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**Self-Care Practices in Doctoral Nursing Students and Effects on Educational
Experience**

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Abstract

Problem: Doctoral nursing students are often faced with stressors on top of their schooling, one of which is continuing to work while pursuing their education. This in combination with normal life stressors can be challenging. The purpose of this project was to survey doctoral nursing students on what their current self-care practices.

Methods: An exploratory needs assessment project was created to gather data from Doctor of Nursing practice (DNP) and Doctor of Philosophy (PhD) nursing students in an urban, mid-sized, Midwestern, public university to identify current self-care practices, barriers to self-care, preference of self-care practices, and the impact these practices have on their educational experiences.

Results: 50 completed surveys were completed by the doctoral nursing students. Household income as a variable is statistically significant predictive of a higher category of number of times self-care is performed a week, $\chi^2(4) = 14.352$, $p = .006$. The odds of male vs female student having a higher number of times self-care practiced each week was 9.828, a statistically significant effect. The odds of a student who works in nursing education, compared to other nursing professions, having a higher number of self-care practices each week was -20.148, a statistically significant effect.

Implications for Practice: There is a need for additional data of the self-care practices of doctoral nursing students. Implementation of an MBSR type program during the transitional years two and three of a traditional four-year doctoral nursing program is needed due to the drastic decrease in self-care between these years.

Self-Care Practices in Doctoral Nursing Students and Effects on Educational Experience

One of the largest groups of professionals is nurses, and as of the beginning of 2022, there were 4.2 million registered nurses in the United States (U.S.) (AACN, 2022a). Additionally, in the fall of 2020, 3.1million students attended graduate programs, of these, 40,834 were enrolled in doctoral nursing programs (NCES, 2022, AACN, 2022a). Doctoral nursing students often focus on their patients' health and their own education more than their own well-being. This population often neglects their own vital needs and instead focus on those for whom they are seeking their education - the patients. Patient care and academic stress can impede doctoral nursing students from engaging in healthy self-care practices, which in turn can lead to reduced physical and psychological health, increased burnout, and use of unhealthy coping mechanisms (Younas, 2017). Nurses who work in a high stress setting job are 80% more likely to have suffered a major depressive episode in the previous year, and work stress is highly correlated to depression in nurses (Botha et al., 2017). In a variety of practice settings nationwide, burnout among nurses continues to be reported by registered nurses (Shah et al., 2021). Students in graduate school also show increasing rates of high stress, leading to negative academic performance and emotional and health consequences (Yusufov et al., 2019).

Lack of self-care in nurses increases burnout and reduces resilience at work. A lack of self-care in combination with job-related stressors and long work hours without opportunity to rejuvenate, can lead to increased nurse turn over and poor quality of patient care due to inadequate staffing (TWU, 2021). Graduate level students also struggle with incorporating self-care practices into their busy schedules. Lack of self-care

activities in combination with decreased availability of these activities while in graduate programs increase mental health problems as well as burnout and low resilience (Forrester, 2021). This in turn increases student drop out by negatively impacting academic performance.

There is a clear indication for improved self-care in both nurses and graduate nursing students. Doctor of Nursing Practice (DNP) students are in a unique position as there is an expectation of continuing to work as a nurse while obtaining a graduate degree unlike most other graduate education programs. Barriers to self-care for DNP students include balancing the demands of coursework and having a personal life, the cost of the program, limited time to be focused on their DNP project, and a difficult time obtaining satisfactory preceptors (AACN, 2022b).

Self-care does not have a singular definition, but instead is multi-faceted. The World Health Organization's (WHO, 2022) definition of self-care incorporates individuals, families, and communities' ability to maintain their health, promote health, prevent disease, cope with illness and disability all with or without a supporting health provider. Self-care can also be defined as caring for oneself through self-reliance, self-awareness, and self-control in order to obtain, maintain, and promote their optimal health and wellness (Martinez et al., 2021). Self-care can be categorized into subgroups known as the Seven Pillars of Self-Care which includes mental, emotional, physical, environmental, spiritual, recreational, and social (International Self-Care Foundation, 2022). When self-care practices are prioritized, it improves holistic health and short- and long-term well-being (Chatterjee & Jethwani, 2020).

Although many stressors accompany doctoral nursing students, it is realistic to incorporate helpful strategies to cope with stress, rather than trying to eliminate stressors. It is pertinent to incorporate the use of self-care practices into the doctoral nursing curriculum due to the prevalence of high stress and burnout among this population. Zahniser et al (2017) states that the incorporation of a university supported self-care resiliency program dedicated to self-care may be beneficial. Prior to creating such a project, a program plan will need to be drafted, with its first step being a needs assessment of the students and what their current self-care practices entail (Issel, 2016).

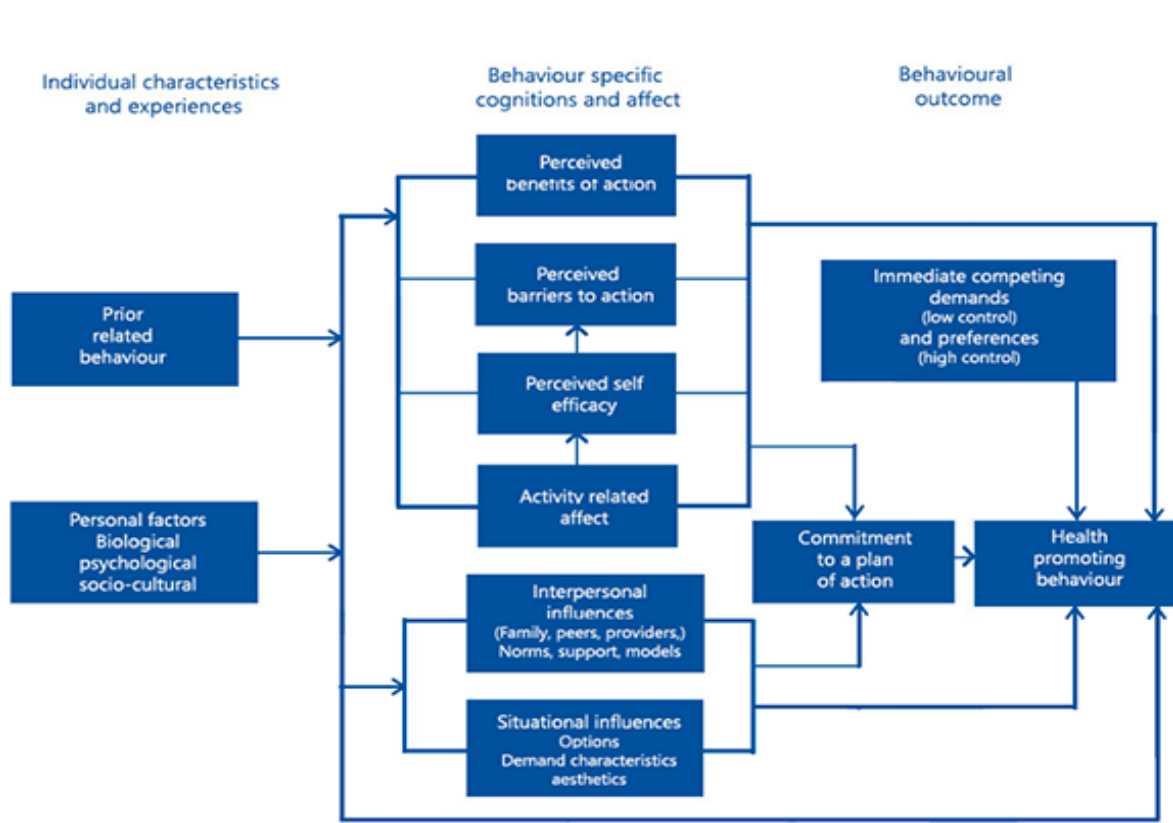
The purpose of this program evaluation is to conduct an exploratory needs assessment with doctoral nursing students in an urban, mid-sized, Midwestern, public university to identify current self-care practices, barriers to self-care, preference of self-care practices and the impact these practices have on their educational experiences. The aim of this evaluation is to assess 20% of current doctoral nursing students at the participating university, identify the rate and frequency of current self-care practice in this population, the top three barriers to self-care, the top three self-care practice preferences, and the top three themes of how the lack of self-care impacts educational experiences.

