscale of the GENES included 15 items. Table 7 provides descriptive statistics for each item of the subscale. The three items with the highest gender equity scores on a five-point Likert scale indicating a more equitable treatment of males and females in the classroom setting included: because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions (reverse-scored for analysis) (N = 571, M = 4.76, SD = 0.561); nursing faculty made the classroom a welcoming environment for both genders (N = 570, M = 4.52, SD = 0.692); and nursing instructors created different or altered assignments and/or requirements based on student gender (reverse-scored for analysis) (N = 571, M = 4.39, SD = 0.915). Alternatively, nursing faculty included reference to the contributions of men in the history of nursing (N = 571, M = 2.25, SD = 1.018); textbooks referred to nurses with a feminine pronoun (N = 569, M = 3.24, SD = 1.014), and nursing faculty encouraged dissent or counterpoints to presented information during classroom discussions (N = 568, M = 3.36, SD = 0.888) received the lowest gender equity scores indicating students experienced or viewed the item as being less gender equitable in the classroom setting.

Table 7

Descriptive Statistics for GENEQ Classroom Subscale Items

Classroom Setting Items	*N*	*M*	*SD*
Female anatomy and physiology were adequately addressed in the classroom	569	3.94	0.753
Nursing instructors created different or altered assignments and/or requirements based on student gender[a]	571	4.39	0.915
Information in nursing textbooks represented male and female genders equally	569	3.99	0.887
Nursing faculty encouraged dissent or counterpoints to presented information during classroom discussions	568	3.36	0.888
Nursing faculty interacted differently in the classroom environment based on gender[a]	569	4.09	0.952
Nursing lectures and instructions represented male and female gender equally	570	3.91	0.939
Nursing faculty included reference to the contributions of men in the history of nursing	571	2.25	1.018
Male anatomy and physiology were adequately covered in the classroom	570	3.73	0.890
I encountered differential treatment in the nursing classroom environment based on my gender[a]	571	4.31	0.968
Textbooks referred to nurses with a feminine pronoun[a]	569	3.24	1.014
Nursing faculty exhibited supportive behaviors in the classroom environment for all students	570	4.26	0.749
Because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions[a]	571	4.76	0.561
Nursing faculty made the classroom a welcoming environment for both genders	570	4.52	0.692
Gender bias was evident during nursing lectures and instruction[a]	571	4.23	0.895
Nursing faculty included reference to the contributions of women in the history of nursing	570	4.27	0.696

Note: Variation in the sample size is due to unreported data. Higher score indicates more gender-equitable item.
[a]This item is a negatively-worded item and was reverse-scored for all data analysis and tables.

Table 8 shows data related to the perceived impact on the educational experience for each of the items in the classroom setting subscale. The three classroom setting items deemed to have the most positive impact on the educational environment included: nursing faculty made the classroom a welcoming environment for both genders ($N = 571$, $M = 4.24$, $SD = 0.793$); nursing faculty exhibited supportive behaviors in the classroom environment for all students ($N = 571$, $M = 4.10$, $SD = 0.870$); and female anatomy and physiology were adequately addressed in the classroom ($N = 571$, $M = 3.76$, $SD = 0.679$). The three items identified as having a more negative impact on the educational environment included: nursing faculty included reference to the contributions of men in the history of nursing ($N = 571$, $M = 2.93$, $SD = 0.834$); textbooks referred to nurses with a feminine pronoun ($N = 568$, $M = 2.99$, $SD = 0.775$), and nursing instructors created different or altered assignments and/or requirements based on student gender ($N = 570$, $M = 3.28$, $SD = 0.903$).

A total gender equity score for the classroom setting subscale was obtained by summing the individual item responses in the subscale for each participant into a total classroom subscale gender equity score. The resulting number could range from 15 to 75. The actual range for the total classroom subscale gender equity score was 36 to 74 ($N = 556$, $M = 59.29$, $SD = 6.132$). Figure 3 provides a histogram of the distribution of the total classroom subscale gender equity scores by frequency.

Similarly, a total classroom subscale impact score was obtained by summing the individual item responses in the subscale for each participant into a total classroom subscale impact score. The resulting number could range from 15 to 75. The actual range for the total classroom subscale impact scores was 29 to 75 ($N = 557$, $M = 53.22$, $SD = 7.205$). Figure 4 provides a histogram of the distribution of total classroom subscale impact scores by frequency.

Table 8

Descriptive Statistics for GENEQ Classroom Subscale Items Impact on Educational Environment

Classroom Setting Items	*N*	*M*	*SD*
Female anatomy and physiology were adequately addressed in the classroom	571	3.76	0.679
Nursing instructors created different or altered assignments and/or requirements based on student gender	570	3.28	0.903
Information in nursing textbooks represented male and female genders equally	569	3.71	0.792
Nursing faculty encouraged dissent or counterpoints to presented information during classroom discussions	568	3.50	0.829
Nursing faculty interacted differently in the classroom environment based on gender	569	3.32	0.984
Nursing lectures and instructions represented male and female gender equally	570	3.68	0.852
Nursing faculty included reference to the contributions of men in the history of nursing	571	2.93	0.834
Male anatomy and physiology were adequately covered in the classroom	570	3.55	0.808
I encountered differential treatment in the nursing classroom environment based on my gender	570	3.38	1.044
Textbooks referred to nurses with a feminine pronoun	568	2.99	0.775
Nursing faculty exhibited supportive behaviors in the classroom environment for all students	571	4.10	0.870
Because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions	570	3.64	1.126
Nursing faculty made the classroom a welcoming environment for both genders	571	4.24	0.793
Gender bias was evident during nursing lectures and instruction	571	3.41	1.079
Nursing faculty included reference to the contributions of women in the history of nursing	570	3.66	0.746

Note: Variation in the sample size is due to unreported data. Higher score indicates a more positive impact.

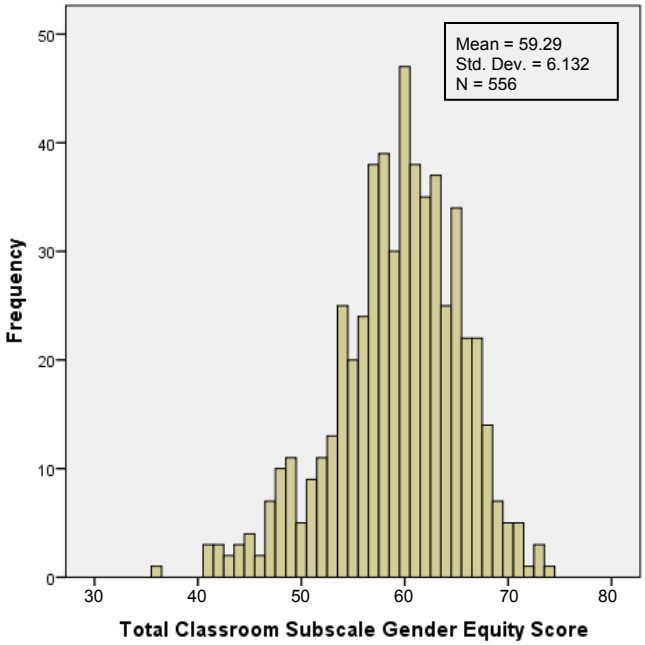

Figure 3. Histogram of Total Classroom Subscale Gender Equity Scores and Frequencies

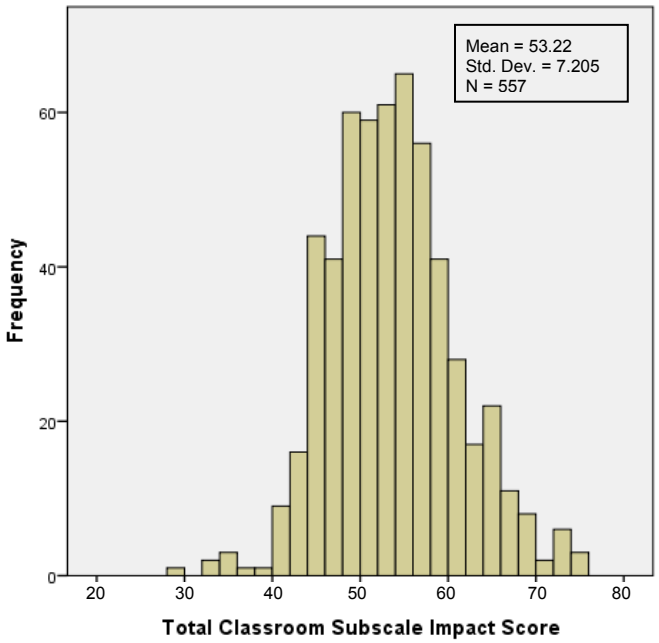

Figure 4. Histogram of Total Classroom Subscale Impact Scores and Frequencies

Clinical Environment

The clinical environment subscale of the GENES included 14 items. Table 9 provides data related to the gender equity score as well as descriptive statistics related to each item of the subscale. The three items with the highest gender equity scores on a five-point Likert scale indicating a more equitable treatment of males and females in the clinical environment included: clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences (reverse-scored for analysis) ($N = 571$, $M = 4.60$, $SD = 0.736$); a patient refused care based on my gender ($N = 571$, $M = 4.54$, $SD = 0.781$); and clinical faculty exhibited supportive behaviors during my clinical experiences to both genders ($N = 570$, $M = 4.49$, $SD = 0.666$). Alternatively, I encountered gender specific terminology during my clinical experiences (reverse-scored for analysis) ($N = 569$, $M = 3.17$, $SD = 1.014$); I experienced gender bias during my clinical experience (reverse-scored for analysis) ($N = 571$, $M = 3.74$, $SD = 1.143$); and I encountered no differential treatment in the clinical environment based on my gender ($N = 568$, $M = 3.86$, $SD = 1.339$) received the lowest gender equity scores indicating students experienced or viewed the item as being less gender equitable in the clinical environment.

Table 10 shows data related to the perceived impact on the education experience for each of the items in the clinical environment subscale. The three clinical environment items deemed to have the most positive impact on the educational environment included: clinical faculty exhibited supportive behaviors during my clinical experiences to both genders ($N = 569$, $M = 4.19$, $SD = 0.746$); I felt prepared to provide care for members of the opposite sex ($N = 571$, $M = 3.97$, $SD = 0.857$); and I encountered no differential treatment in the clinical environment based on my gender ($N = 570$, $M = 3.78$, $SD = 0.905$). The three items in the clinical environment subscale identified as having a more negative impact on the educational environment included:

I experienced gender bias during my clinical experience ($N = 571$, $M = 2.81$, $SD = 0.944$); I encountered gender specific terminology during my clinical experience ($N = 570$, $M = 3.14$, $SD = 0.744$), and I feared accusations of inappropriate conduct when caring for patients of the opposite sex ($N = 570$, $M = 3.21$, $SD = 0.974$).

Table 9

Descriptive Statistics for GENEQ Clinical Environment Subscale Items

Clinical Environment Items	*N*	*M*	*SD*
Clinical faculty created different or altered assignments and/or requirements based on student gender[a]	571	4.29	0.911
I felt prepared to provide care for members of the opposite sex	570	4.25	0.801
Patient assignments were changed based on student gender[a]	571	4.17	0.845
Clinical faculty exhibited supportive behaviors during my clinical experiences to both genders	570	4.49	0.666
I experienced feelings of inadequacy in caring for members of the opposite sex[a]	571	4.12	0.848
I worked with a clinical faculty member of the same sex during my clinical rotations	570	3.94	1.277
I feared accusations of inappropriate conduct when caring for patients of the opposite sex[a]	570	4.41	0.819
I encountered no differential treatment in the clinical environment based on my gender	568	3.86	1.339
I was prevented from performing the full range of caring interventions for a patient of the opposite sex[a]	570	4.41	0.825
Clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences[a]	571	4.60	0.736
A patient refused care based on my gender[a]	571	4.54	0.781
I had the opportunity to work with a nurse mentor of the same sex during my clinical experiences	569	3.90	1.168
I encountered gender specific terminology during my clinical experience[a]	569	3.17	1.014
I experienced gender bias during my clinical experience[a]	571	3.74	1.143

Note: Variation in the sample size is due to unreported data.
[a]This item is a negatively-worded item and was reverse-scored for all data analysis and tables.

Table 10

Descriptive Statistics for GENEQ Clinical Environment Subscale Items Impact on Educational Environment

Clinical Environment Items	*N*	*M*	*SD*
Clinical faculty created different or altered assignments and/or requirements based on student gender	571	3.31	0.979
I felt prepared to provide care for members of the opposite sex	571	3.97	0.857
Patient assignments were changed based on student gender	570	3.38	0.970
Clinical faculty exhibited supportive behaviors during my clinical experiences to both genders	569	4.19	0.746
I experienced feelings of inadequacy in caring for members of the opposite sex	570	3.32	1.001
I worked with a clinical faculty member of the same sex during my clinical rotations	570	3.44	0.841
I feared accusations of inappropriate conduct when caring for patients of the opposite sex	570	3.21	0.974
I encountered no differential treatment in the clinical environment based on my gender	570	3.78	0.905
I was prevented from performing the full range of caring interventions for a patient of the opposite sex	571	3.38	1.058
Clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences	569	3.49	1.107
A patient refused care based on my gender	569	3.37	1.122
I had the opportunity to work with a nurse mentor of the same sex during my clinical experiences	569	3.59	0.876
I encountered gender specific terminology during my clinical experience	570	3.14	0.744
I experienced gender bias during my clinical experience	571	2.81	0.944

Note: Variation in the sample size is due to unreported data.

