

Predictors of Resilience in Prelicensure Nursing Faculty

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Abstract

The American Association of Colleges of Nursing (AACN) reported that over 65,000 qualified nursing applicants were turned away in 2023 due to a lack of faculty, a key contributor to the ongoing nursing shortage. Nursing faculty vacancies limit the ability of academic institutions to prepare new nurses, exacerbating the healthcare workforce crisis. Resilience, known to mitigate occupational burnout, may play a crucial role in retaining existing nursing faculty, a population that has not been extensively studied in this context.

The purpose of this study was to examine potential predictors and associated demographic factors of resilience among prelicensure nursing faculty. The study hypothesized positive relationships between perceived support, compassion satisfaction, and resilience. Additionally, it sought to determine if PS, CS, predict resilience in this population while controlling for significantly associated demographic factors.

This cross-sectional study utilized secondary data analysis of survey responses from 499 prelicensure nursing faculty across the U.S. and Canada. Resilience was measured using the Connor-Davidson Resilience Scale (CD-RISC). Compassion satisfaction was operationalized using the Meaning in Life Questionnaire (MLQ), and perceived support was measured using specific items from the CD-RISC. Bivariate and multiple linear regression analyses were conducted to identify predictors of resilience.

The median resilience score of this sample was 32 on a 0-40 scale. Bivariate analyses revealed significant differences in resilience based on age, with higher resilience in Gen X and Boomer generations compared to Millennials and Gen Z. Multiple regression analysis showed that while controlling for variations due to age, perceived support and compassion satisfactions were

significant predictors of resilience, with CS being the strongest predictor ($p < .001$). Educational level, race, and years of teaching experience were not significantly associated with resilience.

This study highlights the importance of compassion satisfaction and perceived support in fostering resilience among prelicensure nursing faculty. These results have research, education and policy implications. Future research should explore the relationship between workplace practices, support structures, and resilience in nursing faculty.

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Chapter I: Introduction

American Association of Colleges of Nursing (AACN) identified the lack of qualified faculty as a top factor for turning away over 65,000 qualified applicants to nursing schools across the country in 2023. The current 7.8% vacancy rate for nursing faculty across the United States is the second highest it has been in the last decade (AACN, 2024). The nursing shortage is well documented with anticipation that the shortage will continue to worsen (U.S. Department of Labor, 2023). Nurses comprise the largest numbers of healthcare workforce and a lack of remedy for the shortage will have a negative impact on health in communities (AACN, 2024). Increasing the educational capacity to prepare nurses to enter the workforce is a key component in addressing the shortage. While recruitment of qualified faculty is key to addressing the faculty shortage, retention of current faculty is also necessary. Strategies to increase retention of qualified faculty are needed to alleviate the further worsening of the nursing faculty shortage. Resilience can mitigate occupational burnout retaining existing and experienced nursing faculty.

Background

Resilience is the ability to bounce back from adversity, frustration, and misfortune (Ledesma, 2014). Other definitions move beyond the ability to simply bounce back and define resilience as a process of adaptation to move beyond survival and thrive when faced with adversity (O'Leary, 1998; Fleming & Ledogar, 2008; Morse, et al., 2021) Research has shown resilience may moderate occupational burnout in nurses (Rushton et al., 2015; Mei et al., 2022). However, resilience research is scarce in populations of nursing faculty. This population is important because they provide education to nurses seeking initial licensure thus having a timely impact on the nursing shortage. Current research on resilience includes nurse faculty populations, but most studies have limited generalizability using a single site and conducted using small sample sizes. Stephens and Layne (2023) did investigate the correlation of moral courage and

purpose with resilience in a multi-site study using a large sample size (n=680). However, this research did not identify predictors of resilience in nursing faculty. Furthermore, there is no existing resilience research focused on prelicensure nursing faculty (PNF). Manuscript 1, “Resilience in Nursing Faculty: An Integrative Review”, presents a published integrative review describing the state of the science on resilience in nursing faculty and identified gaps in the literature.

Theoretical Foundations

Three frameworks were evaluated for use in the study of resilience in prelicensure nursing faculty: 1) Richardson’s (2002) Resiliency Model 2) Resilience in Nursing and Healthcare Framework (Morse et al., 2021) and 3) Professional Quality of Life Health Conceptual Model (CVT, 2021). Smith and Liehr’s (2018) framework for evaluation of middle range theories was applied to evaluate each framework on the following criteria: 1) substantive foundation 2) structural integrity and 3) functional adequacy.

Upon examination, Richardson’s Resiliency Model (RRM) had a strong substantive foundation. The concepts included in the model (adversity, protective factors, biopsychospiritual hemostasis, disruption, and reintegration) are applicable to the discipline of nursing and fall within the nursing meta-paradigm. Furthermore, the RRM assumptions and values align with the nursing interactive -integrative paradigm. This paradigm within the nursing discipline sees the person as interacting with the environment in a mutual fashion and views change as complex and related to multiple factors (Smith & Liehr, 2018, p.16). Additionally, I determined the RRM possessed strong structural integrity with clearly defined concepts and relationships. Despite these strengths, RRM was eliminated due to limitations in the functional adequacy of the model for use in this study. The model was not previously applied to healthcare workers or nursing

faculty. Furthermore, key concepts of this model could not be measured from the dataset available for the study. RRM concepts of biopsychospiritual homeostasis, adversity, and disruption could not be operationalized by any variables in the dataset.

The Resilience in Nursing and Healthcare Framework (RNHF) was also found to have a strong substantive foundation and structural integrity. Resilience, process coping and equanimity, concepts of the RNHF, are clearly defined, applicable to the nursing discipline, and aligned with the nursing interactive-integrative paradigm. Although this framework was developed for use in nursing, functional adequacy was also an identified weakness. The RNHF was developed based on adversity experienced by patients stemming from psychosocial problems associated with a limited group of illnesses, thus application to a variety of practice environments and contexts is limited. Lack of application to nurses in education or practice was the most significant identified limitation of this model. Furthermore, the framework is newly developed and has no published examples of use in practice or research. While RNHF has a strong scholarly foundation it has not yet evolved through scholarly inquiry due to its recent development, thus eliminated for use in the study of resilience in prelicensure nursing faculty.

Ultimately, the ProQOL Health Conceptual Model was chosen as the theoretical foundation for this study based on its superior functional adequacy and previous use in examinations of resilience in nursing faculty.

. Professional quality of life is defined as the quality one feels in relation to one's work in healthcare. This conceptual model proposes that ProQOL consists of positive aspects (compassion satisfaction (CS) and perceived support (PS)) and vulnerabilities (compassion fatigue (CF)) that positively or negatively contribute to ProQOL (Stamm, 2010; CVT, 2021). The model suggests perceived support guards against risk by mitigating or lowering rates of

compassion fatigue and burnout. In addition, the presence of secondary traumatic stress, burnout, and moral distress increases the likelihood of compassion fatigue (CVT, 2021).