This needs assessment is the first step towards a system focused self-care environment as indicated by the Self-Care Matrix. In the first level of this framework, self-care activities specific to individuals are listed; these activities are synonymous to the material that will be gained by the needs assessment. In conjunction with this matrix, Pender's Health Promotion Model (see Figure 1) will also be used as a framework when assessing doctoral nursing students and their self-care. This framework lends itself to

conceptualize how self-care affects student decisions regarding their health and wellness practices. Pender’s Health Promotion Model’s initial category focuses on an individuals’ specific characteristics and intrinsic factors. Furthermore, it assesses experiences and extrinsic factors and their impact on an individual’s use of inward focused self-care. Intrinsic and extrinsic factors alike play a large role in barriers to self-care in the working doctoral nursing student.

Figure 1

Pender’s Health Promotion Model



(Business Bliss Consultants FZE, 2018)

The primary outcome measure of this study is current self-care practices of doctoral nursing students. Secondary outcome measures are qualitative questions asked

of the students: In doctoral nursing students attending a mid-sized, urban, Midwestern, public university:

1. What is the current rate and frequency of self-care practices?
2. What are the top three identified barriers to self-care?
3. What are the top three identified preferences in self-care practices?
4. What are the top three themes of self-care identified as impacts of self-care, or lack thereof, on educational experiences?

Literature Review

A review of the literature was conducted using PubMed, CINAHL, Medline (EBSCO), APA PsychArticles, APA PsycInfo, and Cochrane library databases. The key terms of *self-care*, *burnout*, *doctoral nursing students*, *mindfulness*, *graduate student*, and *doctorate students* were used with the Boolean operators AND and OR. This resulted in 1,063 articles. Inclusion criteria included articles available in full text, written in English language, and published between 2017 and 2022. Exclusion criteria included articles not available in full text, written in languages other than English, and those published before 2017. After these inclusion and exclusion criteria were applied the refined search yielded 221 studies. Duplicates were removed, abstracts were reviewed, and 22 articles were retained for use in this literature review.

Self-care

Using the integrative definition of self-care from various references, it is understood that self-care means obtaining emotional, physical, and mental health by caring for oneself in a variety of ways. Some examples from the research on self-care

strategies are sleep hygiene, art therapy, diaphragmatic breathing, music, healthy eating, physical activity, stress management, healthy relationships, and mindfulness. A study by Han et al. (2020) found that nurses with poor sleep hygiene are more vulnerable to stressful situations and lack resilience in their profession, in turn increasing work and school burnout. A study performed by Blackburn et al. (2020) involving oncology nurses recommended that resilience programs incorporating mindfulness, art therapy, diaphragmatic breathing, and music can be effective in decreasing secondary trauma and nurse burnout as well as improving nurse resilience. This study identified that self-care practices led to nurses who were more responsive, engaged, dependable, and less inclined to make mistakes (Blackburn et al, 2020). Low staffing, extensive hours, and nursing shift work can be stressful and add to burnout, poor job satisfaction, and myriad health related issues such as sleep disturbances and obesity (Ross et al., 2018). Stressful life events are commonly cited as the cause of a lack of self-care and could be addressed by building resilience to better manage life stressors (Riegel et al., 2021).

Several studies indicated mindfulness-based programs as a form of self-care and discuss how they reduce stress in nurses, graduate nursing students, and advanced practice nurses. Botha et al. (2017) and Chisholm-Burns et al. (2021) used perceived stress as a baseline measurement of the nurses and/or graduate students before implementation of Mindfulness Based Stress Reduction (MBSR) training. These studies conclude that mindfulness-based programs reduce stress in nurses and graduate nursing students (Botha et al, 2017). One study achieved a 100% compliance rate when implementing a MBSR program within a nursing educational curriculum (Cornelius & Iannino-Renz, 2021). Self-care MBSR practices have been shown to improve the

psychological health of health care providers, but these types of practices are not widely known or used in the health care community (Cornelius & Iannino-Renz, 2021). Nurses have rated mindfulness training as beneficial both in their work and home life (Daigle et al., 2018). Mindfulness training along with other self-care practices may serve as a buffer to burnout in a high stress, highly competitive academic environment (Kerrigan et al., 2017).

Other studies investigated the effect of self-care interventions on the lives of nurses, graduate student nurses, and advanced practice nurses. Lemay et al. (2019) focused on the impact of self-care practices such as yoga and meditation on the stress and anxiety levels of a health care professional college student. These practices were implemented during the final six weeks of the semester, prior to final examinations. After the intentional use of self-care practices, the students' anxiety and stress levels had significantly decreased with scores dropping an average of 9.6 points ($Mdn = -9$; 95% CI: -13.8, -5.3, $p = <.001$) and perceived stress scores dropping an average of 7.9 points ($Mdn = -8$; 95% CI: -11.8, -4.0, $p = <.001$). The total level of mindfulness significantly increased with scores increasing an average of 4.6 points ($Mdn = 4.0$; 95% CI = 2.0, 7.2, $p = <.001$) which was statistically significant. One strength of this study was the autonomy it gave to the student for their own self-care implementation, however, there was a lack of long-term follow up.