A total gender equity score for the clinical environment subscale was obtained by summing the individual item responses in the subscale for each participant into a total clinical

subscale gender equity score. The resulting number could range from 14 to 70. The actual range for the total clinical subscale gender equity scores was 31 to 69 ($N = 559$, $M = 57.94$, $SD = 6.814$). Figure 5 provides a histogram of the distribution of total clinical subscale gender equity scores by frequency.

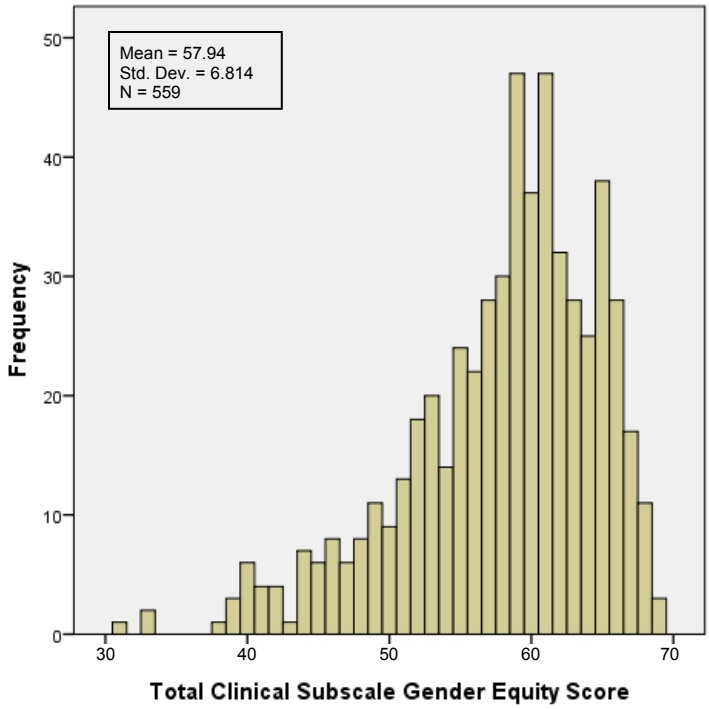

Figure 5. Histogram of Total Clinical Subscale Gender Equity Scores and Frequencies

Similarly, a total clinical subscale impact score was obtained by summing the individual item responses in the clinical subscale for each participant into a total clinical subscale impact score. The resulting number could range from 14 to 70. The actual range for the total clinical subscale impact scores was 29 to 67 ($N = 559$, $M = 48.39$, $SD = 7.273$). Figure 6 provides a histogram of the distribution of total clinical subscale impact scores by frequency.

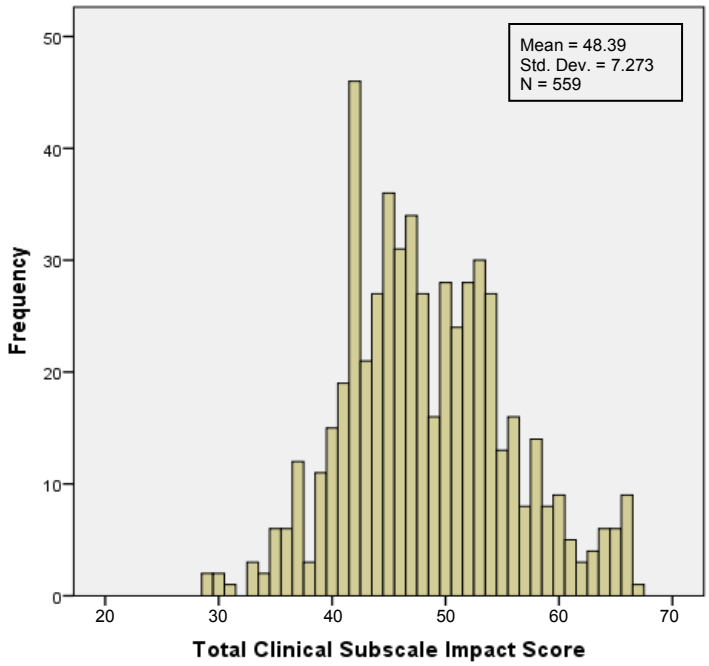

Figure 6. Histogram of Total Clinical Subscale Impact Scores and Frequencies

Total GENES

A total gender equity score was derived by adding the total classroom subscale gender equity scores and the total clinical subscale gender equity scores. Likewise, a total impact score consisted of the sum of the total classroom subscale impact scores and the total clinical subscale impact scores. The possible range for the total gender equity score and the total impact score was 29 to 145. Figure 7 presents a histogram of the total gender equity scores with a range from 78 to 139 ($N = 545$, $M = 117.31$, $SD = 11.192$) by frequency and Figure 8 presents a histogram of the total impact scores with a range from 70 to 141 ($N = 548$, $M = 101.68$, $SD = 13.21$) by frequency.

The preceding pages provide an overview of the analysis of the sample and variables in the study. In the following pages, further statistical analysis related to tests to investigate the research questions will be provided.

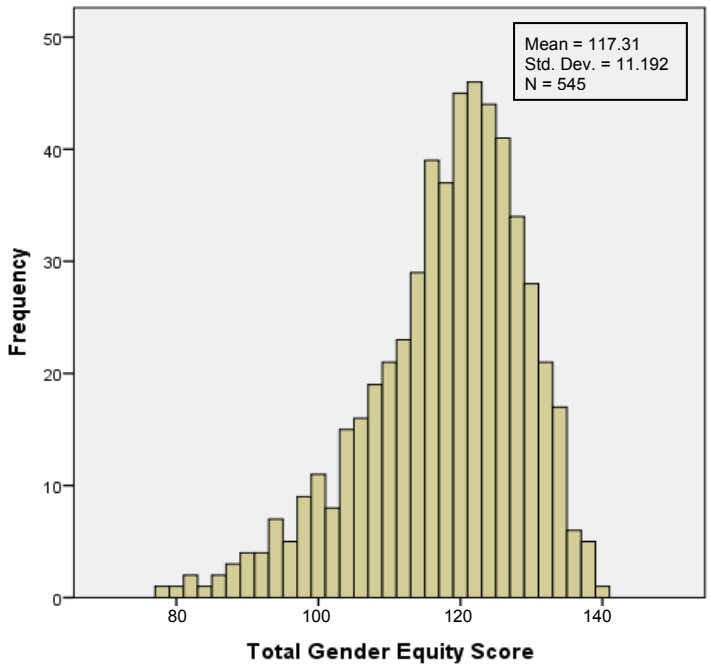

Figure 7. Histogram of Total Gender Equity Scores and Frequencies

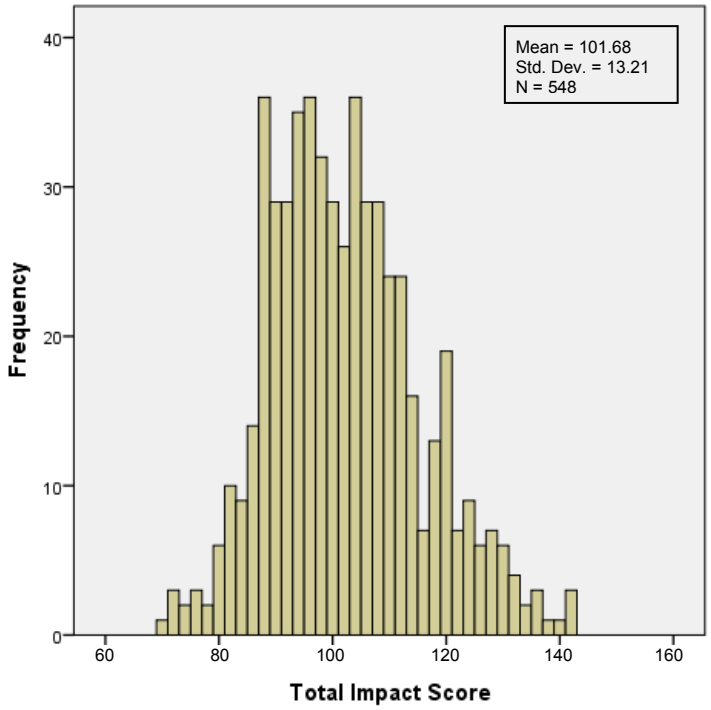

Figure 8. Histogram of Total Impact Scores and Frequencies

Research Questions

In the following pages, the results of the statistical analyses related to the research questions will be presented. The analyses related to the study questions require more complex statistical tests and may rely on the descriptive statistics previously presented to meet specific assumptions related to the data. A discussion of the specific statistical test, the assumptions associated with the test, and the variables included will be provided for each of the study questions.

Question 1 – What is the Effect of Identified Gender on Student Perception of Gender Equity in Nursing Education?

An independent samples *t*-test was used to compare the difference between identified male and female scores related to their perception of gender equity issues in the classroom setting and clinical environment. Further analysis of the difference between identified male and female scores related to each of the subscale total scores and the total gender equity score was also completed.

Several general assumptions are associated with parametric techniques like the independent samples *t*-test. In parametric approaches, the dependent variable should be measured using a continuous scale rather than discrete categories. The dependent variable of gender equity meets this assumption in that individual item responses were rated on a Likert scale and the subscale and total responses use the sum of individual responses providing a continuous scale rating on gender equity from least gender equitable to most gender equitable. Random sampling is also assumed when using parametric techniques, however, as Pallant (2007) points out, "this is often not the case in real-life research." (p. 203). Another assumption for the *t*-test is that individual responses are not influenced by any other observation or measurements. One of the assumptions related to data collection was that each respondent worked independently without influence from any other in answering the study questions. Therefore, the data should meet the requirements of this assumption.

Another assumption associated with parametric techniques is that of normal distribution. The histograms of the variables do not indicate a normal distribution. However, with large sample sizes, a violation of this assumption should not cause any problems (Pallant, 2007). The final assumption related to independent samples *t*-tests is homogeneity of variance. This assumption indicates equal variances in the scores among each of the subgroups. In SPSS, the Levene's test for equality of variances is part of the *t*-test analysis and in cases where Levene's test indicates that equal variances in the scores do not exist, the *t*-test for equal variances not assumed is reported.

Table 11 provides the *t*-test statistics for the classroom setting subscale. Of the 15 items in the subscale, eight items yielded a significant difference ($p < .05$) between male and female scores. Male and female responses differed significantly for specific items related to faculty treatment of students including nursing instructors created different or altered assignments and/or requirements based on student gender, $t\ (127.8) = 2.483$, $p = .014$; I encountered differential treatment in the nursing classroom environment based on my gender, $t\ (125.8) = 6.303$, $p < .001$; and because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions, $t\ (123.4) = 2.852$, $p = .005$. In regards to classroom resources, male and female responses differed significantly in areas including information in textbooks represented male and female genders equally, $t\ (128.8) = 2.804$, $p = .006$ and textbooks referred to nurses with a feminine pronoun, $t\ (567) = 2.791$, $p = .005$. In regard to teaching and lectures, male and female respondents differed significantly in the response to nursing faculty included reference to the contributions of men in the history of nursing, $t\ (150.6) = 3.627$, $p < .001$; male anatomy and physiology were adequately covered in the classroom, $t\ (128.3) = 2.118$, $p = .036$; and gender bias was evident during nursing lectures and instruction, $t\ (569) = 3.469$, $p = .001$.