Resilience and ProQOL

Current evidence links resilience to core concepts in the ProQOL Health Conceptual Model in nurses and nursing faculty. CS was positively correlated with resilience in mental health nurses (Alonzai, Alshowkan, & Alonzai, 2023), pediatric nurses (Flanders et al., 2020), and pre and post licensure nursing faculty (Sessions et al., 2023). PS was associated with increased levels of resilience in nurses (Labrague & Santos, 2020) and identified as an important factor in developing resilience among nurse faculty teaching at the pre and post licensure level (Beard & Julion, 2016; McDermid et al., 2016; Wieland & Bietz, 2015; Wyllie et al., 2020). Based on the relationships in the literature between resilience and the concepts within the model, resilience is a concept potentially influencing ProQOL, and this relationship provides the theoretical foundation to investigate resilience in PNF. This study examined the positive aspects of ProQOL, CS and PS, and their relationship to resilience in PNF. Manuscript 3, “Resilience as a Potential Moderator in Professional Quality of Life”, presents a more detailed description of the application of the ProQOL Health Conceptual Model, how the concepts were operationalized in this study, and theoretical implications of the study results.

Dissertation Study Aim

The aim of this dissertation study was to examine potential predictors and associated demographic factors of resilience in PNF. The following hypotheses were tested:

1. There is a positive relationship between PS and resilience.
2. There is a positive relationship between CS and resilience.
3. PS and CS predict resilience.

4. There is a positive relationship between age and resilience.
5. There is a positive relationship between years of teaching experience and resilience.
6. Group means of resilience differ based on education level.
7. Group means of resilience differ based on race/ethnicity.
8. PS and CS predict resilience after controlling for significant demographics.

Methodology

A secondary data analysis was conducted using a cross-sectional study design of an existing dataset survey of 690 nurse faculty from the U.S. and Canada. Permission was obtained to use deidentified data from the principal investigator (PI) and IRB approval was granted.

Analysis was conducted on a subset of the survey respondents that have teaching responsibilities in prelicensure baccalaureate or associate degree nursing programs resulting in a sample size of $n = 499$. Manuscript 2, “Predictors of Resilience in Prelicensure Nursing Faculty”, presents a detailed description of the study methodology including measures, data analysis methods, study results, and implications for education and research.

Study Implications

This dissertation research has implications in many realms. Chapter 5 presents conclusions of the study. Additional limitations of the analysis are discussed. Based on the study results and prior research, implications are presented. Research, policy, and education implications are discussed as well as directions for future research,

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Chapter II: Resilience in Nursing Faculty: An Integrative Review

This manuscript (Scholarly Paper #1) was published in *Issues in Mental Health Nursing*. The preferred citation format for this journal is the American Psychological Association, 7th Edition.

Jones, H. E., & Beebe, L. H. (2024). Resilience in nursing faculty: An integrative review. *Issues in Mental Health Nursing*, 45(9), 927–936.

<https://doi.org/10.1080/01612840.2024.2367149>

Abstract

The current documented nursing faculty shortage is an important factor affecting our ability to address the nationwide nursing shortage. Occupational burnout is a common phenomenon among nurses that may negatively impact retention of nursing faculty. While research suggests that promoting resilience moderates occupational burnout and relates to occupational satisfaction in practicing nurses, very few investigations have examined resilience among nursing faculty. The purpose of this integrative review is to describe the current state of the science on resilience in nursing faculty and includes an analysis of 14 studies. Three major foci were identified in the literature: 1) descriptions of resilience levels in nursing faculty, 2) examinations of resilience based upon demographic factors, and 3) resilience and related concepts. Existing research indicates there may be demographic differences in resilience levels of nursing faculty, but additional investigation is necessary to confirm these relationships. There is evidence that quality of life (QOL), components of QOL, and support are correlated with resilience in nursing faculty but more rigorous research on these relationships is needed. Understanding more about the relationship between resilience, demographics, and associated factors will guide future development and choice of interventions tailored to promote resilience among nursing faculty.

Keywords: resilience, nursing faculty, nursing faculty resilience

Introduction

The current documented nursing faculty shortage is an important factor affecting our ability to address the nationwide nursing shortage. The American Association of College of Nursing (AACN) identified the lack of qualified faculty as a top factor contributing to nursing school's turning away over 90,000 qualified applicants in 2021. The current 8% vacancy rate for nursing faculty across the United States is the highest it has been in the last decade (AACN, 2022). The nursing shortage is well documented by the AACN (2022) and the U.S. Department of Labor (2023) and is anticipated to worsen. Approximately 177,000 new nurses are estimated to enter the workforce each year for the next decade, but over 200,000 RN *job openings* are projected each year through 2031 (U.S. Department of Labor, 2023). Nurses comprise the largest numbers of healthcare workers and failure to address the looming shortage will negatively impact health in our nation (Mixer et al, 2021). Increasing our educational capacity to prepare additional nurses to enter the workforce is a key component in addressing the shortage. While recruitment of qualified faculty is one strategy for addressing the faculty shortage, retention of current faculty is also critically important. Strategies to increase retention of qualified faculty could prevent further worsening of the current nursing faculty shortage.

Occupational burnout is a common phenomenon among nurses (Rushton et al., 2015; Purvis & Saylor, 2019) that may negatively impact retention of nursing faculty. Burnout is defined in the Professional Quality of Life conceptual model by Stamm (2010) as feeling emotionally depleted because of work-related stress. Stamm's (2010) model identifies three key characteristics of burnout: emotional exhaustion, cynicism, and feelings of inefficacy. Burnout was associated with intent to resign among international nurse populations (Petrino et al, 2022; Philips, 2020; Lee & Joo, 2023). European healthcare workers with identified burnout reported

thinking more frequently about leaving their workplace (Petrino et al., 2022), and similar results were found in nurses. Burnout was a significant factor influencing intent to leave the current job in 58 medical-surgical nurses in the U.S. (Philips, 2020). The same association was observed in nurses practicing at three different hospitals in South Korea (Lee & Joo, 2023). Similarly, Aquino et al. (2018) identified emotional exhaustion and depersonalization, components of burnout, as significant predictors of intent to leave academia in a population of U.S. nursing faculty.

Resilience may function as a protective factor against burnout, burnout components, and burnout consequences. Resilience is defined as the ability to bounce back from adversity, frustration, and misfortune (Ledesma, 2014), or as a process of adaptation to enable thriving despite adversity (O’Leary, 1998; Fleming & Ledogar, 2008; Morse et al., 2021). The concept of resilience has been widely researched in many disciplines including psychology (Campbell-Sills et al., 2006, 2009; Luo et al., 2023), social work (Crowder & Sears, 2017; Stanley et al., 2021), and medicine (Brennan et al., 2019; Ferreira & Gomes, 2021). Resilience was found to moderate the relationship between stress and burnout among social workers in India (Stanley et al., 2021). Furthermore, links between resilience and burnout were also reported in a population of healthcare workers (medicine, nursing, and healthcare assistants) in Portugal (Ferreira & Gomes, 2021). These authors concluded that resilience reduced levels of burnout based on the relationships between resilience scores and three components of burnout: depersonalization, emotional exhaustion, and personal accomplishment (Ferreira & Gomes, 2021).