Additionally, Younas (2017) identified which self-care practices and behaviors were being performed by nursing students throughout the duration of their education. This study showed that their emotional and psychological health and self-care are neglected in the beginning of nursing education and the reason was identified as students

being unaware of strategies of self-care and stress management skills. Academic stress, workload, and inadequate knowledge of self-care strategies were cited as reasons self-care levels were low.

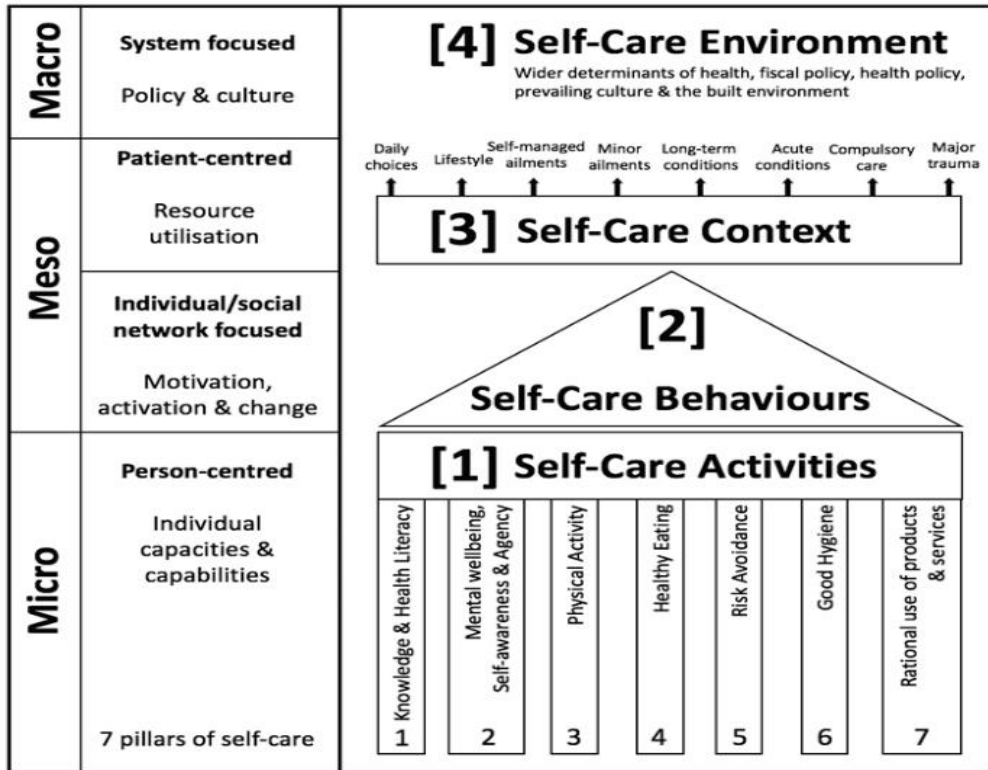
Self-care is not always achievable or easily maintained as a graduate student or as a nurse. Ross et al. (2018) states that nurses have the education regarding health-promoting and health-hindering behaviors but that does not necessarily translate to health-promotion activities being implemented into their own self-care. Many barriers to self-care in nurses were identified including personal factors, perceived benefits, perceived barriers, self-efficacy, situational influences, and interpersonal influences (Ross et al., 2018). Another study identified barriers to self-care as behavioral changes, including difficulty deciding on when to implement a healthy lifestyle, unhealthy behavior attachment, issues maintaining healthy behaviors over time, and lack of motivation to change (Riegel et al., 2019). Ross et al. (2018) also explored barriers of self-care using the Pender's Model of Health Promotion which focuses on intrinsic and extrinsic factors as well as examples specific to each nurse to help grasp the complexity of their self-care barriers (Ross et al., 2018). Examples of intrinsic, or personal factors were established as age, gender, past experiences, fatigue, anxiety, and depression. Extrinsic factors include interpersonal influences such as family, friends, and peers, while situational influences are that of institutional and unit support or norms, work schedules, and outside demands (Ross et al., 2018).

Framework

The evidence-based practice framework to guide this project is the International Self-Care Foundation Self-Care Matrix framework (see Figure 2). This model consists of

three cardinal dimension levels of self-care: micro, meso, and macro. This framework was selected to guide this project because it is a matrix that includes several subgroups imbedded in the cardinal dimension levels that can grow with the future program development derived from this needs assessment. These subgroups include self-care on varying levels: person-centered, person/social network centered, and system focused. These subgroups include self-care activities, self-care behaviors, self-care context, and self-care environmental factors focuses that tie into this project and its plan for a needs assessment. The Self-Care Matrix framework also has a consistent outlook of advancement: the micro level of the individual and self-care, the meso level involving a broader scope of the individual and their self-care, and the macro level involving system focus and self-care. For this project the focus is on the micro level of the matrix due to its grasp of self-care practices as well as the seven pillars of self-care. A second framework that will be implemented in conjunction with the Self-Care Matrix is Pender's Health Promotion Model (see Figure 1). Pender's model is a tool for nurses to help plan behavioral modification interventions in order to assist in the improvement and prevention of unhealthy behaviors. Pender's model bases its theory on individuals' characteristics and life experiences and how they have a direct correlation on their decisions and actions regarding their health. These characteristics and experiences are categorized into intrinsic and extrinsic factors and in this project are furthermore explored using previously described scales and open-ended questions.

Figure 2*Self-Care Matrix*



(El-Osta et al., 2019)

Gaps in Literature

There are gaps in self-care research, particularly with doctoral nursing students. Most current research has been found in areas such as health promotion, disease prevention, treatment, rehabilitation, and palliative care (Jaarsma et al., 2021). These arenas are profoundly patient centered and do not pertain to doctoral nursing student or nurse centered research. Due to the abundance of research on self-care focused on patient’s, it is important to clarify the definition of self-care, the barriers to, and the individual’s preferences of self-care (Martinez et al., 2021). While self-care research is on the rise worldwide, there remains limited research pertaining to self-care or self-care promoting interventions specifically (Jaarsma et al., 2021). The lack of clarity on the specific scope of self-care has been an ongoing issue (El-Osta et al., 2022). Studies on

barriers to self-care has increased over the past several years, but each study is often specific to patients with a disease process and not specifically with nurses. Specific knowledge gaps include: the effect of culture on making decisions regarding self-care, the effect of others on self-care (family, friends, partners, acquaintances, health care professionals), stressful life events that affect self-care and the resilience towards these life events, and how habit formation influences behavior change (Riegel et al., 2019). Additionally, one literature review found limited studies performed to explore self-care practices and behaviors of nursing students across the entities it evaluated (Yonas, 2017).