Table 11

T-test Statistics for GENEQ Classroom Setting Subscale Items

	Female			Male						95% CI	
	N	*M*	*SD*	*N*	*M*	*SD*	*t*	*Df*	*P* (2-tailed)	*LL*	*UL*
Female anatomy and physiology were adequately addressed in the classroom	469	3.93	0.753	100	3.98	0.752	-0.633	567	.527	-0.22	0.11
Nursing instructors created different or altered assignments and/or requirements based on student gender[a]	471	4.44	0.870	100	4.15	1.077	2.483	127.8	**.014**	0.06	0.51
Information in nursing textbooks represented male and female genders equally	469	4.05	0.845	100	3.74	1.031	2.804	128.8	**.006**	0.09	0.53
Nursing faculty encouraged dissent or counterpoints to presented information during classroom discussions	470	3.38	0.892	98	3.26	0.865	1.298	566	.195	-0.06	0.32
Nursing faculty interacted differently in the classroom environment based on gender[a]	469	4.13	0.920	100	3.92	1.079	1.792	131.4	.075	0.00	0.41
Nursing lectures and instructions represented male and female gender equally	470	3.94	0.921	100	3.74	1.011	1.847	136.1	.067	-0.01	0.42
Nursing faculty included reference to the contributions of men in the history of nursing	471	2.32	1.019	100	1.93	0.956	3.627	150.6	**.000**	0.18	0.60
Male anatomy and physiology were adequately covered in the classroom	471	3.77	0.855	99	3.54	1.023	2.118	128.3	**.036**	0.04	0.43
I encountered differential treatment in the nursing classroom environment based on my gender[a]	471	4.44	0.878	100	3.69	1.125	6.303	125.8	**.000**	0.52	0.99
Textbooks referred to nurses with a feminine pronoun[a]	469	3.29	0.994	100	2.98	1.073	2.791	567	**.005**	0.09	0.53
Nursing faculty exhibited supportive behaviors in the classroom environment for all students	470	4.26	0.754	100	4.29	0.729	-0.369	568	.712	-0.19	0.13
Because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions[a]	471	4.80	0.520	100	4.59	0.698	2.852	123.4	**.005**	0.06	0.36
Nursing faculty made the classroom a welcoming environment for both genders	471	4.54	0.704	99	4.45	0.627	1.080	568	.280	-0.07	0.23
Gender bias was evident during nursing lectures and instruction[a]	471	4.29	0.856	100	3.95	1.019	3.469	569	**.001**	0.15	0.53
Nursing faculty included reference to the contributions of women in the history of nursing	471	4.24	0.710	99	4.37	0.616	-1.687	568	.092	-0.28	0.02
Total Class	461	59.84	5.902	95	56.61	6.543	4.767	554	**.000**	1.90	4.56

Note: Variation in the sample size is due to unreported data. Bold face numbers indicate significant findings ($p < .05$).
CI = confidence interval; LL = lower limit; UL = upper limit.
[a]This item is a negatively-worded item and was reverse-scored for all data analysis and tables.

An independent samples *t*-test was also conducted to compare the total classroom setting subscale scores for males and females. A significant difference in scores for males ($M = 56.61$, $SD = 6.54$) and females ($M = 59.84$, $SD = 5.90$) resulted, $t\ (554) = 4.767$, $p < .001$ (two-tailed). The magnitude of the differences in the means (mean difference = 3.23, 95% CI: 1.90 to 4.56) was small to moderate (eta squared = .039) (Pallant, 2007).

Table 12 provides the *t*-test statistics for the clinical environment subscale. Of the 14 items in the subscale, all but one of the items yielded a significant difference ($p < .05$) between male and female scores. In the area of clinical faculty behaviors, a significant difference was found for: clinical faculty created different or altered assignments and/or requirements based on student gender, $t\ (130.4) = 2.659$, $p = .009$; patient assignments were changed based on student gender, $t\ (131.8) = 4.536$, $p < .001$; and clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences, $t\ (131.2) = 2.225$, $p = .028$. A significant difference between male and female scores was also found for items related to student activities and experiences: I felt prepared to provide care for members of the opposite sex, $t\ (568) = 3.624$, $p < .001$; I experienced feelings of inadequacy in caring for members of the opposite sex, $t\ (569) = 2.911$, $p = .004$; I worked with a clinical faculty member of the same sex during my clinical rotations, $t\ (125.6) = 20.490$, $p = .000$; I feared accusations of inappropriate conduct when caring for patients of the opposite sex, $t\ (117.5) = 4.312$, $p < .001$; I encountered no differential treatment in the clinical environment based on my gender, $t\ (566) = 4.502$, $p < .001$; I was prevented from performing the full range of caring interventions for a patient of the opposite sex, $t\ (124.7) = 1.114$, $p < .001$; a patient refused care based on my gender, $t\ (118) = 12.743$, $p < .001$; and I had the opportunity to work with a nurse mentor of the same sex during my clinical experiences, $t\ (567) = 26.980$, $p < .001$. In regard to the general clinical

environment, male and female scores differed significantly for: I encountered gender specific terminology during my clinical experiences, t (567) = 2.555, p = .011 and I experienced gender bias during my clinical experience, t (569) = 13.861, p < .001.

Table 12

T-test Statistics for GENEQ Clinical Environment Subscale Items

	Female			Male					p	95% CI	
	N	*M*	*SD*	*N*	*M*	*SD*	*T*	*df*	(2-tailed)	*LL*	*UL*
Clinical faculty created different or altered assignments and/or requirements based on student gender[a]	471	4.35	0.873	100	4.05	1.038	2.659	130.4	**.009**	0.08	0.52
I felt prepared to provide care for members of the opposite sex	470	4.31	0.756	100	3.99	0.948	3.624	568	**.000**	0.15	0.49
Patient assignments were changed based on student gender[a]	471	4.25	0.803	100	3.79	0.935	4.536	131.8	**.000**	0.26	0.66
Clinical faculty exhibited supportive behaviors during my clinical experiences to both genders	471	4.50	0.662	99	4.43	0.688	.848	568	.397	-0.08	0.21
I experienced feelings of inadequacy in caring for members of the opposite sex[a]	471	4.17	0.820	100	3.90	0.937	2.911	569	**.004**	0.09	0.45
I worked with a clinical faculty member of the same sex during my clinical rotations	470	4.36	0.851	100	1.97	1.096	20.490	125.6	**.000**	2.16	2.62
I feared accusations of inappropriate conduct when caring for patients of the opposite sex[a]	470	4.50	0.718	100	4.00	1.101	4.312	117.5	**.000**	0.27	0.72
I encountered no differential treatment in the clinical environment based on my gender	470	3.97	1.344	98	3.32	1.172	4.502	566	**.000**	0.37	0.95
I was prevented from performing the full range of caring interventions for a patient of the opposite sex[a]	470	4.59	0.681	100	3.54	0.892	11.114	124.7	**.000**	0.86	1.24
Clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences[a]	471	4.64	0.710	100	4.44	0.833	2.225	131.2	**.028**	0.02	0.38
A patient refused care based on my gender[a]	471	4.74	0.581	100	3.57	0.879	12.743	118	**.000**	0.99	1.35
I had the opportunity to work with a nurse mentor of the same sex during my clinical experiences	470	4.30	0.745	99	1.99	0.898	26.980	567	**.000**	2.14	2.48
I encountered gender specific terminology during my clinical experience[a]	469	3.22	1.014	100	2.94	0.983	2.555	567	**.011**	0.07	0.5
I experienced gender bias during my clinical experience[a]	471	4.00	0.978	100	2.49	1.040	13.861	569	**.000**	1.3	1.72
Total Clinical	463	59.92	4.977	96	48.37	6.363	16.759	120.2	**.000**	10.189	12.92

Note: Variation in the sample size is due to unreported data. Bold face numbers indicate significant findings (p < .05).
CI = confidence interval; LL = lower limit; UL = upper limit.
[a]This item is a negatively-worded item and was reverse-scored for all data analysis and tables.

An independent samples *t*-test was also conducted to compare the total clinical environment subscale scores for males and females. A significant difference in scores for males ($M = 48.38$, $SD = 6.36$) and females ($M = 59.93$, $SD = 4.98$) resulted, $t\ (120.2) = 16.759$, $p < .001$ (two-tailed). The magnitude of the differences in the means (mean difference = 11.55, 95% CI: 10.19 to 12.92) was large (eta squared = .335) (Pallant, 2007).

Finally, an independent samples *t*-test was conducted to compare the total gender equity scores for males and females. A significant difference in scores for males ($M = 105.05$, $SD = 11.55$) and females ($M = 119.77$, $SD = 9.36$) resulted, $t\ (114.9) = 11.420$, $p < .001$ (two-tailed). The magnitude of the differences in the means (mean difference = 14.71, 95% CI: 12.16 to 17.27) was large (eta squared = .194) (Pallant, 2007).

Question 2 -- What are the Major Predictors of Student Perception of Gender Equity in Nursing Education?

Standard multiple regression analysis was used to examine the relationship between the independent variables and total gender equity scores. Specifically, multiple regression was used to indicate which of the independent variables (gender, age, race/ethnicity, marital status, school setting, choice of nursing career, and desired nursing specialty) are the best predictors of total gender equity score.

The first requirement for multiple regression is an adequate sample size for generalizability of the results. The power analysis completed as part of the methodology of the research indicated a sample size requirement greater than 103 for seven independent variables. A total of 571 respondents (471 female, 100 male) are included for multiple regression analysis.

The relationship among the independent variables is also important in multiple regression. None of the independent variables can by highly correlated and none can be a subset

of another independent variable. Correlation statistics on the variables indicate the highest correlation between independent and dependent variables was -.491 and the highest correlation between independent variables was .357. Additionally, the tolerance values and variance inflation factors do not indicate that multicollinearity exists which supports the assumption that multiple correlations among variables do not exist.

Multiple regression is also sensitive to outliers. Outliers were identified during the multiple regression analysis using the casewise diagnostics and the Mahalanobis distances. Pallant (2007) indicates the critical value for the Mahalanobis distance with seven independent variables is 24.32. In the model, five cases were identified with Mahalanobis values greater than the critical value. Additionally, four cases were identified in the casewise diagnostics with standardized residual values above 3.0 or below –3.0. Pallant (2007) indicates that in a normally distributed sample, 1% of cases would be expected to fall outside the standardized residual values range. The four identified cases are within the expected findings. As no specific problem with the outlier data was identified, these cases were included in the multiple regression analysis. Additionally, the maximum value for the Cook's Distance is .031 indicating that the outlier cases do not have any undue influence on the results of the model as a whole (Pallant, 2007).

The remaining assumptions related to multiple regression analysis include normality, linearity, homoscedasticity, and independence of residuals. Figure 9 provides the normal probability plot (P-P) of the regression standardized residual. The reasonably straight diagonal line from the bottom left to the top right of the plot suggests no major deviations from normality. The scatterplot of the standardized residuals for the multiple regression analysis did not provide the expected rectangular distributed pattern for the standardized predicted value axis with two distinct groupings present. However, the groupings did meet expected findings of centralized

tendency for the standardized residuals. Given the previous finding of significant differences between male and female scores, scatterplots of the standardized residuals for the model were produced for all male respondents and all female respondents. These scatterplots show a more acceptable distribution for each group along the standardized predicted value axis and support the required assumptions for the analysis.

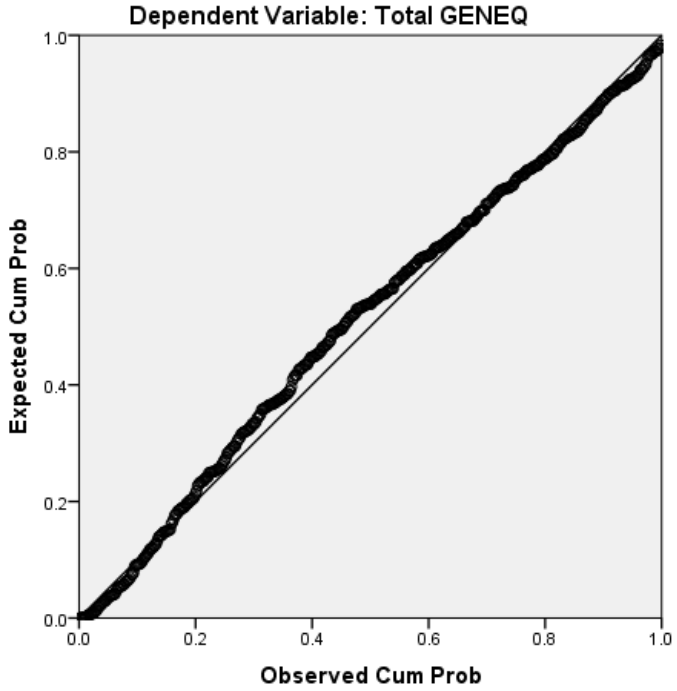

Figure 9. Normal Probability Plot of the Regression Standardized Residual

The variance in the total gender equity score explained by the model including gender, age, race, marital status, school setting, gender-factored choice of nursing and gender-factored choice of specialty is 24.7%, and the model reaches statistical significance, F (7, 515) = 24.073, $p < .001$. Of the variables included in the model, only gender made a statistically significant contribution (t = -12.680, B = -.491, $p < .001$) and represented 23.5% to the explanation of variance in the total gender equity score. Table 13 provides information on each of the variables in the model.

Table 13

Predictors of Total Gender Equity Score

Variable	*B*	95% CI
Gender (reference category = female)	-0.491**	[-16.68, -12.20]
Age (reference category = traditional)	0.008	[-1.74, 2.12]
Race (reference category = white)	0.048	[-0.92, 4.06]
Marital Status (reference category = single)	0.027	[-1.71, 3.39]
School Setting (reference category = MSA)	-0.025	[-2.36, 1.22]
Choice of Nursing Career	-0.034	[-0.12, 0.05]
Choice of Nursing Specialty	0.029	[-0.04, 0.08]

Note: CI = confidence interval. MSA = Metropolitan Statistical Area. $R^2 = 0.247$, $F\ (7, 515) = 24.073$**
**$p < .001$

Question 3 – What is the Relationship Between Student Perception of Gender Equity in Nursing Education and the Perceived Impact of Gender-based Issues on the Educational Experience?