While research suggests that promoting resilience moderates occupational burnout (Rushton et al., 2015) and relates to occupational satisfaction (Guo et al., 2019; Piotrowski et al., 2022) in practicing nurses, very few investigations have examined resilience among nursing faculty. Nursing faculty are a critical part of the nursing workforce preparing students for nursing

practice. Similar to clinical environments, academic environments are complex and fraught with adversity and frustration. Understanding the concept of resilience in nursing faculty is important not only to the health of nursing faculty, but also to the quality of nursing education they provide. Reyes et al. (2015) conducted the most recent literature review of resilience related to nursing education; however, only three of the investigations reviewed focused exclusively on nurse faculty. Technology advances, faculty and nursing shortages, and the COVID-19 pandemic have contributed to far-reaching changes in nursing education in the intervening years. Given the significance of these changes, an updated examination of resilience in nursing faculty is called for.

The purpose of this integrative review is to describe the current state of the science on resilience in nursing faculty. A deeper understanding of resilience in this group is a critical first step in identifying strategies to enhance resilience, and thereby promote retention of qualified nursing faculty to address the nursing shortage.

Methods

An integrative review methodology was chosen for this research to determine the state of knowledge currently published about the concept of resilience in nursing faculty. This method allows for the inclusion of sources with diverse methodologies while analyzing the gaps, strengths, and weaknesses of existing knowledge of the phenomenon of interest (Dodgson, 2023).

Literature Search and Selection

A literature search was conducted on resilience in nursing faculty using the electronic databases PubMed and CINAHL. Search terms included “nursing faculty”; OR “nursing instructor*”; OR “nursing teacher*”; OR “nursing educator” AND resilien* OR motivat* persist*.

The initial search was conducted on May 15, 2023. The search was repeated on September 10, 2023, and one additional source was included that was published after the initial search.

Inclusion criteria were: 1) published between 2015 and 2023, 2) primary sources using qualitative or quantitative methodologies, 3) samples including nursing faculty, and 4) published in English. Exclusion criteria were: 1) variables and findings unrelated to resilience, 2) sample did not include nursing faculty, and 3) publication type: secondary sources, letters to the editor, and opinions. The publication dates were chosen to include all publications since the last review of resilience in nursing education. The initial search returned 133 references after duplicates were removed (See **Figure 1**). After screening of titles and abstracts using the inclusion criteria and exclusion criteria, 22 articles remained for full text review. Two additional primary sources were identified through examination of article citations. After full text review, an additional 10 articles not meeting inclusion criteria were eliminated; the 14 sources that remained were included in the final analysis. Two reviewers to conduct the literature search and selection of sources was not possible in this review. Thus, full text review of the 22 articles was repeated to minimize bias associated with one researcher completing the literature selection phase of the review process.

Data Extraction and Analysis

Data extracted from the articles included in the review were the author, date, study aim, methodology, conceptual framework, sample size, sample characteristics, and the main findings. **Table 1** presents the data extracted during the review process. The strengths and limitations of each primary source were evaluated. There are differing criteria based on research design to appraise quality (Whittemore & Knafl, 2005). Therefore, a systematic quality appraisal was not possible due to inclusion of multiple types of research design.