Method

Design

This program evaluation project was an exploratory needs assessment intended to gather both quantitative and qualitative data through a voluntary survey of graduate nursing students attending a mid-sized, suburban, Midwestern, public university's college of nursing. The data collected included the demographic information of the students as well as the rate and frequency of their self-care practices, barriers to self-care, and preferences of self-care in doctoral nursing students in both the Doctor of Nursing Practice (DNP) and Doctor of Philosophy in Nursing (PhD in Nursing) programs.

Setting

This project took place in a college of nursing at a medium sized public university in a suburban neighborhood in the Midwest. This university has approximately 15,200 students and has 12 doctoral majors offered across the campus. The College of Nursing at this university has two doctoral programs, the PhD in Nursing and the DNP, and approximately 158 students attend these programs.

Sample

This project assessed the needs of DNP and PhD in Nursing students who were enrolled at the university as part-time or full-time status. No identifying information by the students was collected during the survey, and all participants were assigned a numeric identifier to track their qualitative responses. Inclusion criteria included part-time or full-time doctoral nursing students enrolled at the participating university who were over the age of 18. Exclusion criteria included less than part-time doctoral nursing students or any other non-nursing doctoral student and students who were under the age of 18.

Approval Process

This project was approved as an exempt study by the Institutional Review Board (IRB) at the University of Missouri--St. Louis prior to data collection to ensure human subjects protection.

Procedures

Stakeholders in the graduate nursing programs were gathered to discuss this project and it was determined that this needs assessment would benefit future curricular development and graduate nursing program improvement efforts. After IRB approval, a recruitment email was sent to graduate nursing students list via email with both a recruitment flyer and a link to an anonymous electronic Qualtrics survey. This email was sent out once a week for four weeks to help increase participation in the needs assessment. Data was then analyzed, and results and recommendations were disseminated to key stakeholders to guide future program development.

Data Collection

Qualtrics surveys each have a unique numeric identifier and no identifying information was gathered in this survey. Participants were notified of the voluntary nature of the survey on the first page and consent was implied by the participants' progressing to the next page of the survey. Demographic data was collected, including age, gender, race/ethnicity, year in the graduate program, type of graduate program (DNP or PhD), work time status, type of current nursing work, nursing specialty and group belonging. Additionally, six qualitative questions were asked to the students to further clarify their self-care practices, barriers to self-care, and the impact of self-care on their educational experiences. Student data was collected using an electronic Qualtrics survey and all de-identified data was securely transferred to a Microsoft Excel spreadsheet and then again to the Statistical Package for Social Sciences (SPSS) version 28 for data analysis. All unidentifiable data was stored on a password-protected desktop owned by the primary investigator.

Data Analysis

Quantitative data was analyzed using descriptive statistics including frequencies, measurements of central tendency, distribution, and variance. Qualitative data was transferred in a Microsoft Excel document and coded to identify themes in responses by the PI and two other members of the evaluation team and the consensus method was utilized to identify the final thematic results.

Results

In March of 2023, an online survey was sent out electronically via email to the DNP and PhD students at the school of nursing and a total of 50 students completed the survey anonymously. This return of survey resulted in a 31.6% response rate of the total

number of doctoral students, 45 returned surveys being that of DNP students (32.6% of all DNP students) and five being PhD students (25% of all PhD students) (see Figure A1). The response sample was 84% female ($N = 42$) and 16% male ($N = 8$) (see Figure A2). While ages ranged from 20 to 46 and above, 50% of the sample was between the ages of 26 and 30 years old (see Figure A3). Household income of the sample ranged from \$0-50,000 to \$200,001 and above with the highest proportion, or 32%, having an annual household income between \$50,001 to \$100,000 (see Figure A4). The primary sample characteristics included being of Caucasian race ($N = 43$, 86%) (see Figure A5), employment status of full-time ($N = 25$, 50%) (see Figure A6), employment as a bedside Registered Nurse ($N = 38$, 72%) (see Figure A7), working in the specialty of pediatrics ($N = 14$, 28%) (see Figure A8), and either being in their third year of the program ($N = 18$, 36%) or the fourth year ($N = 18$, 36%) (see Figure A9). Years of experience varied among participants with 46% ($n = 23$) having five years or less of experience as a registered nurse, 32% ($n = 16$) having between 6-10 years of experience, 8% ($n = 4$) having between 11-15 years of experience, and 14% ($n = 7$) having greater than 15 years of experience (see Figure A10). Lastly, 62% of participants reported having some type of social group belonging, while 36% identified that they did not belong to any specific group (see Figure A11).

Self-Care Practices Current

A cumulative odds ordinal logistic regression with proportional odds was run to determine the effect of gender, age, race, total household income, doctoral nursing program (DNP vs PhD), year in the doctoral program, years as a nurse, work status, type of nurse, typing of nursing specialty, and group belonging, on how many self-care

practices were being utilized. Through the survey, open ended questions were asked, resulting in an array of responses: words, numbers, and number ranges. Since the data was collected like so, it had to be translated into ranked categories, making the data ordinal dependent variables, ultimately finding the prediction and relationships of the ordinal data and leading to an ordinal logistic regression. The final model statistically significantly predicted the dependent variables over and above the intercept-only model, $\chi^2(4) = 148.778, p < .001$. The assumption of proportional odds was met, as assessed by a full likelihood ratio test comparing the fit of the proportional odds location model to a model with varying location parameters, $\chi^2(8) = 14.404, p = 1.000$. The deviance goodness-of-fit test indicated that the model was a good fit to the observed data, $\chi^2(296) = 82.907, p = 1.000$. The final model statistically significantly predicted the dependent variable over and above the intercept-only model, $\chi^2(40) = 176.996, p < .001$.

Although gender was not found to be statistically significantly predictive of number of self-care practices, being a nurse for 11-15 years was found to be statistically significantly predictive of a higher category of number of self-care practices. Therefore, it is likely that students that have been a nurse for fewer years, will need additional support in building their number of self-care practices. A test of model effects shows that none of the independent variables are statistically significant predictive of a higher category of self-care practices in their entirety or when each category is assessed independently (see Table B1 and Table B2).

How Often Practice Self-Care

A cumulative odds ordinal logistic regression with proportional odds was run to determine the effect of gender, age, race, total household income, doctoral nursing

program (DNP vs PhD), year in the doctoral program, years as a nurse, work status, type of nurse, typing of nursing specialty, and group belonging, on how often self-care practices were being practiced. Through the survey, open ended questions were asked, resulting in an array of interval rated responses. Since the data was collected like so, the prediction and relationship needed to be found between the interval data provided, leading to an ordinal logistic regression. Test of model effect shows that gender as a variable is statistically significant predictive of a higher category of number of times self-care is performed a week, $\chi^2(1) = 5.061, p = .024$. Additionally, the test of model effect shows that household income as a variable is statistically significant predictive of a higher category of number of times self-care is performed a week, $\chi^2(4) = 14.352, p = .006$. The test of model effect also shows that type of nursing as a variable is statistically significant predictive of a higher category of number of times self-care is performed a week, $\chi^2(12) = 26.212, p = .010$.