The relationship between total gender equity scores and total impact scores was determined using Spearman's rank order correlation. Given the significant difference between male and female responses reported earlier, correlation statistics for gender equity scores and impact on educational environment scores were computed for all male and all female respondents for each of the subscales and total GENEQ as well. Spearman's rank order correlation is a non-parametric test used when examining two continuous variables and describes the strength and direction of the linear relationship between the variables.

Many of the assumptions related to the correlation statistic have been previously addressed including the level of measurement (continuous variables), independence of

observations, and normality. As a preliminary check to meet the assumptions of linearity and homoscedasticity, scatterplots were generated on the total gender equity scores and the total impact scores. The assumptions of linearity and homoscedasticity were not supported by the results of the scatterplots supporting the need for the non-parametric Spearman's rank correlation coefficient.

A significant, positive relationship between gender equity scores and impact on educational environment scores was found for each subscale as well as the total GENEQ indicating that a more favorable learning environment results from more gender-equitable treatment of students. For the female subset, the strength of the relationship varies. The relationship between gender equity scores and impact on education environment scores for females showed a strong, positive correlation, $r_s = .552$, $n = 456$, $p < .0005$ in the classroom setting; a small, positive correlation, $r_s = .272$, $n = 455$, $p < .0005$ in the clinical setting; and a moderate, positive correlation, $r_s = .442$, $n = 443$, $p < .0005$ for the total scores. A significant strong, positive correlation exists between gender equity scores and impact on educational environment scores for the male subset in each of the subscales and total: classroom subscale, $r_s = .568$, $n = 94$, $p < .0005$; clinical subscale, $r_s = .623$, $n = 95$, $p < .0005$; and total, $r_s = .570$, $n = 90$, $p < .0005$. The total, or combined male and female, scores also indicate significant relationships between gender equity scores and impact on educational environment scores: for the classroom subscale a strong, positive correlation, $r_s = .548$, $N = 550$, $p < .0005$; for the clinical subscale a moderate, positive correlation, $r_s = .351$, $N = 550$, $p < .0005$; and for the total a moderate, positive correlation, $r_s = .467$, $n = 533$, $p < .0005$.

Summary

Analysis of the demographic data indicated that the majority of respondents were female with male respondents comprising 17.5% of the study sample. A majority of the respondents also met the defined age criteria indicating they were traditional students with 35.5% of the respondents meeting the non-traditional student criteria. The sample included a majority of respondents identifying race or ethnicity as white with 13.8% of the sample identifying as non-white. Finally, a majority of the student respondents were single with 15.2% indicating they were married or previously married. The sample included respondents from 34.9% of PHENSA schools. Among all the respondents, the most influential factor for choice of nursing career was the desire to help people while influence by parents was the least influential factor. Respondents also indicated that they were most likely to pursue a career in critical care nursing with rehabilitation nursing being the least likely specialty choice.

Responses to the classroom setting subscale of the GENEQ indicate that respondents perceived because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions (reverse-scored for analysis) as the most gender-equitable item in the subscale while nursing faculty included reference to the contributions of men in the history of nursing was perceived as the least gender-equitable item. The item from the subscale deemed to have the most positive impact on the educational environment was nursing faculty made the classroom a welcoming environment for both genders while nursing faculty included reference to the contributions of men in the history of nursing was deemed as having the most negative impact on the educational environment. The total gender equity scores for the classroom setting subscale ranged from 36 to 74 with a possible range of 15 to 75 and the total classroom subscale impact score ranged from 29 to 75 with a possible range of 15 to 75. Of

the 15 items in the classroom setting subscale, eight items yielded a significant difference ($p <$ .05) between male and female scores. The total gender equity scores for the classroom setting subscale also yielded a significant difference in scores for males and females with the magnitude of the difference in the means being small to moderate.

For the clinical environment subscale of the GENEQ, respondents perceived clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences (reverse-scored for analysis) as the most gender-equitable item while I encountered gender specific terminology during my clinical experiences (reverse-scored for analysis) was perceived as the least gender-equitable item in the subscale. Respondents perceived clinical faculty exhibited supportive behaviors during my clinical experiences to both genders as having the greatest positive impact on the educational environment while I experienced gender bias during my clinical experience was perceived as having the greatest negative impact on the educational environment. The total gender equity score for the clinical environment subscale ranged from 31 to 69 with a possible range from 14 to 70 and the total clinical subscale impact score ranged from 29 to 67 with a possible range from 14 to 70. Of the 14 items in the clinical environment subscale, 13 items yielded a significant difference ($p < .05$) between male and female scores. The total gender equity scores for the clinical environment subscale also yielded a significant difference in scores for males and females with the magnitude of the differences in the means being large.

The total gender equity score and total impact score could range from 29 to 145. Results indicate that the total gender equity score ranged from 78 to 139 and the total impact scores ranged from 70 to 141. A significant difference in the total gender equity scores for males and females was found with the magnitude of the difference being large. In the multiple regression

analysis, the model including gender, age, race, marital status, school, gender-factored choice of nursing and gender-factored choice of specialty reached significance with gender being the only variable making a significant contribution to the explanation of variance in the total gender equity score. Finally, a significant, positive relationship between gender equity scores and impact on educational environment scores was found for each subscale as well as the total GENEQ.

The previously reported findings related to data analysis provide the foundation for further analysis and interpretation of the data in the next chapter. The results of data analysis will be compared to previously reported results in the literature as well as to the significance of the findings related to the research questions.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

The preceding chapter provided an analysis of the study data and the results of specific statistical tests. In the following pages, a discussion, guided by the literature and the theoretical foundations, will provide an interpretation of the data analysis and findings to address the study questions. Limitations of the study will be presented followed by what the findings suggest related to gender equity in the nursing environment. Next, recommendations related to the study findings will be provided before final conclusions are presented.

Discussion

The results of the data analysis presented in the preceding chapter provide the foundation to investigate and respond to the research questions. The findings of the data analysis will be further scrutinized and interpreted in regard to the specific inquiries of the study. Through this review, analysis and explanation, answers to the study questions will be provided.

Study Sample

Data indicate that the majority of respondents were single, white, female traditional students. Although this is representative of the overall nursing student population in the United States, the minority factions in the sample varied in respect to the total population. Efforts to recruit a higher percentage of male respondents for the study were successful with 17.5% of the study sample being male compared to an estimated 10% male representation in currently enrolled nursing students reported by the AACN (2011). However, the minority student numbers in the study sample fared less well when compared to the total population. Only 13.8% of the sample identified as non-white while 26.8% of enrolled nursing students nationally represent minority groups (AACN, 2011). This may be related to a less racially diverse

population in the areas surrounding the schools sampled. Reports specific to the selected age criteria for non-traditional nursing students and the marital status of nursing students in the total population could not be identified. Overall, the sample is basically representative of the overall nursing student population indicating that results should be generalizable. Specific limitations are identified later in this chapter.

Question 1 – What is the Effect of Identified Gender on Student Perception of Gender Equity in Nursing Education?

Results of the data analysis indicate that the identified gender of the student significantly influences the perception of gender equity in nursing education in multiple areas. The *t*-test analysis comparing the mean gender equity scores between identified male and female participants yielded significant findings for items in each of the GENEQ subscales as well as the summed total gender equity scores. The significant findings will be presented and discussed in consideration of the reported literature and in the context of the theoretical frameworks.

The classroom setting subscale. Over half of the items in the classroom setting subscale (8 of 15) showed a significant difference between male and female responses related to perceived gender equity in nursing education. These items can be grouped according to faculty treatment of students, classroom resources, and classroom instruction. The significant difference between male and female responses can be linked to, and, for the most part, support findings from previously cited studies. The mean of the responses for males in each of the significant items falls below the mean of the responses for females indicating that nursing students who are male generally perceive or view these items as less gender equitable than their female counterparts. Overall, the total of the classroom setting subscale responses shows a significant difference

between male and female nursing student perceptions related to gender equity in the classroom setting.

Study findings indicate that male student responses differ significantly from female responses for several items representing gender-equitable treatment by faculty in the classroom setting. Specifically, male student responses differed significantly from the female responses related to nursing instructors creating different or altered assignments and/or requirements based on student gender, differential treatment in the classroom environment based on gender, and, because of their gender, faculty did not appreciate comments or contributions during classroom discussions. These findings support those reported by Bell-Scriber (2008), Dyck et al. (2009), Kelly et al. (1996), and O'Lynn (2004). O'Lynn (2004) found that over three quarters of male nurse respondents indicated having different or altered assignments based on their sex during their nursing education experience. Results of qualitative endeavors by Dyck et al. (2009) and Kelly et al. (1996) indicated a perception of differential treatment by faculty toward male nursing students in the classroom setting. Bell-Scriber (2008) also reported findings related to a feeling that some faculty did not approve of men and communicated with male students in a less desirable manner than with female students. These results underscore the opinion by Brady and Sherrod (2003) that nursing faculty must work to reshape the classroom experience, examine their own practices in the classroom, and take action in these identified areas to address perceived inequities.

Male responses also differed significantly from female responses related to several classroom resource items. Male responses related to information in textbooks representing male and female genders equally and textbooks referring to nurses with a feminine pronoun showed a significant difference when compared to their female counterparts. The results for these items

echo previously reported qualitative findings by Bell-Scriber (2008), Kelly et al. (1996), and Smith (2006) as well as quantitative findings by O'Lynn (2004). In Smith's (2006) qualitative study, the male nursing students indicated substantial use of female representation in textbooks was a significant gender issue experienced. O'Lynn (2004) reported 82% of respondents indicated nurses were referred to with a feminine pronoun in texts. Efforts to make textbooks present nursing in a more gender-equitable fashion have been undertaken, but further scrutiny and continued work in this area are warranted given the current findings.

Finally, for items related to gender equity in teaching and lectures, male and female responses differed significantly for faculty including reference to the contributions of men in the history of nursing, gender bias being evident during nursing lectures and instruction, and male anatomy and physiology being adequately addressed in the classroom. These results support previously reported anecdotal, qualitative, and quantitative studies. Most notably, the findings support results reported by Bell-Scriber (2008), Kelly et al. (1996), O'Lynn (2004), and Villeneuve (1994) related to classroom experiences for male nursing students. Each reported the lack of reference to the contributions of men in the history of nursing and gender bias being evident in the classroom setting. However, one notable contradiction between the current study and previous reports relates to the subject of anatomy and physiology in the classroom. Findings by Dyck et al. (2009) and Harding et al. (2008) indicated that female anatomy and physiology were assumed and instructors devoted less time in this area. The results of the current study indicate no significant difference between male and female responses for the female anatomy and physiology item. Interestingly, the female anatomy and physiology item was one of two in the classroom setting subscale where the mean of the male responses was slightly (but not significantly) higher than the mean of female responses. However, a marginally significant

difference was found for the male anatomy and physiology item and the mean of male responses for the male anatomy and physiology item was lower than the mean of female responses. This finding might indicate that additional time devoted by nurse educators to more adequately address female anatomy and physiology in the classroom related to the results published by Dyck et al. (2009) and Harding et al. (2008) may have allowed less time to cover male anatomy and physiology yielding the current findings.

The results of the analysis related to the effect of sex on gender equity in the nursing education environment, especially related to anatomy and physiology in the classroom setting, can be used to support the theoretical concepts identified by Freire (1970/2000). The average female responses for the female anatomy and physiology item versus the lower mean of responses returned by female respondents for the male anatomy and physiology item supports how characteristics of the oppressed group may be seen negatively or of lesser value. Comparatively, the mean of male responses to the female anatomy and physiology item were higher than their female counterparts, while the average of male responses to the male anatomy and physiology item was lower than that of the female respondents indicating that the oppressed group may be adapting to the oppressor environment and values.

Overall, a significant difference between how male and female nursing student respondents perceive gender equity in the nursing education classroom setting was found. The results of the analysis of the total classroom subscale gender equity scores indicate that male nursing students perceive a less gender-equitable environment in the nursing classroom setting than female nursing students. Additionally, a significant difference between male and female nursing student perceptions of gender equity in the classroom setting was found for over half of the items in the classroom setting subscale. These findings support the relevance of the

feminism paradigm, of which a major principle is equal treatment and rights for men and women. Given the significant differences between male and female respondents, and the additional finding that the mean male responses, for the majority of items, were lower than female responses would imply, at the least, different treatment of male nursing students, at some level, in the nursing classroom setting. The feminism paradigm would suggest that after identification of unequal treatment, steps be taken to raise awareness about and ultimately address the identified inequities.

The clinical environment subscale. Nearly all of the items in the clinical environment subscale (13 of 14) showed a significant difference between male and female responses related to perceived gender equity in nursing education. These items can be grouped according to clinical faculty behaviors, student activities and experiences, and general clinical environment. The significant difference between male and female responses can be linked to, and support, findings from previously cited studies and will be further discussed below. As with the mean of the scores in the classroom setting subscale, the mean of the responses for males in each of the significant items falls below the mean of the responses for females indicating that nursing students who are male generally perceive or view these items as less gender equitable than their female counterparts. Overall, the total of the clinical environment subscale responses shows a significant difference between male and female nursing student experiences and perceptions related to gender equity in the clinical setting.