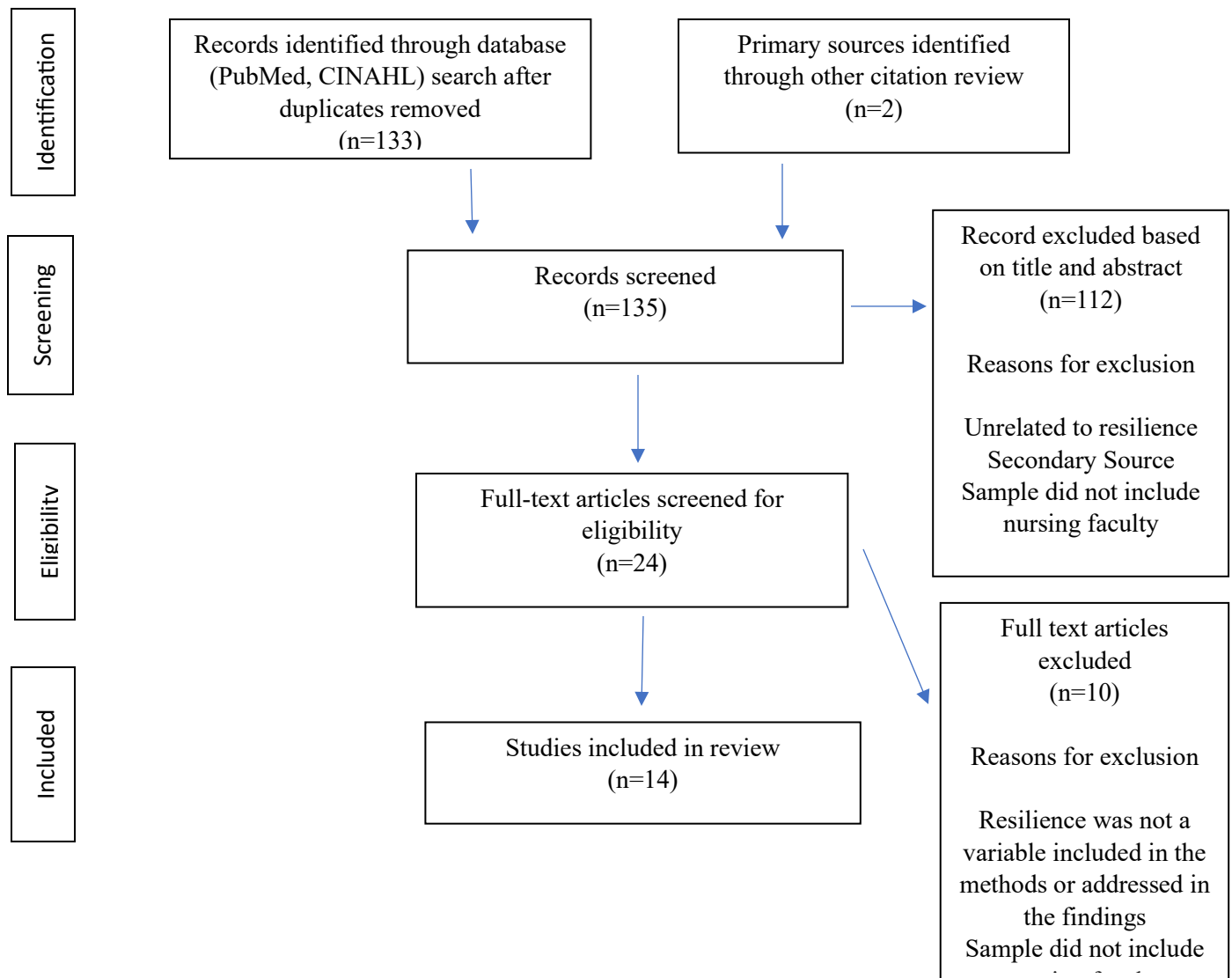


Figure 1. *Prisma 2009 Flow Diagram*

§Table 1. *Summary of Studies on Resilience in Nursing Faculty*

Author/Date	Study Aim/Research Question(s)	Methodology/Conceptual Framework/Sample	Main Findings	Study Strengths and Limitations
Beard & Julion (2016)	Explore the narratives of African American nurse faculty members and their realities of academia.	Qualitative narrative approach Theoretical Framework - social constructionism; critical race theory African American pre and post licensure nursing faculty (n= 23) across 17 states in the U.S.	Participants in the study identified spirituality and support through mentors were both important in overcoming adversity and achieving resilience in academia.	Strengths: Sample was from multiple sites across the U.S. Rich data provides important insights in the experience of African American faculty member. Limitations: Self-selection bias and limited generalizability outside the limited sample and context.
Hampton et al. (2022)	What is the level of faculty resilience during an unprecedented change in nursing education (COVID-19 pandemic)?	Descriptive cross-sectional No conceptual framework identified. Pre and post licensure nursing faculty (n=78) from 10 U.S. colleges.	The mean resilience of sample was moderate (M=32.65) (CD-RISC 10). No correlations were found between total resilience score and age, gender, years of experience, instructional support, or program taught.	Strengths: Sample from multiple sites and geographical regions of the U.S. Limitations: Low response rate and descriptive in scope. Detailed statistical analysis not reported.

Table 1. Continued

Keener et al. (2020)	Examine the relationship of QOL, resilience, and related factors among nursing faculty during COVID-19 pandemic. Do resilience and selected variables (age, teaching years of experience, level of teaching, current work as RN, primary caregiver) predict QOL?	Descriptive cross sectional No conceptual framework identified Pre and post licensure nursing faculty (n=52) in a public university in rural Appalachia	Faculty resilience was moderate (M=32) (CD-RISC 10). Resilience was the strongest variable predicting QOL (measured by WHOQOL-BREF) in all four domains (physical health, psychological, social relationship, and environment).	Strengths: Higher level statistical analysis (regression) of faculty resilience. Limitations: Small sample at a single site limiting generalizability. No report of associations between faculty resilience and demographic characteristics.
Keener et al. (2022)	Examine the mediating effects of resilience between demographics, school-related risk factors, and their influence on QOL in nursing faculty and students during the COVID-19 pandemic.	Secondary data analysis of cross-sectional survey using Structural Equation Modeling (SEM) Theoretical framework - Neuman's Systems Model Nursing students (n=152) and nursing faculty (n=52) at a large university in West Virginia.	SEM confirmed the mediating role of resilience on QOL in nursing faculty and students. Higher levels of resilience had a direct effect on QOL. Resilience mediated the effects of designated workspace and preparedness for online learning on QOL. Mean resilience was 29.12 (CD-RISC 10) of nursing faculty and students combined.	Strengths: SEM is a powerful multivariate analysis tool. Large sample size with established tools. Limitations: Students and faculty were included in the model together. Results do not isolate the role of faculty resilience as a mediator on QOL. Limited generalizability to settings outside rural Appalachia.

Table 1. Continued

Losa-Iglesias et al. (2022)	Is there a relationship between resilience, self-esteem, depression, anxiety, academic stressors, and changes in teaching due to pandemic?	Descriptive cross sectional No conceptual framework identified Nursing faculty (n=53) who worked at least 3 years at a university in Spain.	Resilience levels of the sample were moderate (M=31.11) (CD-RISC 10). Resilience was negatively and significantly correlated with depression, anxiety, and stress; and positively correlated with self-esteem. There were no differences in resilience between clinical and non-clinical faculty.	Strengths: Conducted outside the U.S. allowing for an international context to the body of literature. Limitations: Sample size was small and limited to a single site. Resilience levels were interpreted as high, which is not in line with other previous research.
McDermid et al. (2016)	Explore new nurse academics and resilience building strategies when transitioning to academia.	Qualitative storytelling approach No conceptual framework identified Prelicensure nursing faculty (n=14) with less than 5 years teaching experience from two major universities in Australia	Themes identified for new nurse academics as they build resilience when transitioning to academia were active development of supportive relationships, embracing positivity, and reflection resulting in transformative growth.	Strengths: Extensive support of themes with quotes and rich data. Qualitative rigor addressed. Limitations: small sample limited to new nurse faculty.
Nurse-Clarke & Sockol (2022)	Explore resilience among nurse faculty during COVID-19 pandemic and examine associations among variable and between groups	Correlational No conceptual framework identified Pre and post licensure nursing faculty (n=375) across the U.S.	Faculty resilience levels were moderate (M=79.7) (CD-RISC 25). Significant differences in resilience were reported based on age, level of education, and years of online teaching experience. No significant differences were reported based on gender, tenure, or the program in which faculty taught.	Strengths: Large sample from across many organizations and geographical regions of the U.S. Power analysis reported and minimum sample size met. Limitations: Analysis limited to descriptive and correlational.

Table 1. Continued

Rothacker-Peyton et al. (2022)	Describe nursing faculty's professional quality of life (ProQOL) including compassion satisfaction, compassion fatigue, secondary traumatic stress, and resilience.	Descriptive No conceptual framework identified Full time pre and post licensure nursing faculty (n=29) at a school of nursing in the Pacific Northwest	The sample had moderate levels of compassion satisfaction, compassion fatigue, and burnout, components of ProQOL. The sample had moderate levels of resilience (M= 30) (CD-RISC 10).	Limitations: Small sample from a single site and the study was descriptive in scope. The sample included mid-level academic leaders which could affect the results. The relationship between resilience and ProQOL was not analyzed.
Session et al. (2023)	Understand stress, resilience, and compassion satisfaction of nursing faculty during the COVID-19 pandemic. Identify factors related to job satisfaction in nursing faculty during the COVID-19 pandemic.	Convergent parallel mixed-methods study design No conceptual framework identified Pre and post licensure nursing faculty (n=278) across the U.S.	Compassion satisfaction and resilience were positively correlated with job satisfaction; stress and job satisfaction were negatively correlated. Feeling safe to teach, feeling supported by the administration, and spending more hours teaching online were positively associated with job satisfaction. Perceived support from administration/leadership was important in coping with challenges.	Strengths: Open-ended responses allow for deeper understanding of quantitative results. Limitations: Descriptive and correlational in scope. Lack of diversity in the sample. Study not grounded in the ProQOL conceptual model. Sample comparisons not reported on demographic factors.