When each category within each independent variable is assessed for predictiveness, male gender, household income of \$50,001-\$100,000, and working in nursing education were each found to be statistically significantly predictive of lower amounts of self-care performed weekly. The odds of male students having a higher number of times of self-care practiced each week was 9.828, 95% CI, [3.545, 96966412.7] times that of female students, a statistically significant effect, Wald $\chi^2(1) = 5.061, p = .024$.

The odds of students with a household income between \$50,001-\$100,000, having a higher number of self-care practices each week was -14.813, 95% CI, [2.973 E-13, .457] times that of students in all other household income ranges, a statistically

significant effect, Wald $\chi^2(1) = 4.282$, $p = .039$. This can alternatively be stated as those students with a household income between \$50,001-\$100,000 are 14.813 times less likely to have a higher number of self-care practices each week.

The odds of a student who works in nursing education having a higher number of self-care practices each week was -20.148, 95% CI, [7.253 E-18, .436] times that of all other areas of nursing profession (i.e. administration, management, floor nursing), a statistically significant effect, Wald $\chi^2(1) = 4.179$, $p = .041$. This can alternatively be stated as those students working in nursing education are 20.148 times less likely to have a higher number of self-care practices each week.

Hours of Self-Care Practiced Weekly

When all independent variables were simultaneously assessed for predictiveness of number of hours of self-care per week, the data was not found to be a good fit for a multiple regression analysis, likely due to a small sample size and probable high correlations between several independent variables. Therefore, separate multiple regression analyses were run on pairs of likely uncorrelated independent variables.

A multiple logistic regression was run between gender, age range, and numbers of hours of self-care per week. Through that survey, open ended questions were asked, resulting in an array of responses: words, numbers, and number ranges. Since the data was collected like this, it had to be translated into ranked categories, making the data ordinal dependent variables. Assumptions one and two were met having a continuous dependent variable and two categorical independent variables. Assumption three was met as there was an independence of residuals was identified as assessed by a Durbin-Watson statistic of 2.051. Assumption four and five were met as the relationship between

independent variables was linear and there was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values.

Assumption six was met as no multicollinearity was detected with a tolerance of .976.

Assumption seven was met as there were no significant outliers, high leverage points, or highly influential points. Assumption eight was met as distribution of residuals is

approximately normally distributed upon visual inspection of histogram and normal P-P plot of regression standardized residual. R^2 for the overall model was .010 with an

adjusted R^2 of -.034 indicating small effect size with $R = .099$, according to Cohen

(1988). Age and gender were not found to be statistically significantly predictive of hours of self-care per week, $F(2, 45) = .222, p = .802$.

A multiple logistic regression was run between gender, work status, and numbers of hours of self-care per week. Assumptions one and two were met having a continuous dependent variable and two categorical independent variables. Assumption three was met as there was an independence of residuals was identified as assessed by a Durbin-Watson statistic of 1.906. Assumption four and five were met as the relationship between independent variables was linear and there was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values.

Assumption six was met as no multicollinearity was detected with a tolerance of .998.

Assumption seven was met as there were no significant outliers, high leverage points, or highly influential points. Assumption eight was met as distribution of residuals is

approximately normally distributed upon visual inspection of histogram and normal P-P plot of regression standardized residual. R^2 for the overall model was .004 with an

adjusted R^2 of -.040 indicating no effect with an $R = .067$, according to Cohen (1988).

Gender and work status were not found to be statistically significantly predictive of hours of self-care per week, $F(2, 45) = .101, p = .904$.

A multiple logistic regression was run between race, years in program, and numbers of hours of self-care per week. Assumptions one and two were met having a continuous dependent variable and two categorical independent variables. Assumption three was met as there was an independence of residuals was identified as assessed by a Durbin-Watson statistic of 1.375. Assumption four and five were not met as the relationship between independent variables was not linear and there was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. Therefore, a multiple regression analysis of these independent variables was not performed.

A multiple logistic regression was run between race, type of nursing, and numbers of hours of self-care per week. Assumptions one and two were met having a continuous dependent variable and two categorical independent variables. Assumption three was met as there was an independence of residuals was identified as assessed by a Durbin-Watson statistic of 1.802. Assumption four and five were not met as the relationship between independent variables was not linear and there was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. Therefore, a multiple regression analysis of these independent variables was not performed.

A multiple logistic regression was run between household income range, group belonging, and numbers of hours of self-care per week. Assumptions one and two were met having a continuous dependent variable and two categorical independent variables.

Assumption three was met as there was an independence of residuals was identified as assessed by a Durbin-Watson statistic of 1.657. Assumption four and five were met as the relationship between independent variables was linear and there was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. Assumption six was met as no multicollinearity was detected with a tolerance of .888. Assumption seven was met as there are no significant outliers, high leverage points, or highly influential points. Assumption eight was met as distribution of residuals is approximately normally distributed upon visual inspection of histogram and normal P-P plot of regression standardized residual. R^2 for the overall model was 2.4% with an adjusted R^2 of -1.9%, indicating a small effect with $R = .155$, according to Cohen (1988). Household income range and group belonging were not found to be statistically significantly predictive of hours of self-care per week, $F(2, 45) = .555, p = .578$.

Additionally, four other multiple logistic regression were run between 1) doctoral program type, years as a Registered Nurse and number of hours of self-care per week; 2) doctoral program type, type of nursing and number of hours of self-care per week; 3) doctoral program type, group belonging, and numbers of hours of self-care per week; and 4) the type of Registered Nurse, group belonging, and numbers of hours of self-care per week. Assumptions one and two were met for all three analyses having a continuous dependent variable and two categorical independent variables. Assumption three was not met in any of these three analyses as there was no independence of residuals was identified as assessed by a Durbin-Watson statistic of .125, .12, .097, and .213 respectively, therefore, a multiple regression analysis was not assessed for these variable pairings.

Qualitative Results

Three separate individuals on the research team themed the qualitative data independently. The consensus method was utilized to identify final thematic results, and the following were the agreed upon themes. For the question of “What self-care practices do you prefer if you had no barriers?”, themes that emerged included: exercise, hobbies, relaxation, being outside, spending time with family/friends/pets, travel, playing/listening to music, and religion. For the question of “How does practice of self-care affect your educational experiences?”, themes were: improves patience/focus/concentration, improves energy/engagement/feeling of success, more relaxed, distracts from schoolwork/feeling of unproductiveness, reduces stress/increases relaxation, feeling of being more healthy/balanced/able to survive, and unsure/not performing self-care. Lastly, for the question of “How does a lack of practice of self-care affect your educational experience?”, themes included: exhausted/decreased energy/burnout, increased stress/frustration/anxiety, hard to focus/ability to think, poor educational performance/unmotivated/less productive/decrease focus, decreased mental and physical health, and more time to work on schoolwork.