Study findings indicate that male student responses differ significantly from female responses related to several items representing clinical faculty behaviors in the clinical setting. Specifically, responses related to different or altered assignments and/or requirements, changes in patient assignments, and gender-based discriminatory behaviors by clinical faculty yielded

significant differences between male and female respondents. The significant findings for these items support previous anecdotal and qualitative findings by Anthony (2004), Cudé (2004), Ellis (2006), Grady et al. (2008), Harding et al. (2008), Kelly et al. (1996), MacRae (2003), O'Lynn (2004), and Smith (2006). Grady et al. (2008) found male nursing students were afforded different requirements in the clinical environment not offered to female nursing students. This was described as a disservice to the male students as they were not held to the same clinical standards. Quantitative findings reported by O'Lynn (2004) indicated that 80% of male nurses reported experiencing different requirements or limitations in the clinical environment during the nursing education. In a qualitative study, Kelly (1996) found that some male nursing students were only assigned to male patients limiting their learning experiences in the clinical environment. In additional qualitative studies, Cudé (2004), Ellis (2006), and MacRae (2003) all reported male nursing students experienced gender-biased statements or discriminatory behaviors by clinical faculty. O'Lynn reported that 91.9% of respondents indicated feeling unwelcomed in the clinical environment. These findings suggest male nursing students perceive a less gender-equitable environment related to clinical requirements, patient assignments and gender-based discriminatory behaviors than female nursing students. Clinical faculty should examine their instructional practices to address potential inequities in these areas. As clinical instructors may be adjunct faculty, nursing schools might consider specific orientation related to gender equity issues and stress the need for equal treatment of all students.

The male responses also differed significantly from female responses related to student activities and experiences in the clinical environment. Male responses related to being prepared to provide care for members of the opposite sex, feelings of inadequacy in caring for members of the opposite sex, and fearing accusations of inappropriate conduct when caring for patients of the

opposite sex differed significantly from female responses. Callister et al. (2000), Evans (2002), Harding et al. (2008), and O'Lynn (2004) all reported similar findings in their investigative endeavors. In a qualitative study, Harding et al. (2008) reported male nursing student identified experiences in each of the above areas. Callister et al. (2000) reported similar feelings of inadequacy in providing care in her qualitative study. Protecting oneself from accusations of inappropriate touch was a theme derived by Evans (2002) in her qualitative study and O'Lynn (2003) reported that 90.1% of male nurses indicated a fear of accusations of inappropriate conduct during their clinical learning experiences. Clinical nurse educators should be aware of potential problems related to male nursing students providing care for female patients and make efforts to ensure clinical exposure to members of the opposite sex are positive experiences that provide appropriate learning experiences and a foundation for growth and confidence in their clinical practice.

In addition, items related to encountering no differential treatment in the clinical environment based on gender, being prevented from performing the full range of caring interventions for a patient of the opposite sex, and refusal of care by a patient based on gender also showed significant differences between male and female respondents. These items support findings by Grady et al. (2008), Harding et al. (2008), Kelly et al. (1996), Kouta and Kaite (2011), MacRae (2003), Smith (2006), and Stott (2006) related to male nursing student experiences in the clinical environment. Grady et al. (2008), Harding et al. (2008), Kelly et al. (1996), MacRae (2003), and Stott (2006) all reported occurrences of differential treatment in the clinical environment for male nursing students in their respective qualitative studies. Stott (2006) specifically mentioned the practice of requesting male nursing students to remove clothing during clinical learning labs while not requiring female students to do the same. Kouta

and Kaite (2011) identify male nursing students as being prevented from performing or observing specific care interventions for female patients and at times being asked to leave the room when such care is provided. Harding et al. (2008) and Smith (2006) found refusal of care as a specific gender-based problem identified by male nursing students, but almost all researchers include this item as occurring more for male nursing students than their female counterparts. Faculty should emphasize equal treatment and participation of all students without exception or exclusion based on gender. Clinical faculty should be aware of personal or cultural issues (specifically whether a member of the opposite sex may provide care for an individual related to cultural or religious beliefs) that might require same sex assignments and identify those patients before assignments are made to circumvent any potential problems related to student assignments and possible refusal of care by assigned patients.

Finally, male responses to working with a clinical faculty member of the same sex, and having the opportunity to work with a nurse mentor of the same sex during clinical experiences showed a significant difference when compared to female responses for these items. These clinical environment items support quantitative findings by O'Lynn (2004) as well as qualitative findings reported by Bell-Scriber (2008), Ellis et al. (2006), Smith (2006), and Stott (2006). O'Lynn reported that 67.8% of his respondents indicated they had no male faculty and 99.1% indicated the lack of male mentorship in nursing education programs. Each of the qualitative studies indicated above mention lack of male faculty or male roles models as a significant finding in their respective studies. Although the number of men in nursing and nurse education has increased, they are still a small minority of practicing nurses and nurse educators. Every effort should be made to identify and recruit male faculty and male nurse mentors as role models for male nursing students. In programs that lack any male faculty members, identification of

male nurses to serve as mentors and role models for the male nursing students should be considered.

Finally, for items related to the general clinical environment, male and female responses differed significantly for encountering gender specific terminology during my clinical experiences, and experiencing gender bias during my clinical experience. These items support previously reported qualitative and quantitative studies. Kelly et al. (1996) emphasized in their conclusions that male nursing students should not be isolated and made to feel different by the use of gender specific terminology like "male nurse". McLaughlin et al. (2010) concurred in the discussion of their findings indicating that "the incessant labeling of men as 'male' nurses sets them apart from the remainder of the nursing population" (p. 306). Evans (2002) reported gender stereotyping and a feminine norm prevalent in her qualitative study. Stott (2006) also found that stereotypical gender roles created barriers for male nursing students in the clinical environment. Gender specific terminology is perhaps the most notable and what would seem to be the easiest to remedy. Feminism ideology indicates equal treatment of males and females. Eradication of gender specific terminology in nursing and movement toward a more gender neutral environment would certainly provide a more gender-equitable environment and eliminate potential gender bias as well. No specific contradiction between the current study findings and previous reports related to gender equity in the clinical environment could be identified.

Overall, a significant difference between how male and female nursing student respondents view or perceive gender equity in the nursing education clinical environment was found. The results of the analysis of the total clinical subscale gender equity scores indicate that male nursing students perceive a less gender-equitable experience in the nursing clinical environment than female nursing students. The findings of a significant difference in the male

responses compared to the female responses in all but one of the clinical subscale items and the magnitude of the differences in the means for the total clinical subscale gender equity scores supports the relevance of the feminism paradigm. A tenet of feminism is the equal treatment of men and women. When inequities or disparities between the sexes are identified, measures to move toward a more gender-equitable environment are required. In addition, given the findings of significant differences between male and female responses related to gender-specific terminology, gender bias and other clinical environment items, Freire's oppressed group behaviors are supported in that the female majority does not perceive the disparities or inequitable treatment of their male peers.

The results of this study indicate a significant difference in the perception of gender equity in the nursing education environment – in both the classroom setting and clinical environment. After identification of the problem, awareness and action are indicated. To move toward a more gender-equitable environment, faculty should assess their programs and current instructional practices to determine if any inequities exist. The curriculum should be examined to ensure equal treatment of all students and assignments should be reflective of the desired learning experiences and appropriate for all students. Learning resources should be reviewed to determine if any gender inequities are evident such as sexist language, photos, or reinforcement of stereotypical roles, and if possible, make plans to resolve those issues. Faculty leaders should inform staff of the implications of specific actions and choices related to gender equity and schools should establish a climate in which all participants – faculty and students – understand that gender equity is a high priority. Faculty reviews should include a gender-equitable teaching style as a consideration, and programs should institute gender equity educational offerings for new faculty orientations as well as periodic continuing faculty development.

In summary, the sex of a student has a significant effect on the perception of gender equity in nursing education. The results of the *t*-test examining the differences between gender equity scores for male and female students yielded significant differences in the responses related to the classroom setting, the clinical environment, individual subscale totals, and overall total gender equity scores. The significant differences identified support the feminist paradigm related to the tenet of equitable treatment and rights for men and women. When inequities exist, as the findings suggest, increasing awareness and a call for action are warranted. Significant findings of differences in the mean response between male and female nursing students related to specific classroom setting and clinical environment gender equity items imply a lack of recognition by the female majority of oppressive factors and disparate treatment of the male minority. In this case, the male minority could be seen as an oppressed group supporting Freire's model of oppression.

Corrective action to address the perceived differences in gender equity experiences and minimize oppressed group behaviors cannot be undertaken without an awareness of the situation. The findings from this study indicate specific areas that should be identified for review, analysis and corrective action at all levels of nursing education. Faculty should educate peers and students on the importance of recognizing gender inequities and the equitable treatment of all individuals should be made a priority. Nursing education leaders and faculty should continue to address, and take action on, those areas identified by research that indicate gender inequities or oppressive behaviors. Specific plans to continually review the curriculum and school policies for any gender inequities and/or oppressive factors should be instituted to ensure that progress toward gender equity in the classroom setting and clinical environment and liberation from oppression remains not only a realistic, but an achievable goal in nursing education.

Question 2 – What are the Major Predictors of Student Perception of Gender Equity in Nursing Education?

Multiple regression analysis was used to test the model consisting of gender, age, race/ethnicity, marital status, school, choice of nursing career, and desired nursing specialty to determine the major predictors of student perception of gender equity in nursing education. The choice of nursing career and desired nursing specialty were gender-factored variables based on previous quantitative study findings. The results of the multiple regression analysis indicated that gender was the only significant predictor of student perception of gender equity in nursing education.

The finding that gender is the only major predictor of student perception of gender equity in nursing education indicates that the other variables in the model have little impact on perceived gender equity in nursing education. The perception of gender equity in nursing education is not significantly influenced by age as might be suggested by Bell-Scriber (2008) comparing her findings among undergraduate students with contrasting findings by Smith (2006) among more mature, non-traditional students. Given that over one-third of the sample met the criteria for non-traditional student status, the findings would suggest that student age does not significantly impact perceptions of gender equity. Although minority students might be considered to share many of the same perceptions as other minority factions, the findings of the multiple regression analysis do not support race/ethnicity as an influence on perception of gender equity. This finding may be related to the lower percentage of minority nursing students in the sample when compared to the percent of minority nursing students in the total population of nursing students (13.8% vs. 26.8%, respectively). Along the same lines of maturity as previously iterated with age, marital status also does not influence gender equity. Although data on the

marital status of all nursing students could not be identified, the small percentage of students indicating married or previously married in the sample (15.2%) may impact the findings in this area. The school variable was included to determine if location in a metropolitan statistical area might impact perception of gender equity among the student body. Results would indicate that it does not, however the small number of respondents from some schools may again impact the results for this variable.

Choice of nursing career and desired nursing specialty were both gender-factored based on previous research by Bernard Hodes Group (2005). Despite the alignment of responses by the gender-factored masculine choices, neither variable was a significant influence on the gender equity scores. The choice of nursing career finding might indicate that efforts to recruit more minority and non-traditional students representing a broader and more diverse population have enjoyed some success, or that the data from practicing nurses recalling their impetus to follow careers in nursing do not align with the actual impetus for the current students. Similarly, the desired nursing specialty findings may indicate that efforts to change stereotypes related to some nursing specialties may be nullifying the gender gaps previously reported. Overall, the findings would indicate that the gender equity scores in this model are most influenced by the gender of the student and the other factors in the model do not contribute significantly to the gender equity scores. The age, race/ethnicity, marital status, school, choice of nursing career, and desired nursing specialty of nursing students were found to not be significant predictors of student perception of gender equity in nursing education despite allegorical evidence and logical inference related to these variables.

The theoretical concept of feminism is certainly appropriate when considering the results of the multiple regression analysis. As gender was the only significant predictor of student

perceptions of gender equity, a worldview concerned with gender equality and equal rights for men and women is supported. The significant differences in responses between male and female students and gender being the only significant influence on gender equity scores indicate that male nursing students perceive less equitable treatment than female nursing students in the nursing education environment. Having identified this inequity based on gender of the student supports the need for greater awareness and action to ensure movement toward a more gender-equitable environment and equal rights and treatment of male and female nursing students as indicated under the feminism paradigm.

Question 3 – What is the Relationship Between Student Perception of Gender Equity in Nursing Education and the Perceived Impact of Gender-based Issues on the Educational Experience?

The correlation statistic was used to investigate the relationship between student perception of gender equity in nursing education and the perceived impact of gender-based issues on the educational experience. The results of the correlation statistic for males, females, and total respondents in each of the subscales, total subscale scores, and the total GENEQ showed a significant, positive relationship between gender equity scores and impact on educational environment scores. This implies that as students perceive greater gender equity in the classroom setting and clinical environment, regardless of identified gender, they report a more positive educational experience.

In terms of the underlying theoretical concepts, as the tenets of feminism, or equal treatment of men and women, are experienced, an environment of freedom from oppression or domination will prevail. Freire (1970/2000) postulated that it is within an environment of freedom that:

> The teacher-of-the-students and the students-of-the-teacher cease to exist and a new term emerges: teacher-student with students-teachers. The teacher is no longer merely the-one-who-teaches, but one who is himself taught in dialogue with the students, who in turn while being taught also teach. They become jointly responsible for a process in which all grow. (p. 80).