Table 1. Continued

Stephens & Layne (2023)	What are the relationships between resilience, moral courage, and purpose (meaning in life) in nursing faculty?	Descriptive correlational Nursing student resilience conceptual model applied to nursing faculty Pre and post licensure nursing faculty (n=690) across the U.S. and Canada	Faculty in the sample had moderate levels of resilience (M=81.77) (CD-RISC 25). Purpose and moral courage revealed moderate positive and statistically significant correlations with resilience levels.	Strengths: Largest sample to date from multiple regions across U.S. and Canada. Limitations: Descriptive and correlational in scope. Limited Canadian participants within the sample, thus may not be representative of Canadian faculty. Demographic factors and their associations with faculty resilience not explored.
Urban et al. (2021)	Compare relationships among and differences between perceptions of incivility frequency and self-reported stress and resilience levels in undergraduate nursing students and faculty during COVID-19 pandemic.	Comparative descriptive, correlational design No conceptual framework identified Nursing students (n=675) and prelicensure nursing faculty (n=35) from a large college of nursing in the southwest U.S.	Weak negative correlations were found between stress and resilience, but this relationship was not statistically significant. Faculty had moderate levels 84.70 of resilience (M=84.70) (Resilience Scale 14) and student levels (M=76.56) were statistically significantly less than faculty.	Limitations: Small faculty sample from a single site limiting generalizability. Analysis was limited to descriptive and correlational statistics. Resilience measure different from all other studies limiting comparison.

Table 1. Continued

Wieland & Beitz (2015)	Examine the phenomenon of resilience to social bullying in academic nursing.	Qualitative phenomenological approach No conceptual framework identified. Data analysis guided by Colaizzi's method Pre and post licensure nursing faculty (n=17) that experienced social bullying in a nursing school across eastern U.S states.	Themes related to resilience to social bullying reflected three time periods during bullying, decisional phase, and after bullying. Resilience strategies were found in all phases. Resilience strategies identified by participants were seeking support from family and colleagues, personal self-care, avoidance, and rebuilding professional identity.	Strengths: Qualitative rigor: credibility, dependability, and transferability is evident. Limitations: Structured interview questions may limit the understanding of the phenomenon and insert bias. Findings limited to narrow context of bullying in academia.
Wilson et al. (2021)	Investigate the level of resilience of undergraduate and graduate nursing students and faculty enrolled in and teaching in online courses. Examine the relationships between resilience and demographic factors.	Descriptive cross-sectional No conceptual framework identified Nursing students (n=200) and post licensure nursing faculty (n=92) at 6 U.S. universities	The faculty sample has moderate levels of resilience (M=33) (CD-RISC 10). Student resilience (M=31.9) (CD-RISC 10) was less than faculty but not statistically significant. No significant differences in resilience levels based on age, generation, experience, or program taught.	Strengths: Multi-site study. Limitations: Low participation rate (14%) and the faculty sample was limited to post licensure faculty who taught in the online environment limiting the generalizability of the findings.
Wylie et al. (2022)	Evaluate a program to build career-resilience in early career academic nurses	Qualitative design using semi-structured interviews Program evaluated based on Knowles adult learning theory and Mezirow's theory of transformational learning Nursing faculty (n=9) from a large metropolitan university in Sydney, Australia	Fostering connections, strengthening expertise, and clarifying directions were the three themes of the participant experiences in the program and how the program supported them increasing their resiliency.	Strengths: An additional international context to add to the body of literature. Limitations: Smallest sample in the review, includes only faculty with less experience, and conducted at one site limits generalizability of findings.

Whittemore and Knafl (2005) identify the data analysis phase of the integrative review most prone to methodological flaws. Therefore, two researchers analyzed the data extracted. A constant comparison method to determine patterns, relationships, and themes was used for analysis (Whittemore & Knafl, 2005). Analysis revealed three major foci among the selected sources: 1) descriptions of resilience levels in nurse faculty, 2) examinations of resilience based upon demographic factors, and 3) resilience and related concepts.

Results

Study Samples

All articles included in this review examined resilience in populations of nursing faculty. Three of the studies also examined nursing students (Wilson et al, 2021; Keener et al., 2022; Urban et al., 2021). Wilson et al. (2021) and Urban et al. (2021) analyzed resilience of faculty separately in comparison to students while Keener et al. (2022) combined students and faculty together when examining the mediating effect of resilience on quality of life. Eight of the study samples included both prelicensure and post licensure nursing faculty (Beard & Julion, 2016; Hampton et al., 2022; Keener et al., 2020; Nurse-Clarke & Sockol, 2022; Rothacker-Peyton et al., 2022; Sessions et al., 2023; Stephens & Layne, 2023; Wieland & Beitz, 2016). Three studies limited their samples to faculty in a single program; Wilson et al. (2021) included only post licensure nursing faculty while McDermid et al. (2016) and Urban et al. (2021) examined only prelicensure nursing faculty. The remaining studies did not report the program in which the faculty in the sample taught.

This body of literature is international in scope. Three of the studies were conducted outside of the U.S. including Spain (Losa-Iglesias et al., 2022) and Australia (McDermid et al., 2016; Wylie et al., 2022). In addition, Stephens and Layne (2023) included nurse faculty from

Canada in their sample. The remaining 10 investigations examined U.S. samples and of those studies, four (Keener et al., 2020,2022; Rothacker-Peyton et al., 2022; Urban et al., 2021) were single-site and six (Beard & Julion, 2016; Hampton et al., 2022; Nurse-Clarke & Sockol, 2022; Sessions et al., 2023; Wieland & Bietz, 2015; Wilson et al., 2021) included samples from multiple sites. Three major foci were identified in the literature: 1) descriptions of resilience levels in nurse faculty, 2) examinations of resilience based upon demographic factors, and 3) resilience and related concepts.

Descriptions of Resilience Levels in Nursing Faculty

Nine of the 14 studies measured resilience among nursing faculty. Most of these studies measured resilience using the 10 item Connor Davidson Resilience Scale (CD-RISC 10) (Campbell-Sills & Stein, 2007). Mean resilience levels (measured by the CD-RISC 10) were similar among the studies of combined samples of pre and post licensure faculty, ranging from 30 to 32.65 (Hampton et al., 2022; Keener et al 2020; Rothacker-Peyton et al 2022). These values represent moderate resilience on a scale of 0-40, with scores falling in the second quartile of CD-RISC 10 scores in the general U.S. population (Campbell-Sills et al., 2009). Wilson et al. (2021) reported a mean score of 33 on the CD-RISC 10 (post licensure nursing faculty only). The mean resilience of an additional sample from Spain was 31.11 on the CD-RISC 10, but faculty teaching assignment (pre or post licensure) was not reported (Losa-Iglesias et al., 2022).