Discussion

Overall, this exploratory needs assessment proved very enlightening and can greatly benefit the development of a graduate nursing student wellness and resilience program at this mid-sized, Midwestern public university with the data it retrieved. A recommendation would be to implement a type of Mindfulness Based Stress Reduction program during the transition year of from the second year to the third year in the program. Since this study gathered attention from mostly third-and fourth-year students,

the idea of implementing a MBSR program or similar during the transition from the second year to the third could be beneficial to helping to incorporate more self-care and in turn increasing academic performance. This analysis also helped us identify that time and energy was a major barrier to self-care as well as specific themes of the patients' demographic details (males, household income of \$50,001-\$100,000, career in nursing education) can have impacts of the amount of self-care practiced and those aspects need to be taken into consideration when implementing an MBSR program. Ways to consider these aspects would be to make the program accessible virtually, timing of the administration of the program, exploring gender differences in self-care practices, and targeting specific student groups and how self-care could be more accessible to them.

Limitations

There were a few main limitations of this study. A small sample size as well as implementing this survey at one university limited the data collection. Although collectively there an almost 32% response rate, having a higher number of participants in general would help this dataset be more reliable and help the independent variables to not be as correlated. The probable high correlations between several of the independent variables was also a limitation. Lastly, a select small group answered unlike most other students and forced there to be outliers; while being good for data collection in seeing differences, this may skew the way future implementation of a MBSR program.

Recommendations for Future Research

Two recommendations to the survey for better data analysis and for future program development are as follows. Additional parameters to the responses of the open-ended questions could be incorporated to help with the theming of the qualitative data. The addition of a question regarding the student's children at home or dependents they care for is recommended to add as a survey question. Additionally, administering the survey again to the same target population, but a year later as well as at additional universities, could also result in additional data to analyze. Lastly, engaging in a more robust qualitative analysis through direct interviews or focus groups could be beneficial for the candid effect and raw data collection in real time.

Conclusion

This exploratory needs assessment was a beginning step of analysis needed to answer the study question of "Do the increased levels of stress in their clinical, academic, and personal lives due to lack of self-care during schooling affect the academic performance of doctoral level nursing students?". From the data analysis, there is clearly room for additional data analysis of the self-care practices of doctoral nursing students. The strongest recommendation from this study would be to implement a MBSR type program, or similar, during the transition year between year two and three of a traditional four-year doctoral nursing program.

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Appendix A

Demographic Results

Figure A1

Doctoral Program Enrollment (N = 50)

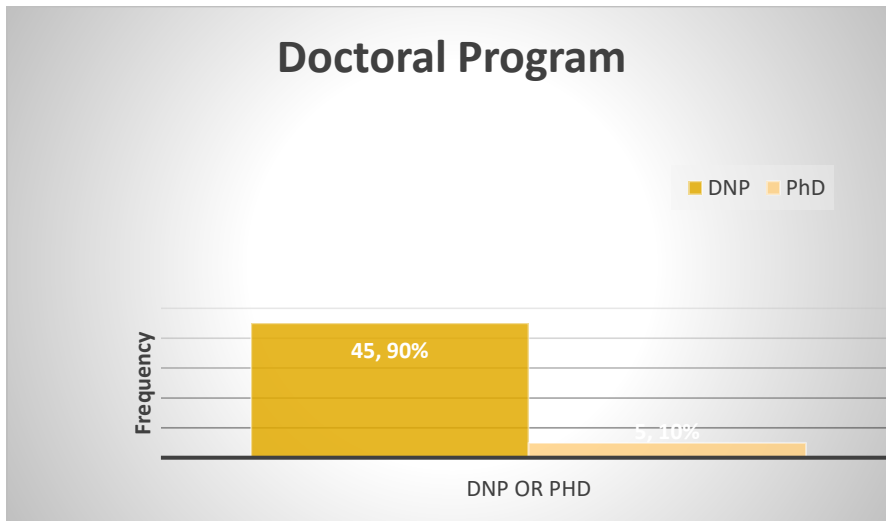
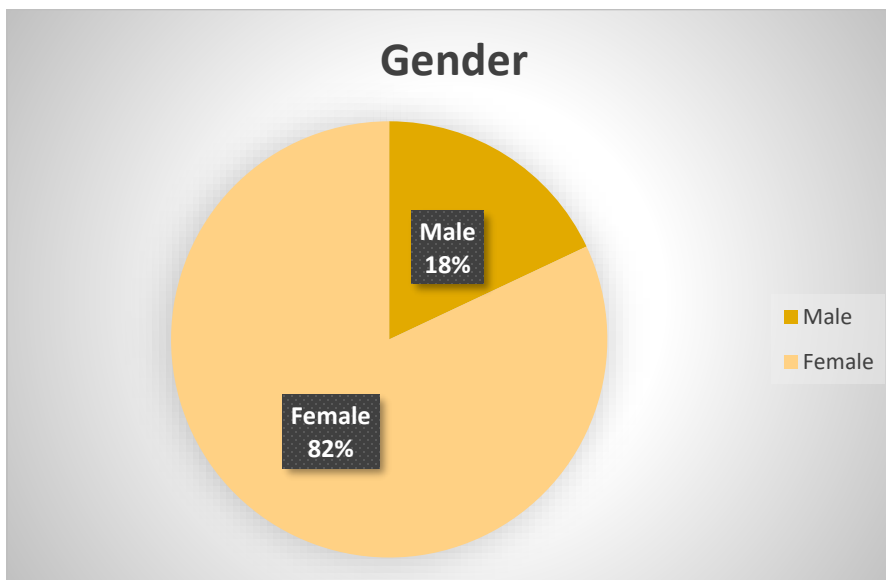


Figure A2

Gender (N = 50)



Appendix A (continued)

Demographic Results

Figure A3

Race (N = 50)