Nothing more appropriately reflects the value of this finding: the perception of a more gender-equitable environment results in the report of a better learning experience.

The previous pages provided a discussion of the data analysis in regard to the research questions. In the next section, limitations of the study that may impact the findings are presented and discussed.

Limitations

Potential design flaws and methodological weaknesses include sampling only students in their final year of nursing education studies, cross-sectional data obtained only from graduating classes of 2012 and 2013, and the use of a web-based questionnaire as well as a paper-and-pencil survey to obtain data. Specific to the paper-and-pencil administration of the survey, the presence of the researcher in the room during data collection may have impacted some respondents and should be considered a limitation. Also the concept of gender equity may be considered to be a sensitive topic or one that elicits an emotional response. The sample included only students in the final year of their nursing education studies which may not reflect the experiences and perceptions of students at other levels in their nursing education programs. Beginning nursing students may have a more idealized outlook and perception of nursing education and may not have experienced, to the same level, the disparities identified by the study sample. Alternatively, the less gender-equitable experiences perceived by male nursing students may be the result of

other factors outside of the nursing education environment. Similarly, the cross-sectional data obtained only from the graduating classes of 2012 and 2013 reflect only the experiences and perceptions of these graduating classes and may not be indicative of prior or future nursing student graduating classes. These limitations may impact the application of the results to the general nursing education environment or generalizability of the study findings.

Additionally, cross-sectional data limits the broader interpretation of the results to reflect on previous or future nursing educational environments. The anonymous questionnaire limits the ability of the investigator to guarantee all responding study participants met the defined inclusion criteria (as mentioned previously in the assumptions section) and may impact validity of the final data set. Although the sampling plan and identification of potential participants proposed to include only those students eligible for participation, a web-based questionnaire cannot guarantee all participants met study criteria. Additionally, as each individual was not uniquely identified and validated for meeting study criteria in the classroom setting for the paper-and-pencil questionnaires, the final data set may include some responses from individuals not meeting study criteria potentially affecting validity of the data set. However, the assumption that each participant responded truthfully and independently would counter any concerns in this area. This assumption must also be applied in response to the concept of gender equity. Furthermore, to lessen potential bias related to the topic of gender equity, the concept was not disclosed to students before participation in the study.

The sampling of selected nursing programs within a limited geographic area and the convenience sampling of senior nursing students at selected venues represent additional study limitations. The sample included students in baccalaureate degree nursing programs and may not be reflective of the nursing education environment in associate, diploma or other degree

programs. The convenience sample also might not reflect the nursing education environment for nursing students in advanced degree programs or be representative of the total population (as with the percent of minority students in the study sample). All study respondents attended nursing programs in Pennsylvania which may limit the generalizability of the study findings to other geographic regions. Additionally, some of the participating schools represented a larger percentage of overall respondents which may impact the findings by reflecting the perceptions of students more from those schools. However, the convenience sample did meet all power analysis recommendations for the sample to be representative of the total population indicating that the statistically significant findings should represent the total population. These limitations may impact the appropriateness to generalize the results of the study outside of the selected geographic area and to a broader student body. However, the results of the study should provide additional information related to gender equity in nursing education.

Implications

Findings from this study indicate that male and female nursing students perceive gender inequities in the nursing education environment. Participant responses indicate that they perceive inequitable treatment occurring in both the classroom setting and clinical environment. Furthermore, findings show that male nursing students perceive a less gender-equitable nursing education environment than their female counterparts supporting the contention by Ellis et al. (2006) that the nursing education environment is one developed by women and focused on women's understanding. Significant differences were found in multiple areas of both the classroom setting and clinical environment. Male nursing students perceived less gender-equitable treatment from faculty, in classroom resources, and in faculty teaching and learning in the classroom setting. In the clinical environment, inequities were perceived in clinical faculty

behaviors, student activities and experiences, and the general clinical environment. Feminist theory would indicate a need for action to promote a more gender-equitable nursing education environment and equal treatment of both male and female nursing students.

The results of the study also suggest that gender inequities in the nursing education environment may adversely impact the learning experience. A positive correlation was found between gender equity scores and the perceived impact on the educational experience. This would imply that efforts to make the nursing education environment more equal for male and female nursing students might result in a better learning experience for students. Efforts to eliminate inequitable treatment of the male minority would move the nursing education environment toward an educational practice of freedom and inclusiveness and supports Freire's (1970/2000) ideology resulting in an environment where greater learning can be achieved. The IOM (2011) report indicates that emphasis on increasing the gender diversity of nursing must be emphasized in efforts to improve the nursing education system and that the perspectives and skills that male students bring are important not only to the diversity of the profession, but to the greater nursing science and knowledge. To achieve better male recruitment and support, the IOM recommends nurse educators eliminate identified barriers that male students currently face. Therefore, efforts to provide a more gender-equitable environment would not only enhance learning, but move nursing education toward meeting the goals of the IOM report. To further the considerations related to the findings of this study, several recommendations will be presented.

Recommendations

At the nursing education leadership level, specific policies outlining strategies to address gender inequities in the nursing education environment must be developed and implemented. Provision of an equitable learning environment should be included in the accreditation standards

for all nursing programs and reflected in the systematic plan of evaluation for each school. Specific educational programs related to creating a gender-equitable teaching environment and consideration of the male viewpoint and perspective should be developed and offered for continuing education credit for nurse educators. Nursing leadership should embrace and support programs and initiatives like the AAMN (2011) 20 x 20 program to increase male recruitment and make nursing education a more desirable and supportive environment for male students. Finally, funding for the development and research of strategies and programs related to efforts toward ensuring gender equity in nursing education should be identified and available for nursing educator researchers to further investigate the gender equity phenomenon.

This study has provided the groundwork for investigations into several areas related to gender equity. The individual significant findings in both the classroom setting and clinical environment should be further scrutinized to determine potential confounding factors and identify appropriate remedies. Additional investigations should concentrate on the reported effect of gender equity on the learning environment. Research into strategies to address the reported areas of significant differences in perception of gender equity should be undertaken and successful programs disseminated through nursing education journals and national conferences. Furthermore, research should include replication of the current study with other groups of nursing students, in a variety of geographic areas, and with different demographics to validate the findings across nursing education settings and students and provide additional information on the phenomenon of gender equity in nursing education. Further inquiries might also include samples more representative of the total nursing population in the area of race/ethnicity to either validate or refute the findings in this study related to that variable and more fully investigate the relationship between diverse groups of nursing students and gender equity.

Individual faculties should examine their practices and resources to ensure equal reference to, and treatment of their male nursing students. Faculties should set specific goals related to gender equity in the classroom setting and clinical environment and requirements for faculty training related to equitable treatment of men and women. Search committees should attempt to identify and recruit male faculty members for open positions. Evaluation committees should regularly review all efforts to produce a more gender-equitable environment and report on progress to meet specified benchmarks for their institutions. Faculty efforts to create and embrace a more gender-equitable environment should be disseminated through anecdotal reports and additional research. Finally, the curriculum committees at each university should review all textbooks to ensure gender-equitable reference to nurses and the nursing profession and if necessary, change or select texts that provide equal treatment of the genders.

Faculties might also review policies and practices and make appropriate changes to address specific findings of this study. The curriculum should be scrutinized to ensure appropriate coverage of male anatomy and physiology and to include reference to the contributions of men in the history of nursing. Each of these items might be included as threaded content and integrated into several courses throughout the curriculum. Peer review criteria of faculty teaching should include a focus on gender neutral presentation and gender-equitable treatment of students. For individuals having difficulty with appropriate gender neutral presentation in the classroom setting or clinical environment, educational offerings should be developed and implemented to facilitate transitions to a more gender-equitable teaching style. Finally, syllabi should be scrutinized to determine that assignments and requirements are itemized and oversights developed to ensure faculty adhere to those assignments and requirements for all students.

In the clinical arena, adjunct faculty should be provided with in-service education on gender equity and gender neutral teaching environments to address gender bias and gender specific terminology in the clinical setting. All clinical faculty should adhere to predetermined assignments and requirements of the clinical rotation. Simulation lab work or modules could be developed to ensure that all students are informed on and prepared to provide care for members of the opposite sex. Patient assignments should be made in light of a patient's personal and/or cultural ideologies and preferences and changes in patient assignment should only be made with full disclosure to the student related to the reason for the action. Efforts should be made to identify male nurses at the clinical site to provide mentorship, support, and encouragement for male nursing students.

Individual nurse educators should examine their own beliefs and practices to ensure gender-equitable treatment of all students. Further inquiry, education and learning related to specific strategies to increase gender equity in the classroom setting and clinical education should be undertaken. Individual nurse educators should work as advocates to develop and incorporate changes to the current nursing education environment that encourage a more gender-equitable learning environment. Finally, nurse educators should embrace gender equity as a concept and ideology that requires further investigation and effort to ultimately improve the nursing education learning environment.

Finally, the concept of gender equity in nursing education should be further investigated. Replication of the current study in other geographic areas will provide further information on this phenomenon. Additional research into the specific significant findings is also warranted. Qualitative efforts might provide additional insights into precipitating and confounding influences on the individual significant findings while quantitative efforts might investigate the

extent to which those items exist within the broader context of nursing education. Although the results of this quantitative endeavor support many previous qualitative findings, further quantitative studies are recommended to broaden our knowledge of student perceptions of gender equity in nursing education. Dissemination of findings from research studies and publishing of anecdotal reports of specific actions to move toward a more gender-equitable nursing education environment are paramount. Having identified the problem, the next step requires action. Nurse educators at all levels should become involved in efforts to ensure a more gender-equitable environment for all students.

Conclusions

Students perceive that gender inequities exist in the current nursing education environment. Male nursing students perceive less gender-equitable treatment than their female counterparts and a major predictor of gender equity is the identified gender of the student. The perception of inequitable treatment of male and female students may negatively impact the nursing education environment and for male students may create an atmosphere of oppression and further erode the learning experience in the classroom setting and clinical environment.

In light of these findings, a plan must be developed and steps taken to address gender inequities in the current nursing education environment and embrace the recommendations of the IOM (2011). Nursing leadership should enact policies and procedures to move nursing education toward a more gender-equitable environment. Individual faculties should examine their school policies, practices and resources to ensure a gender neutral learning environment. Finally, individual faculty members should scrutinize their own practices and beliefs to model behaviors and use resources that create a more gender-equitable learning environment for all students.

Dissertation Summary

Title IX of the Education Amendments of 1972 ensures gender equity in education. Although male dominated professions were mandated to comply with the requirements of Title IX, nursing, being a female dominated profession, seems to have been exempt from the regulations. The literature related to male student nurses identifies barriers encountered in nursing education, specifically in the nursing education classroom setting and clinical environment. Gender equity is introduced as a concept to investigate student perceptions of nursing education. The Gender Equity in Nursing Education Questionnaire was developed to research perceived gender equity in the classroom and clinical environments as well as the impact of gender equity on the nursing education experience. A quantitative, cross-sectional survey methodology on a convenience sample of senior baccalaureate nursing students at multiple nursing education programs in Pennsylvania was used. Findings show significant differences between male and female respondents related to perceived gender equity in the classroom setting and clinical environment. Identified gender is the only significant influence on gender equity scores in the study model. Finally, a positive correlation exists between perceived gender equity and reported impact on educational experience. The perceived inequities identified by male nursing students supports a feminism paradigm related to equal treatment of the sexes. The male nursing student minority can also be considered an oppressed group using Freire's pedagogy of oppression. Specific recommendations to address the significant findings of this research are presented as well as a call for further investigation into the new concept of gender equity in nursing education.

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Appendix A

Gender Equity in Nursing Education Questionnaire

The purpose of this questionnaire is to gather information from senior nursing students related to their views, experiences and perceptions of the nursing education classroom setting and the clinical practice learning environment. First, I'd like to start with some general demographic questions to provide basic information for the questionnaire.

Do you plan to graduate from a baccalaureate nursing program in Pennsylvania at the end of the current academic year?

- ❍ Yes
- ❍ No

If No Is Selected, Then Skip To End of Survey

What is your gender?

- ❍ Female
- ❍ Male

Now I'd like you to think about your experiences during nursing school. Please respond to the following statements while considering your interactions and participation in nursing education classroom instruction and environment. (In the first answer column, select one answer based on your personal classroom experience or knowledge. In the second answer column, select one answer to indicate how the statement impacts learning in the classroom environment.)