Two studies used the 25 item non-abbreviated version of the Connor Davidson Resilience Scale (CD-RISC 25-Connor & Davidson, 2003) and reported similar levels of resilience in combined populations of pre and post licensure faculty. Nurse-Clarke and Sockol (2022) reported a mean resilience level of 79.7 in a sample of 375 nurse faculty across the U.S. Stephens and Layne (2023) reported a similar mean resilience score of 81.77, measured by CD-

RISC 25, in a sample of 670 nurse faculty across the U.S and Canada. Urban et al. (2021) reported comparable mean resilience of prelicensure faculty (84.70) measured by the Resilience Scale 14 (Wagnild, 2009). Similar to the studies using the abbreviated CD-RISC 10, these mean values represent moderate resilience on a scale of 0-100, falling within the second quartile (score 74-82) of CD-RISC 25 scores in the U.S. general population (Connor & Davidson, 2003).

Examinations of Resilience based upon Demographic Factors

While every investigation described the sample demographics, few studies examined the relationships between demographic factors and resilience. Four articles reviewed examined relationships between demographic factors immutable to change and resilience among nursing faculty (Hampton et al., 2022; Keener et al., 2022; Nurse-Clarke & Sockol, 2022; Wilson et al., 2021). The immutable demographic factors analyzed included age, gender, and race/ethnicity.

Age and Resilience Levels

The literature examining the relationship between age and resilience in nursing faculty is inconsistent. A single study reported age-based resilience differences in both pre and post licensure nursing faculty. Nurse-Clarke & Sockol (2022) reported statistically significantly higher levels of resilience in those over 50 as compared to those under 50 as measured by the 25 item Connor Davidson Resilience Scale (CD-RISC 25-Connor & Davidson, 2003). Wilson et al. (2021) found baby boomers (older than age 55) to have higher average resilience scores on the 10-item Connor Davidson Resilience Scale (CD-RISC 10-Campbell-Sills & Stein, 2007) as compared to both Gen X (ages 40-55) and Gen Y (ages 24-39) nursing faculty, but differences were not statistically significant. Similarly, the remaining studies, all of which used the CD-RISC 10 (Campbell-Sills & Stein, 2007), found no significant differences in resilience levels of nursing faculty based on age (Hampton et al., 2022; Keener et al., 2022; Wilson et al., 2021).

Gender and Resilience Levels

No statistically significant differences in resilience of pre or post licensure nursing faculty were reported based on gender. Hampton et al. (2022) and Nurse-Clarke & Sockol (2022) detected no significant differences in resilience between males and females in a sample of pre and post licensure nursing faculty combined. Investigators measured resilience using different versions of the Connor Davidson Resilience Scale, the CD-RISC 10 (Hampton et al., 2022) and the CD-RISC 25 (Nurse-Clarke & Sockol, 2022). The samples in both studies were mostly female: 88% (Hampton et al., 2022) and 76% (Nurse-Clarke & Sockol, 2022); both lower than the 91% rate of female RNs reported in the National League for Nursing (2023) annual faculty survey.

Keener et al. (2020) planned to analyze gender in their investigation of resilience in nursing faculty, but were unable to do so, due to low numbers of male respondents. While an additional two studies (Sessions et al., 2023; Urban et al., 2021) collected gender information, neither provided an analysis of the relationship between gender and resilience.

Race/Ethnicity and Resilience Levels

Of the four studies reporting race/ethnicity of the sample, most participants were white (Nurse-Clarke & Sockol, 2022; Sessions et al., 2023; Stephens & Layne, 2023; Urban et al., 2021). A single study examined correlations between race and resilience levels in a combination of pre and post licensure nursing faculty (Nurse-Clarke & Sockol, 2022) and reported that, while higher levels of resilience were observed among white nursing faculty participants as compared to black or Hispanic nursing faculty, differences were not statistically significant.

Demographic factors responsive to change (mutable) included educational level, years of teaching experience, and degree program taught. Four studies examined the relationships of at

least one of these variables to resilience (Hampton et al., 2022; Losa-Iglesias et al., 2022; Nurse-Clarke & Sockol, 2022; Wilson et al., 2021).

Educational Level and Resilience Levels

Nurse-Clarke & Sockol (2022) were the only researchers to examine the relationship between resilience and faculty educational level (bachelor's, master's, or doctoral degree) in a combination of pre and post licensure nursing faculty. Doctorally (PhD or DNP) prepared nursing faculty had significantly higher levels of resilience compared to nursing faculty with a master's degree as measured by the CD-RISC 25 (Connor & Davidson, 2003).

Years of Teaching Experience and Resilience Levels

Three studies examined years of teaching experience and resilience in nursing faculty (Hampton et al., 2022; Nurse-Clarke & Sockol, 2022; Wilson et al., 2021). No significant correlation was reported between years teaching and resilience scores in any study (Hampton et al., 2022; Nurse-Clarke & Sockol, 2022; Wilson et al., 2021). Furthermore, Nurse-Clarke & Sockol (2022) found no significant relationship between tenure status (non-tenure track faculty, non-tenured tenure track faculty, and tenured faculty) and resilience. Interestingly, Nurse-Clarke & Sockol (2022) did find years of *online* teaching experience to be positively and significantly correlated with higher levels of resilience in a combined sample of pre and post licensure nursing faculty.

Degree Program Taught and Resilience Levels

No statistically significant correlations were reported between the level of program (pre/post licensure or undergraduate/graduate) taught and resilience in nursing faculty in the U.S. (Hampton et al., 2022; Nurse-Clarke & Sockol, 2022; Wilson et al., 2021). Additionally, Losa-

Iglesias et al. (2022) found no significant differences in resilience between clinical and non-clinical faculty in a sample of nursing faculty in Spain.

Resilience and Related Concepts

Concepts related to resilience and examined in this body of literature included quality of life (Keener et al., 2020,2022; Rothacker-Peyton et al., 2021), purpose and moral courage (Stephens & Layne, 2023), psychological health (Keener et al., 2020, 2022; Losa-Iglesias et al., 2022; Urban et al., 2021), and level of support (Bear & Julion, 2016; McDermid et al., 2016; Wieland & Bietz, 2015; Wylie et al., 2022). Quality of life was defined broadly in two studies (using the WHO Quality of Life-Bref (WHOQOL-BREF), and narrowly in a third (Professional Quality of Life-PROL). Stephens and Layne (2023) analyzed relationships between resilience and two concepts related to professional quality of life (purpose and moral courage). Finally, linkages between aspects of psychological health and perceived interprofessional support were examined.

Quality of Life and Resilience

Three of the studies reviewed examined the relationship between resilience and quality of life (QOL) in nursing faculty. Keener et al. (2020) investigated resilience and QOL in 52 nursing faculty at a public university in rural Appalachia. QOL was measured using the WHO Quality of Life-Brief (WHOQOL-BREF) instrument and resilience was measured with the 10 item Connor Davidson Resilience Scale (CD-RISC 10 - Campbell-Sills & Stein, 2007). They found resilience was a significant predictor of QOL in all four domains (physical health, psychological health, social relationship, and environment) measured by the WHOQOL-BREF. From these results the researchers concluded that nursing faculty with higher levels of resilience experienced better QOL in each of these domains. In a subsequent publication, the same group of researchers

investigated the mediating relationship of resilience between demographics and school related risk factors affecting QOL (Keener et al., 2022). The mediating role of resilience on QOL was confirmed as statistically significant in a combined sample of nursing faculty (n = 52) and students (n = 152). While the mediating role of resilience was not examined in nursing faculty alone, higher levels of resilience had a significant and direct effect on QOL in the combined sample.