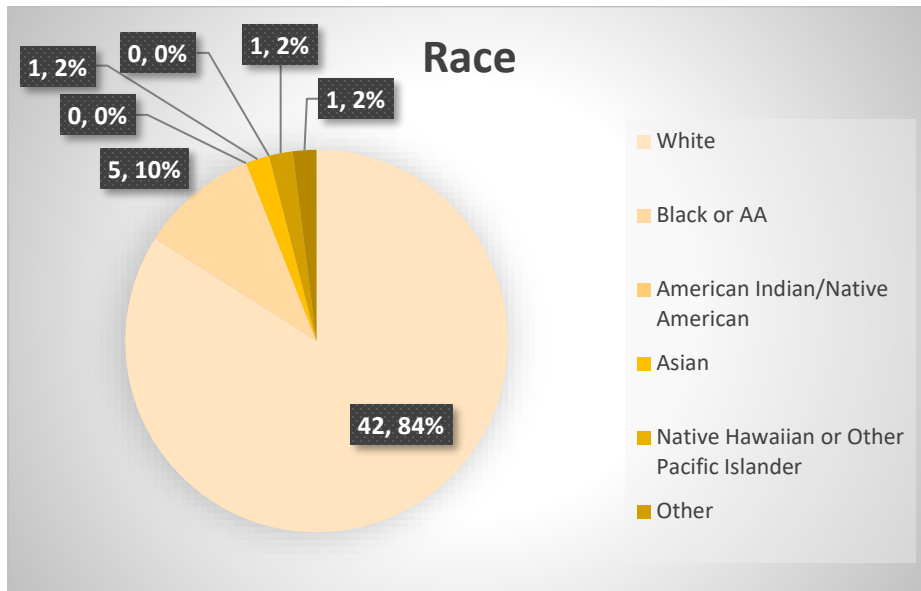
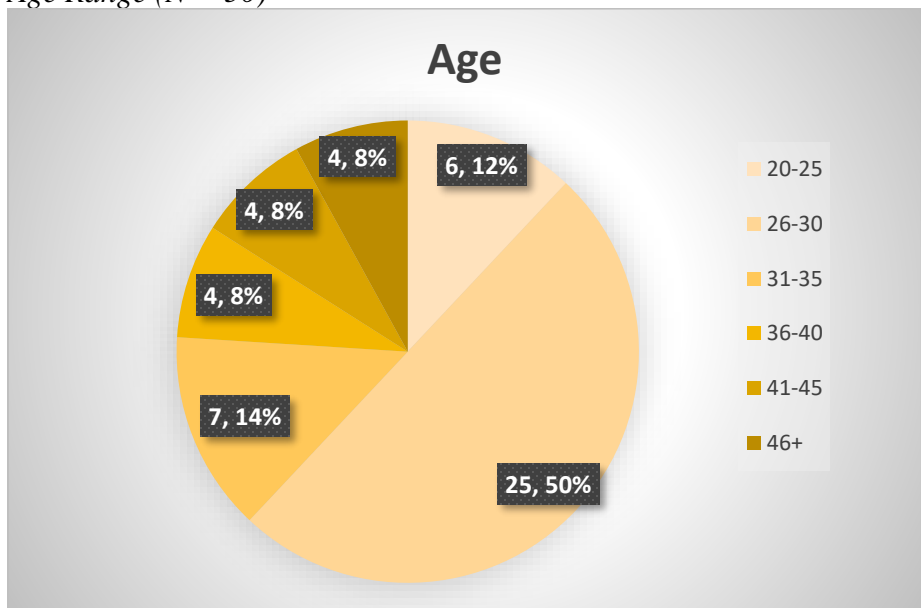


Figure A4

Age Range (N = 50)



Appendix A (continued)

Demographic Results

Figure A5

Household Income Range (N = 50)

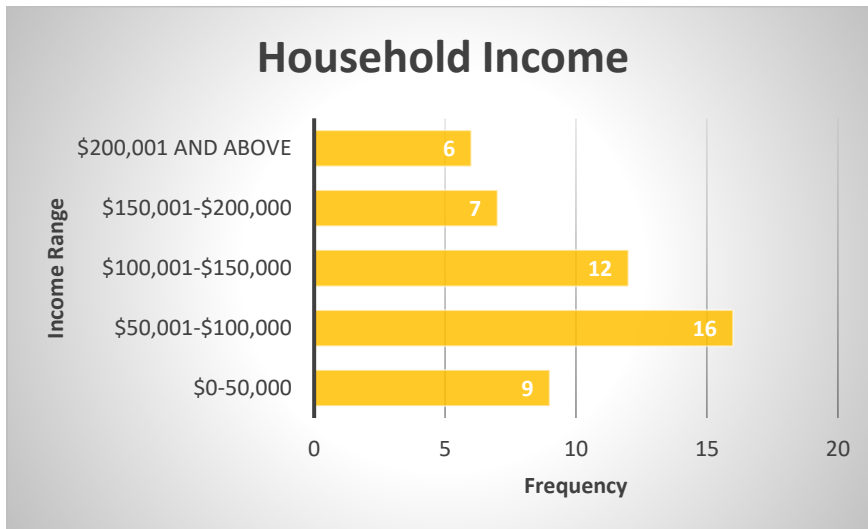
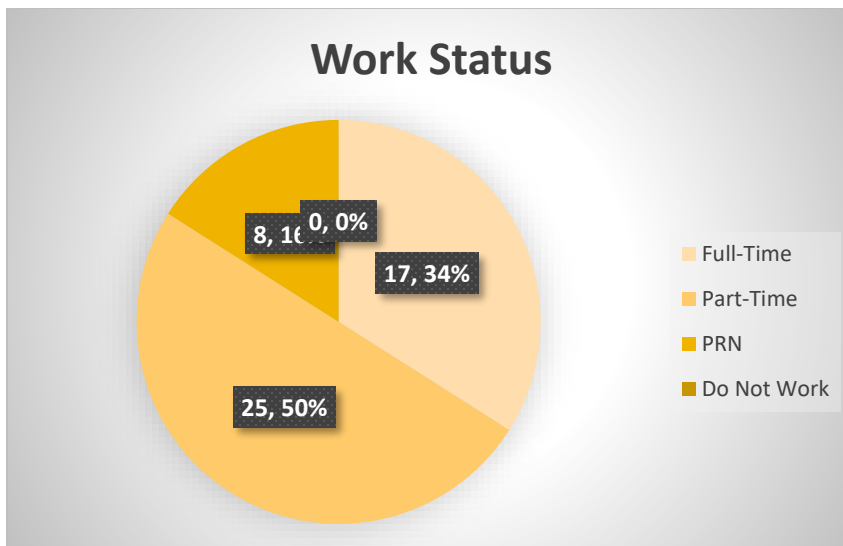


Figure A6

Work Status (N = 50)



Appendix A (continued)

Demographic Results

Figure A7

Type of Nursing (N = 50)