	Personal Experience					Perceived Impact on Educational Experience				
	Never	Rarely	Sometimes	Often	Always	Very Negative Impact	Negative Impact	Neutral	Positive Impact	Very Positive Impact
Female anatomy and physiology were adequately addressed in the classroom.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing instructors created different or altered assignments and/or requirements based on student gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Information in nursing textbooks represented male and female genders equally.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing faculty encouraged dissent or counterpoints to presented information during classroom discussions.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing faculty interacted differently in the classroom environment based on gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing lectures and instructions represented male and female genders equally.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing faculty included reference to the contributions of men in the history of nursing.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Male anatomy and physiology were adequately covered in the classroom.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I encountered differential treatment in the nursing classroom environment based on my gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	Personal Experience					Perceived Impact on Educational Experience				
	Never	Rarely	Sometimes	Often	Always	Very Negative Impact	Negative Impact	Neutral	Positive Impact	Very Positive Impact
Textbooks referred to nurses with a feminine pronoun.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing faculty exhibited supportive behaviors in the classroom environment for all students.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Because of my gender, nursing faculty did not appreciate my comments and contributions during classroom discussions.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing faculty made the classroom a welcoming environment for both genders.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Gender bias was evident during nursing lectures and instruction.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Nursing faculty included reference to the contributions of women in the history of nursing.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Thinking about your time in clinical rotations/practice, respond to the following statements. (In the first answer column, select one answer based on your personal clinical experience or knowledge. In the second answer column, select one answer to indicate how the statement impacts learning during the clinical experience.)

	Personal Experience					Perceived Impact on Clinical Experience				
	Never	Rarely	Sometimes	Often	Always	Very Negative Impact	Negative Impact	Neutral	Positive Impact	Very Positive Impact
Clinical faculty created different or altered assignments and/or requirements based on student gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I felt prepared to provide care for members of the opposite sex.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Patient assignments were changed based on student gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Clinical faculty exhibited supportive behaviors during my clinical experiences to both genders.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I experienced feelings of inadequacy in caring for members of the opposite sex.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I worked with a clinical faculty member of the same sex during my clinical rotations.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I feared accusations of inappropriate conduct when caring for patients of the opposite sex.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I encountered no differential treatment in the clinical environment based on my gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I was prevented from performing the full range of caring interventions for a patient of the opposite sex.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Clinical faculty exhibited gender-based discriminatory behaviors during my clinical experiences.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	Personal Experience					Perceived Impact on Clinical Experience				
	Never	Rarely	Sometimes	Often	Always	Very Negative Impact	Negative Impact	Neutral	Positive Impact	Very Positive Impact
A patient refused care based on my gender.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I had the opportunity to work with a nurse mentor of the same sex during my clinical experiences.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I encountered gender specific terminology (e.g., male nursing student, female doctor) during my clinical experiences.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
(Male respondents only) I experienced gender bias (e.g., referred to do heavy lifting or deal with aggressive patient) during my clinical experience.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
(Female respondents only) I experienced gender bias (e.g., excused from doing heavy lifting or dealing with aggressive patient) during my clinical experience.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Now, I'd like to learn why you chose to enter nursing. (Please indicate how important each of the following reasons to study nursing was to you.)

	Not at all Important	Very Unimportant	Neither Important nor Unimportant	Very Important	Extremely Important
Available scholarships or funding for school	❍	❍	❍	❍	❍
Benefits	❍	❍	❍	❍	❍
Career stability	❍	❍	❍	❍	❍
Desire to help people	❍	❍	❍	❍	❍
Family member/friend in nursing	❍	❍	❍	❍	❍
Growth profession with multiple career paths	❍	❍	❍	❍	❍
Influence by parents	❍	❍	❍	❍	❍
Lifelong ambition	❍	❍	❍	❍	❍
Salary	❍	❍	❍	❍	❍
Schedule Flexibility	❍	❍	❍	❍	❍
Variety of geographic career choices	❍	❍	❍	❍	❍

Next, I'd like you to consider what areas of nursing most attract you after graduation? (Please indicate how likely you are to pursue work in each of the following specialty practices.)

	Very Unlikely	Unlikely	Undecided	Likely	Very Likely
Clinical Nurse Specialist	❍	❍	❍	❍	❍
Critical Care Nurse	❍	❍	❍	❍	❍
Director/Executive Level Nurse	❍	❍	❍	❍	❍
Emergency Department Nurse	❍	❍	❍	❍	❍
Medical/Surgical Nurse	❍	❍	❍	❍	❍
Nurse Anesthetist	❍	❍	❍	❍	❍
Nurse Educator	❍	❍	❍	❍	❍
Nurse Practitioner	❍	❍	❍	❍	❍
Nursery / Neonatal Intensive Care Unit (PICU) Nurse	❍	❍	❍	❍	❍
Nursing Management	❍	❍	❍	❍	❍
Obstetrics/Gynecology (OB/GYN) Nurse	❍	❍	❍	❍	❍
Oncology Nurse	❍	❍	❍	❍	❍
Operating Room/Post Anesthesia Care Unit (PACU) Nurse	❍	❍	❍	❍	❍
Pediatric Nurse	❍	❍	❍	❍	❍
Psychiatric Nurse	❍	❍	❍	❍	❍
Rehab Nurse	❍	❍	❍	❍	❍

What year were you born? (click on the down arrow to select a year from the list provided)

Born	Enter Year

What is your racial or ethnic background? (select the most appropriate answer)

- ❍ American Indian or Alaskan Native
- ❍ Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese)
- ❍ Black or African American
- ❍ Hispanic or Latino (Mexican, Puerto Rican, Cuban)
- ❍ Native Hawaiian or Pacific Islander
- ❍ Two or more races
- ❍ White

What is your current marital status? (select the most appropriate answer)

- ❍ Single
- ❍ Married
- ❍ Separated
- ❍ Divorced
- ❍ Widowed

Please indicate the nursing school you attend below.(select your school from the list)

Nursing School	Alvernia University	Inclusive to See Appendix C for comprehensive list	York College of Pennsylvania	Other

Appendix B

Business Card

WANTED

Senior Nursing Student Opinions
about Nursing Education
and the Nursing Education Environment

Front Flap

You are invited to participate in a research study to understand your experience as a nursing student and your perceptions about nursing education.
To access the study questionnaire, please visit the following website:

WEBSITE ADDRESS

Inside

Appendix C

PHENSA Member Schools

Alvernia University

Bloomsburg University of PA

California University of Pennsylvania

Carlow University

Cedar Crest College

Clarion University of Pennsylvania

DeSales University

Drexel University

Duquesne University

East Stroudsburg University of PA

Eastern University

Edinboro University of Pennsylvania

Gannon University

Gwynedd-Mercy College

Holy Family University

Immaculata University

Indiana University of Pennsylvania

Kutztown University of Pennsylvania

LaRoche College

LaSalle University

Mansfield University of PA

Marywood University

Messiah College

Millersville University of PA

Misericordia University

St. Luke's Hospital School of Nursing at Moravian College

Mount Aloysius College

Neumann College

Robert Morris University

Saint Francis University

Slippery Rock University of PA

Temple University

The Pennsylvania State University

Thomas Jefferson University

University of Pennsylvania School of Nursing

University of Pittsburgh

University of Scranton

Villanova University

Waynesburg University

West Chester University of Pennsylvania

Widener University

Wilkes University

York College of Pennsylvania

Appendix D

Recruitment Letter

Timothy B. Campbell, MSN, CRNP, PNP-BC
129 Catawissa Avenue
Sunbury, PA 17801-2345

September 4, 2012

«First_Name» «Last_Name», «Suffix»
«Office»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «State» «ZIP_Code»

Dear «Salutation»,

My name is Timothy Campbell and I am an instructor at East Stroudsburg University and a doctoral candidate at Indiana University of Pennsylvania. I am writing to ask if you would be interested in having members of your senior nursing class participate in my doctoral research. My dissertation investigates Gender Equity in Nursing Education: Student Perceptions and Impact on the Educational Environment. I have developed the Gender Equity in Nursing Education Questionnaire to collect data on this subject. The questionnaire takes approximately 15 minutes to complete and is administered in a pencil-and-paper format. The questionnaire can also be accessed on-line via a web page and Qualtrics software if you'd prefer to have students respond via electronic submission. For the on-line version, a code must be provided.

My sample includes senior nursing students from PHENSA member schools. The power analysis indicated the need for 120 male students and 120 female students to yield statistical significance on differences between the two groups. As you can imagine, the challenge is to get the 120 male students. To that end, I am asking all deans/directors of PHENSA schools if they would be interested in having their students participate (especially male students). Please complete the enclosed form and return it to me in the self-addressed, stamped envelope, if you would like to further discuss the possibilities.

I hope to attend the PHENSA annual meeting in October to further solicit individual school participation and discuss possible options. Hopefully I will see you there.

Thank you for your consideration and time.

Sincerely,

Timothy B. Campbell, MSN, CRNP, PNP-BC
Instructor, East Stroudsburg University
Doctoral Candidate, Indiana University of Pennsylvania

Appendix E

Interest in Participation Form

What is the total number of senior nursing students in your program? _____

How many senior nursing students are male? _____

Are you willing to have your senior nursing students participate in this research? ☐ YES ☐ NO

If necessary, could access to just your male students be provided? ☐ YES ☐ NO

Please provide a contact name if you'd prefer I work with some else in your nursing program:

Name: _____

Title: _____

Address: _____

_____

City: _____

State: _____

Zip Code: _____

Telephone: _____

Email: _____

Please return this form in the enclosed self-addressed, stamped envelope.

Again, thank you for your time and consideration.

Timothy B. Campbell, MSN, CRNP, PNP-BC
Instructor, East Stroudsburg University
Doctoral Candidate, Indiana University of Pennsylvania

Appendix F

Indiana University of Pennsylvania IRB Approval Letters

Indiana University of Pennsylvania
www.iup.edu

Institutional Review Board for the
Protection of Human Subjects
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
irb-research@iup.edu
www.iup.edu/irb

September 9, 2011

Timothy B. Campbell
129 Catawissa Avenue
Sunbury, PA 17801-2345

Dear Mr. Campbell:

Your proposed research project, "Gender Equity in Nursing Education: Student Perceptions and Impact on the Educational Experience," (Log No. 11-207) has been reviewed by the IRB and is approved as an expedited review for the period of September 9, 2011 to September 9, 2012.

It is also important for you to note that IUP adheres strictly to Federal Policy that requires you to notify the IRB promptly regarding:

1. any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented),
2. any events that affect the safety or well-being of subjects, and
3. any modifications of your study or other responses that are necessitated by any events reported in (2).

Should you need to continue your research beyond September 9, 2012 you will need to file additional information for continuing review. Please contact the IRB office at (724) 357-7730 or come to Room 113, Stright Hall for further information.

Although your human subjects review process is complete, the School of Graduate Studies and Research requires submission and approval of a Research Topic Approval Form (RTAF) before you can begin your research. If you have not yet submitted your RTAF, the form can be found at http://www.iup.edu/page.aspx?id=91683 .

This letter indicates the IRB's approval of your protocol. IRB approval does not supersede or obviate compliance with any other University policies, including, but not limited to, policies regarding program enrollment, topic approval, and conduct of university-affiliated activities.

I wish you success as you pursue this important endeavor.

Sincerely,

John A. Mills, Ph.D., ABPP
Chairperson, Institutional Review Board for the Protection of Human Subjects
Professor of Psychology

JAM:jeb

xc: Dr. Teresa Shellenbarger, Dissertation Advisor
Ms. Jean Serio, Secretary

Indiana University of Pennsylvania
www.iup.edu

Institutional Review Board for the
Protection of Human Subjects
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
irb-research@iup.edu
www.iup.edu/irb

August 3, 2012

Timothy Campbell
129 Catawissa Avenue
Sunbury, PA 17801

Dear Mr. Campbell:

Your request for continuing review for your research project, "Gender Equity in Nursing Education: Student Perceptions and Impact on Education Experience," (Log No. 11-207), has been reviewed by the IRB and is approved as an expedited review for the period of July 31, 2012 to July 31, 2013.

It is also important for you to note that IUP adheres strictly to Federal Policy that requires you to notify the IRB promptly regarding:

1. any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented),
2. any events that affect the safety or well-being of subjects, and
3. any modifications of your study or other responses that are necessitated by any events reported in (2).

Should you need to continue your research beyond July 31, 2013 you will need to file additional information for continuing review. Please contact the IRB office at (724) 357-7730 or come to Room 113, Stright Hall for further information.

This letter indicates the IRB's approval of your protocol. IRB approval does not supersede or obviate compliance with any other University policies

I wish you success as you pursue this important endeavor.

Sincerely,

John A. Mills, Ph.D., ABPP
Chairperson, Institutional Review Board for the Protection of Human Subjects
Professor of Psychology

JAM:jeb

xc: Dr. Teresa Shellenbarger, Dissertation Advisor

Appendix G

Additional IRB Approvals or Communications Related to Conducting Research

Bloomsburg University

From: Ficca, Michelle S [mailto:mficca@bloomu.edu]
Sent: Tue 9/11/2012 10:26 AM
To: Timothy B Campbell
Subject: RE: Tomorrow

Tim,
I got a verbal OK from Jerrold Harris but received nothing in writing. Is there any way we can move this to next Wednesday, the 19th? There are a total of 32 students, class times are 10-1 and 3-6.