Professional quality of life (ProQOL) (Stamm, 2010) is defined as the quality of one's life with respect to their job as a healthcare worker. Resilience was positively and significantly correlated with higher levels of job satisfaction (analogous to ProQOL), in a sample of 278 nursing faculty across the U.S (Session et al., 2023). Rothacker-Peyton et al. (2021) conducted a study to describe ProQOL and resilience in a sample of 29 pre and post licensure nursing faculty in the Pacific Northwest. The mean faculty resilience score in this sample was 30 as measured by the CD-RISC 10. ProQOL was operationalized using quantitative surveys of compassion satisfaction, compassion fatigue, burnout, and secondary traumatic stress. Participants reported moderate levels of compassion satisfaction, compassion fatigue, and burnout. Further, more than two thirds of the sample experienced secondary traumatic stress. Regrettably, the authors did not analyze relationships between resilience scores and any components of ProQOL.

Purpose and Moral Courage. Purpose and moral courage are concepts related to ProQOL. Purpose corresponds to compassion satisfaction and moral courage corresponds to the moral distress components of the ProQOL conceptual model (Stamm, 2010). In the largest study to date, Stephens and Layne (2023) described resilience and its correlates among 670 nursing faculty from across the U.S. and Canada. Participants completed anonymous online surveys of resilience (CD-RISC 25), purpose, and moral courage and relationships between the concepts

were examined. Purpose was defined as the intention to accomplish something meaningful to oneself and valuable to the outside world. Moral courage was described as a trait possessed by someone whose actions align with their values when faced with ethical dilemmas despite personal risk or adversity. Both moral courage and purpose were moderately and significantly correlated with resilience in a combined sample of pre and post licensure nursing faculty. Faculty with higher levels of moral courage, (measured by the Moral Courage in Nursing Faculty scale, Stephens & Layne, 2023), had significantly higher levels of resilience. Similarly, nursing faculty with a strong sense of purpose, (measured by the Meaning of Life Questionnaire presence subscale, Steger et al., 2006), reported significantly higher levels of resilience.

Psychological Health and Resilience. Psychological health is a component of QOL as identified in the study by Keener et al. (2020) discussed previously. Additional research has linked several aspects of psychological health to resilience (Losa-Iglesias et al., 2022; Urban et al., 2021). Losa-Iglesias et al. (2022) found resilience was negatively correlated with depression, anxiety, and stress. Conversely, resilience was positively correlated with self-esteem. Urban et al. (2021) also found a negative correlation between stress and resilience, but the association was weak and not statistically significant.

Support

Support was identified as a related concept to resilience in four studies employing qualitative methods. Both McDermid et al. (2016) and Wylie et al. (2022) found support a component in developing resilience in two separate samples of Australian nursing faculty early in their academic careers. In a sample of 14 nurse faculty with less than five years teaching experience, active development of supportive relationships was identified as a resilience building strategy when transitioning to academia. Wylie et al. (2022) reported similar results when

evaluating a program to build career resilience in early career nurse academics. When asked how the program supported developing resilience, fostering connections emerged as a theme in participant responses.

Additional qualitative research placed support related to resilience in a narrower context. Wieland and Bietz (2015) examined resilience in the context of bullying in academic nursing. Support from family and colleagues was a strategy identified to build resilience in a sample of 17 nursing faculty who experienced social bullying while working in academia. Beard and Julion (2016) also reported support as a resilience building strategy in a study exploring African American nursing faculty members' experiences in academia.

A single study examined support and its relationship with resilience. In this case, support was operationalized specifically as instructional support provided by the organization. Hampton et al. (2022) found no correlation between resilience and instructional support in a sample of nursing faculty from ten U.S. institutions surveyed during the COVID-19 pandemic.

Discussion

Resilience was measured in multiple samples of pre and post licensure nursing faculty, but the measures used were inconsistent, limiting our ability to compare resilience levels between studies. The studies reviewed that used the CD-RISC-10 reported resilience levels that were comparable to previous research in critical care staff that included nurses, nurse practitioners, and medicine fellows using the same measure (Purvis et al., 2019). Similarly, the mean resilience levels of nursing faculty as measured by the CD-RISC 25 (Connor & Davidson, 2003) were similar to those reported using the same measure in a population of nurses practicing in high-intensity acute care settings (Rushton et al., 2015).

In addition, the sample makeup differed between studies reviewed. Some studies included only prelicensure nursing faculty, one included only post licensure nursing faculty, many included a combination of both, and others did not report the composition. Due to the variation in samples, conclusions cannot be drawn about resilience in nursing faculty as a whole, nor about resilience in pre and post licensure nursing faculty groups individually.

Results on the relationships between demographic factors and resilience were mixed. Age, education, and years of online teaching experience were significantly correlated with resilience levels in a combined sample of pre and post licensure nursing faculty (Nurse-Clarke & Sockol, 2022). Purvis et al. (2019) found a similar relationship in a sample of nursing and medical critical care staff, with older participants reporting significantly higher levels of resilience. Correlations reported as significant by Nurse-Clarke and Sockol (2022) but not reaching significance in other studies may be attributed to the measurements used; theirs was the only study examining correlations between demographic factors that measured resilience using the unabbreviated CD-RISC 25 (Connor & Davidson, 2003). Furthermore, data collection during the COVID-19 pandemic may have contributed to the observation of higher resilience in faculty with greater online teaching experience in their sample. Due to the rapid transition to online learning during COVID, it is reasonable to expect participants with more online teaching experience were better prepared to cope with the challenges of this transition.

Resilience was a key predictor of QOL (Keener et al., 2020) and positively correlated with the associated concepts of job satisfaction (Rothacker-Payton et al., 2021), purpose, and moral courage (Stephens & Layne. 2023). Conversely, resilience was negatively correlated with the QOL associated concepts of stress, anxiety, and depression (Losa-Iglesias, 2022; Urban et al., 2021). Resilience was also linked to compassion satisfaction, a component of ProQOL, in social

workers in India. Interestingly, this same study did not find significant correlations with stress and anxiety (Stanley et al., 2021)

Every qualitative investigation reviewed identified support as a key component of resilience in nursing faculty (Beard & Julion, 2016; McDermid et al., 2016; Wieland & Bietz, 2015; Wylie et al., 2022), validating research linking support to resilience in other groups. Luo et al. (2023) found perceived social support and resilience, measured by the Chinese CD-RISC 25 version, were positively significantly correlated in a population of Chinese high school students. Furthermore, social support was associated with resilience in international nurse populations. In Turkey, Kilinc and Sis Celik (2020) found significant positive correlations between social support and resilience and Galanis et al. (2023) reported social support was a significant predictor of resilience in Greek nurses. Of note, all the studies in this review that identified support as a key factor were conducted prior to the COVID-19 pandemic. Given the rapid changes that occurred in nursing education during this time, additional investigation is needed to determine if this relationship is unchanged. Hampton et al. (2022) reported no relationship between instructional support and resilience in nursing faculty but did not explore other types of support such as social or psychological. Additional quantitative analysis is needed to better understand the relationship of support and resilience in nursing faculty.