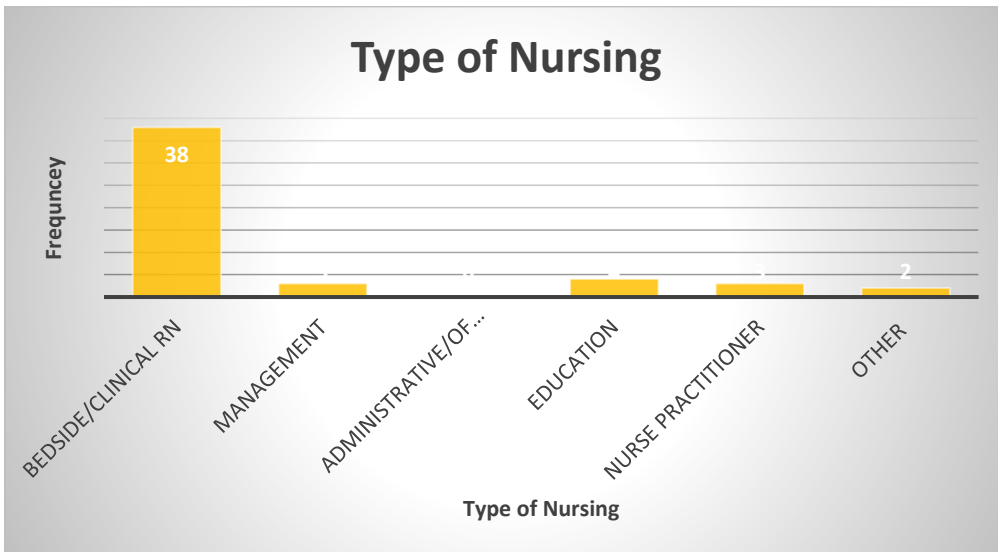
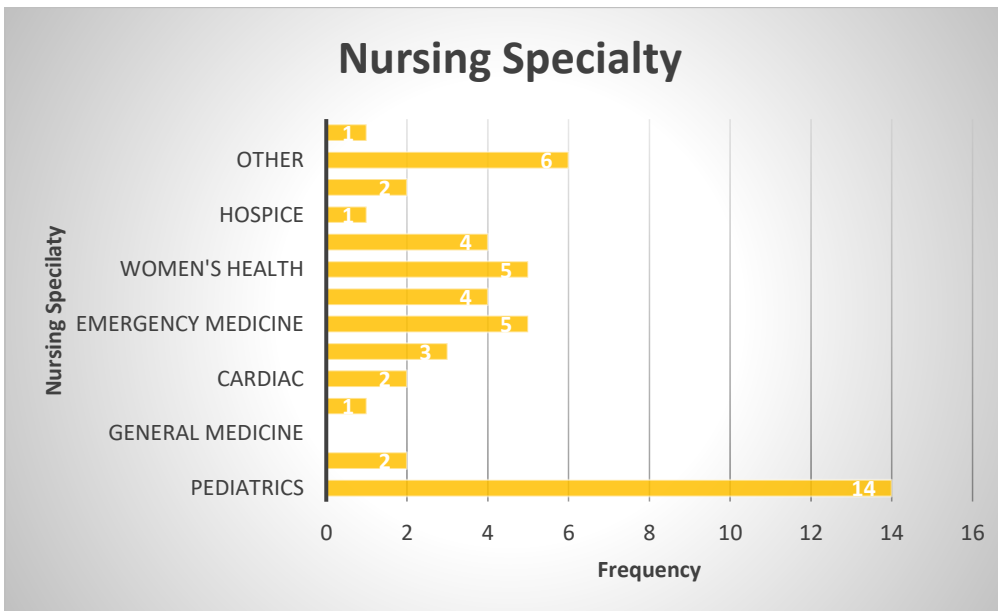


Figure A8

Nursing Specialty (N = 50)



Appendix A (continued)

Demographic Results

Figure A9

Year in Doctoral Program (N = 50)

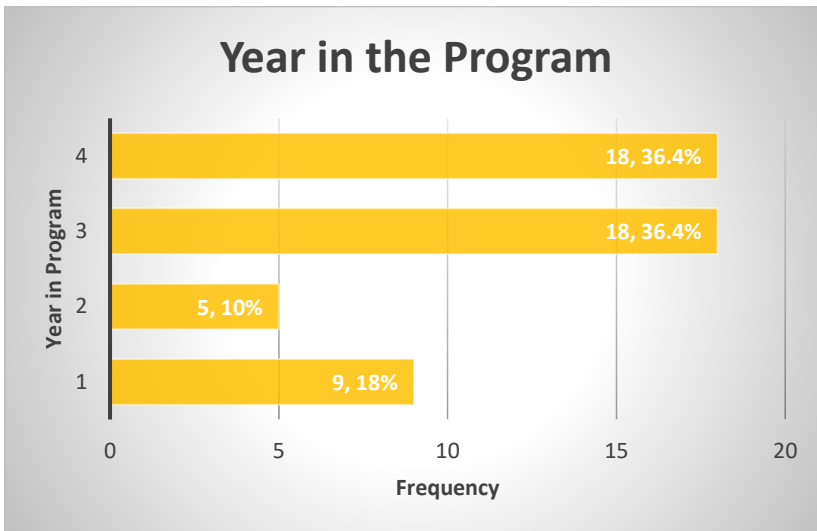
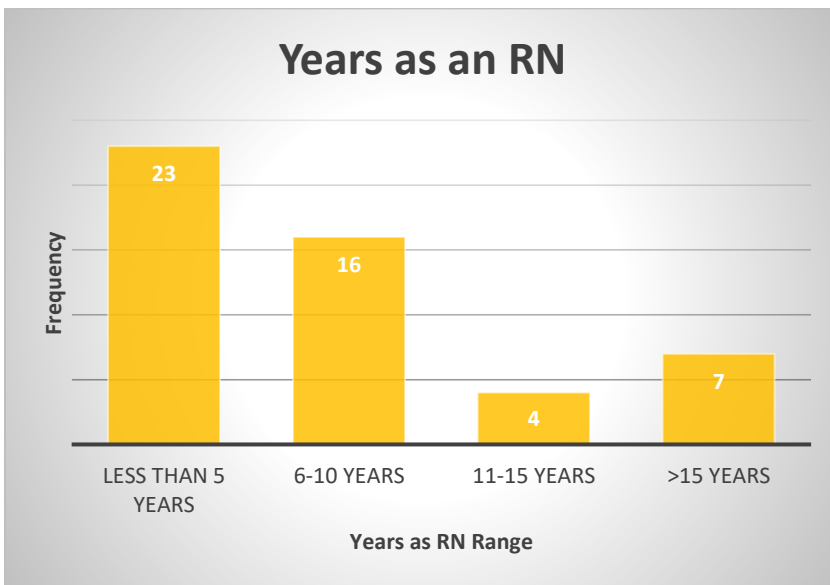


Figure A10

Years as a Registered Nurse (N = 50)



Appendix A (continued)

Demographic Results

Figure A11

Group Belonging (N = 50)