Michelle Ficca, PhD, RN
Chairperson
Department of Nursing
Bloomsburg University of Pennsylvania
Bloomsburg, PA 17815
570-389-4615
mficca@bloomu.edu

-----Original Message-----
From: Timothy B Campbell [mailto:tcampbell@po-box.esu.edu]
Sent: Tuesday, September 11, 2012 9:34 AM
To: Ficca, Michelle S
Subject: Tomorrow

Dr. Ficca,

I spoke with Bonnie this morning, but wanted to follow up with an email. Do you know the status of the IRB application? Are we still on for tomorrow? If not, can we reschedule for a Wednesday later in the semester? Also, how many students total and the class times so I am sure to have enough questionnaires.

Thanks so much for your time and efforts,

tim

Cedar Crest College

From:	Patricia Field [Pafield@cedarcrest.edu]	Sent:	Thu 10/18/2012 1:18 PM
To:	gjfq@iup.edu		
Cc:	James Scepansky; Wendy Robb		
Subject:	IRB proposal 2012-31		
Attachments			

Timothy:

Congratulations! Your proposal #2012-31, **"Gender Equity in Nursing Education: Student Perceptions and Impact on the Educational Experience"** has been received and reviewed by the Cedar Crest College Institutional Review Board. Since your proposal has been approved by an established IRB, and all requirements for Cedar Crest College have been met, you may begin your research as described in your proposal. If you have any questions or concerns please contact the Institutional Review Board Chairperson, Dr. James Scepansky at extension 3424.

Thanks,
Trish Field
Institutional Review Board Coordinator
Cedar Crest College
100 College Drive, Curtis 239
Allentown, PA 18104-6196

T: 610-606-4666 ext. 3473
F: 610-740-3779
E: pafield@cedarcrest.edu

Drexel University

From: Storino,Cheryl [mailto:cls69@drexel.edu]
Sent: Tue 10/2/2012 10:31 AM
To: tcampbell@esu.edu
Cc: Medendorp,John; Ferrigno,Barbara
Subject: Nursing Student Voice - Dissertation

Dear Tim,

It was a pleasure discussing your thesis with you last week.

Meeting with the Assistant Director of Human Research, Jack Medendorp, it was determined that the information you provided on the proposed activity does not require the IRB review and approval. The proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

In order for the targeted population to receive the email correspondence, please get in touch with the Dean of Students, David Ruth, Ph.D (david.ruth@drexel.edu), for guidance.

If you need any further information, please feel free to contact me or Jack Medendorp, jcm29@drexel.edu.

Thank you.

Kind regards,
Cheryl Storino
IRB Project Coordinator
Medical IRB #1
Office of Human Research
Phone: 215.255.7868 / Fax: 215.255.7874

1601 Cherry Street, 10th Floor
Suite 10-444
Philadelphia, PA 19102

Please consider the environment before printing.

East Stroudsburg University

200 Prospect Street
East Stroudsburg, PA
18301-2999

East Stroudsburg University Institutional Review Board
Human Research Review
Protocol # **ESU-IRB-016-1112**

Date: **September 23, 2011**
To: **Timothy Campbell**
From: **Shala E. Davis, Ph.D., IRB Chair**
Proposal Title: "**Gender Equity In Nursing Education: Student Perceptions and Impact on the Educational Experience**"

Review Requested:	Exempted	Expedited **X**	Full Review
Review Approved:	Exempted	Expedited **X**	Full Review

FULL RESEARCH

____ Your full review research proposal has been approved by the University IRB (12 months). Please provide the University IRB a copy of your Final Report at the completion of your research. (Extension granted)

____ Your full review research proposal has been approved with recommendations by the University IRB. Please review recommendations provided by the reviewers and **submit necessary documentation for full approval.**

____ Your full review research proposal has not been approved by the University IRB. Please review recommendations provided by the reviewers and resubmit.

EXEMPTED RESEARCH

____ Your exempted review research proposal has been approved by the University IRB (12 months). Please provide the University IRB a copy of your Final Report at the completion of your research.

____ Your exempted review research proposal has been approved with recommendations by the University IRB. Please review recommendations provided by the reviewers and **submit necessary documentation for full approval.**

____ Your exempted review research proposal has not been approved by the University IRB. Please review recommendations provided by the reviewers and resubmit, if appropriate.

EXPEDITED RESEARCH

__**X**_ Your expedited review research proposal has been approved by the University IRB (12 months). Please provide the University IRB a copy of your Final Report at the completion of your research.

____ Your expedited review research proposal has been approved with recommendations by the University IRB. Please review recommendations provided by the reviewers and **submit necessary documentation for full approval.**

____ Your expedited review research proposal has not been approved by the University IRB. Please review recommendations provided by the reviewers and resubmit, if appropriate.

Please revise or submit the following:

Marywood University

Marywood
UNIVERSITY
EXEMPT REVIEW COMMITTEE

MARYWOOD UNIVERSITY
EXEMPT REVIEW COMMITTEE
O'Neill Center for Healthy Families, 2300 Adams Avenue, Scranton, PA 18509

DATE:	August 27, 2012
TO:	Timothy Campbell, MSN, PhD-c
FROM:	Marywood University Exempt Review Committee
STUDY TITLE:	[366684-1] Gender Equity in Nursing Education: Student Perceptions and Impact on the Educational Experience
MU ERC #:	2012-E135
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	August 27, 2012
EXPIRATION DATE:	August 27, 2013
EXEMPT CATEGORY:	*Category 2*

Thank you for your submission of an Exemption Request for this research study. Marywood University's Exempt Review Committee has **APPROVED** your request for an Exemption. The project meets the criteria defined by federal regulations for an Exemption and involves minimal risk to participants. All research must be conducted in accordance with this approved submission.

Please remember only the approved participant letter and advertisements, if applicable, may be used in this research.

Please also note that:

- Any REVISION TO THE PROTOCOL must be submitted to and approved by the ERC prior to initiation.
- All SERIOUS and UNEXPECTED adverse events must be reported to this office.
- All NON-COMPLIANCE issues or COMPLAINTS regarding this study must be reported to this office.

- This project requires CONTINUING REVIEW by this office on an annual basis. Should your study continue beyond the one-year approval period, please reapply prior to the expiration date. No research may continue beyond the expiration date until approved by the ERC.
- A CLOSURE REPORT is due prior to August 27, 2013, unless you are applying for renewal/ continuing review.

The appropriate forms for any of the reports mentioned above may be found in the Forms and Templates Library on IRBNet.

If you have any questions, please contact the Exempt Review Coordinator at 570-961-4778 or lacamlet@marywood.edu. Please include your study title and MU ERC number in all correspondence with this office.

Thank you and good luck with your research!

Exempt Review Staff

University of Pennsylvania

FFr: Coleman, Christopher Lance [colemanc@nursing.upenn.edu]
TTo: Timothy B Campbell
Ccc: Coleman, Christopher Lance

Hi Tim, you now have IRB approval for Penn!

Dr. Coleman

Christopher Lance Coleman, PhD, MS, MPH, FAAN
Co-Director, Center for Health Equity Research
Fagin Term Associate Professor of Nursing and Multicultural Diversity
Associate Professor of Nursing in Psychiatry
Co-Chair American Academy of Nursing Expert Panel Cultural Competence
Faculty Advisor, Male Association of Nursing, University of Pennsylvania
Senior Fellow in the Center for Public Health Initiatives
Institute on Aging Fellow
Family and Community Health Division
Department of Psychiatry, School of Medicine
Center for Health Equity Research, 2L rm 222
University of Pennsylvania, Claire M. Fagin Hall
418 Curie Blvd Philadelphia, PA, 19104-4217
Office (215) 898-0760 Fax (215) 573-7496 Fax (215) 573-9193
colemanc@nursing.upenn.edu

Dr. ColeMAN NURSE **Blogger-Reflections on Nursing Leadership Sigma Theta Tau International**

Nursing prof recalls 30-year war against HIV/AIDS | Penn Current

Penn Nursing Science - University of Pennsylvania School of Nursing: Penn Nursing

Author: "Dangerous Intimacy" http://amzn.com/1607970392

West Chester University

Protocol ID # 20130204-2
This Protocol ID number must be used in all communications about this project with the HSC.

TO: Timothy Campbell, Cheryl Monturo

FROM: WCU Human Subjects Committee (HSC)

DATE: 2-4-2013

Title: **Gender Equity in Nursing Education: Student Perceptions and Impact on Education Experience.**

Thank you for the submission of your protocol. The application materials have been reviewed and are accepted as submitted. Your approval category and terms of approval are included below.

☐ **Expedited Approval**
☐ **Full Board Review Approval**
x☐ **Exempt From Further Review**

Date of Approval: 2-4-2013

Signature: Paul K. Smith
Member of the Human Subjects Committee

x☐ This protocol has been approved for a period of one year. Approximately two months prior to the approval end date, you will receive a Continuing Review Request form. Please complete it and return it to Human Subjects Committee, even if the project has been completed or is discontinued.

Please remember that any changes to the protocol will require the submission of a revised protocol to the HSC. Any adverse reaction by a research subject is to be reported immediately to the Chair of the Institute Review Board (Marc Gagne, Ph.D.) and Chair of HSC (Paul K. Smith, Ph.D.) through the Office of Sponsored Research (OSR) at Research@wcupa.edu. Dr. Smith can also be reached directly at 610-436-2764 or via e-mail at psmith@wcupa.edu.

Questions concerning the HSC decision or any concerns may be directed to the HSC Chair.

Permission to adapt the Policy and Procedures for the Protection of Human Subjects in Research & Related Activities was obtained from Ms. Stremke, Office of Research and Sponsored Programs, Florida Gulf Coast University on February 2, 2008.

Form Approved 04/28/2010

1

Widener University

Subject: Re: Dissertation Research

From: njcolby@widener.edu
Date: 10/26/12 11:58 AM
To: Timothy B Campbell <t.b.campbell2@iup.edu>
Cc: ebrown@mail.widener.edu

Tim, sorry for the delay. We have been swamped at this point in the semester! I just spoke with Dr. Brown who has seniors on Thursdays 9-11 and 1-3. Unfortunately, there is no day this semester where all the seniors (about 110) are together in one class, but the class Dr. Brown co teaches, at least they are the same day for the sections. If you were free on thursday, November 8, you could address one group at the end of class, and the other at the beginning. This would just mean hanging around here on campus for lunch that day. 11/8 is a day that Dr. Brown teaches. if that day doesn't work, I could investigate and talk to the others who may be teaching on other thursdays. there are a few students who are out of progression, and I could invite them as well.

I apologize, i only skimmed your information thus far - am I correct that it is an online process? and that you wish to come to class to introduce it to them and explain? would they need to be doing the survey at the time you are here? or can they do it afterwards. How long do you anticipate needing each group?

thanks so much, I hope we can be of assistance for you! normajean

---- Original message ----
> Date: Sun, 21 Oct 2012 13:53:01 -0400
> From: "Timothy B Campbell" <t.b.campbell2@iup.edu>
> Subject: Dissertation Research
> To: <njcolby@widener.edu>
> Cc: <deangarrison@widener.edu>
>
> Dr. Colby,
>
> Dr. Garrison indicated I should contact you related to Widener senior
> nursing students participating in my dissertation research. She may
> have forwarded my introduction letter about the study. If not, I am
> investigating senior nursing student perceptions of gender equity in
> nursing education. I have attached the IRB approval from IUP. I have
> also included a brief protocol for the study and a study flyer for
> your information. I would be interested in coming to Widener to
> recruit senior students before the end of the current semester. Let
> me know available days and times I could gain access to the senior
> nursing students and if you need any additional information related to
> my study. I appreciate your interest and anticipate working with you
> and the Widener students in the future.
>
> Thanks for your time and consideration, and I look forward to your
> response.
>
> tim
>

Appendix H

[IUP Logo/Letterhead]

Introductory Text / Informed Consent

You are invited to participate in a research study. The following information is provided in order to help you to make an informed decision whether or not to participate before you begin the on-line questionnaire. You are only eligible to participate if you are a nursing student in the final year of your baccalaureate nursing education program in Pennsylvania. The purpose of this study is to understand student perceptions of the nursing education experience in the classroom and clinical environment.

Participation in this study will require approximately 20 minutes of your time. Participation or non-participation will not affect the evaluation of your performance in any of your nursing education classes. The study involves the completion of an on-line questionnaire about your educational experience in nursing education. At the end of the questionnaire, you may opt to enter a raffle for one of twelve $25 Amazon.com gift cards in recognition of your participation and to show appreciation for your efforts.

Your participation in this study is voluntary. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigator, any instructor, or your standing in your program. Your decision to participate will not result in any loss of benefits to which you are otherwise entitled. If you choose to participate in the on-line questionnaire, you may withdraw at any time by exiting the program. If you choose to participate, all answers to the questionnaire submitted will be anonymous. No identifying electronic or demographic information will be requested.

All data from the study will be held in strict confidence and will have no bearing on your academic standing or services you receive from your University. Your response will be considered only in combination with those from other participants. Any reports on the data will be in the aggregate. The information obtained from this the study may be published in scientific journals or presented at scientific meetings but your identity and participation will be kept strictly confidential.

Your willingness to participate in this study and receipt of this informed consent will be assumed with completion of the on-line questionnaire. If you choose not to participate, no further response or action is required, just exit this webpage.

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This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).