Investigators used multiple instruments to measure resilience in populations of pre and post licensure nursing faculty. While all instruments used have established validity and reliability, the use of multiple instruments limits the ability to synthesize the findings. The Connor Davidson Resilience Scale (Connor & Davidson, 2003) is the most commonly used instrument among the studies in this review. However, two versions were used (long version-25

items and short version-10 items); at times with conflicting results. It is imperative for future research to use consistent measurements of resilience allowing for a synthesis of knowledge.

Sample size and sampling methods also varied among the studies reviewed. Most samples were small; three quantitative studies included over 100 participants (Nurse-Clarke & Sockol, 2022; Sessions et al., 2023; Stephens & Layne, 2023), of the remainder, the largest study was 92 participants (Wilson et al., 2021). All of the three largest quantitative investigations combined pre and post licensure nursing faculty in their analysis, preventing our drawing conclusions about the state of resilience and its related concepts in nursing faculty employed in differing programs. Prelicensure nursing faculty are in greatest demand (NLN, 2023) in order to prepare nurses for entry into practice expeditiously and address the looming shortfall in the nursing workforce. Thus, additional studies of resilience in prelicensure nursing faculty are urgently needed.

The three largest study samples from multiple sites were descriptive and correlational in nature. Research investigating resilience at a higher level of statistical analysis (regression analysis and structural equation modeling) was conducted at a single site with a small sample size and by a single research group (Keener et al., 2020, 2022). Additionally, the study investigating resilience as a mediator combined nursing faculty with students and was therefore unable to make inferences regarding this relationship in nursing faculty alone. Future quantitative analysis needs to be conducted beyond descriptive and correlational statistics if we are to better understand resilience in nursing faculty.

This review of resilience in nursing faculty is subject to several limitations. The search strategy and inclusion criteria may have inadvertently excluded relevant sources. In addition, there is increased risk of researcher bias because the literature search, selection, and data

extraction were conducted by one researcher. A single reviewer during the selection phase can be affected by confirmation bias and lead to a biased representation of the literature. While majority of samples were of similar makeups to nursing faculty nationwide, they were overwhelmingly white and female, thus limiting the generalizability of findings to nursing faculty of other genders or races. Finally, the heterogeneity of measures used limits our ability to draw conclusions about resilience in this population.

Implications

The findings of our review have implications for nursing education. Support was identified as a key factor in developing resilience among nurse faculty. Programs to provide support, both socially and administratively, may promote resilience in nursing faculty. Age and educational level were two characteristics associated with higher resilience. Targeting support to younger nurse faculty with lower educational levels is advised if resources are limited. As the body of literature on resilience in nursing faculty becomes more robust, the knowledge gained will contribute to the design and conduct of interventions that promote resilience.

Conclusion

The body of literature investigating resilience in nursing faculty is small. Existing research indicates there may be demographic differences in resilience levels of nursing faculty, but additional investigation is necessary to confirm these relationships. There is evidence that QOL, components of QOL, and support are correlated with resilience in nursing faculty but more rigorous research on these relationships is needed. Future research needs to be conducted using large samples from multiple sites. In addition, relationships other than correlations (such as predictors and causal pathways) need to be investigated. Research reviewed was conducted in a variety of nursing faculty populations: prelicensure, post licensure, and a combination of both. It

is likely that resilience and its contributing factors differ between nursing faculty teaching at the pre and post licensure level. Further investigations should limit samples to pre or post licensure faculty alone, in order to better understand the processes of resilience and its contributing factors in different groups of nursing faculty. Additional investigation of the adversity facing this population and its relationship with resilience is an important future direction. Understanding more about the relationships between resilience, demographics, and associated factors will guide future development and choice of interventions tailored to promote resilience among nursing faculty, regardless of level of program.

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Chapter III: Predictors of Resilience in Prelicensure Nursing Faculty

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Abstract

Background

Nursing faculty vacancies reduce the numbers of students entering the nursing profession, exacerbating the healthcare workforce crisis. Resilience, known to mitigate occupational burnout, may play a role in retaining existing prelicensure nursing faculty (PNF), a population that has not been extensively studied.

Purpose

We examined compassion satisfaction (CS), perceived support (PS), and associated demographic factors of resilience among PNF.

Methods

This cross-sectional study utilized secondary data analysis of survey responses from 499 PNF. Multiple linear regression analyses were conducted to identify significant predictors of resilience.

Results

Multivariate analysis revealed CS and PS were significant predictors of resilience when controlling for age, with CS the strongest predictor in the regression model.

Conclusions

This study highlights the importance of CS and PS in fostering resilience among PNF. Understanding these factors can guide academic institutions in developing interventions to retain nursing faculty, thereby addressing the broader nursing shortage.

Keywords: nursing faculty, resilience, compassion satisfaction, support

Introduction

American Association of College of Nursing (AACN) identified the lack of qualified faculty as a top factor for turning away over 65,000 qualified applicants to nursing schools across the country in 2023.¹ The current 7.8% vacancy rate for nursing faculty across the United States limits the capacity of academic institutions to prepare new nurses to enter the healthcare workforce.¹ The nursing shortage is well documented with anticipation that the shortage will continue to worsen.² Nurses comprise the largest number of workers in the healthcare workforce and a lack of remedy for the shortage will have a negative impact on health in communities.¹ Increasing the educational capacity to prepare nurses to enter the workforce is a key component in addressing the shortage.¹ While recruitment of qualified faculty is key to addressing the faculty shortage, retention of current faculty is also necessary. Strategies to increase retention of qualified faculty are needed to alleviate the further worsening of the nursing faculty shortage. Resilience has been shown to mitigate occupational burnout and thus, may contribute to retaining existing and experienced nursing faculty.^{3,4,5}

Background

Resilience is the ability to bounce back from adversity, frustration, and misfortune .⁶ Other definitions move beyond the ability to simply bounce back and define resilience as a process of adaptation to move beyond survival and thrive when faced with adversity.^{7,8,9} Research has shown resilience may moderate occupational burnout in nurses.^{4,5} However, resilience research in populations of nursing faculty is sparse. Nursing faculty are an important population because they provide education to nurses seeking initial licensure thus producing a timely impact on the nursing shortage.

A small body of research examining nursing faculty described resilience and its relationship to quality of life and levels of support. Keener et al. concluded nursing faculty with higher levels of resilience experienced better quality of life in the four domains of physical health, psychological health, social relationships, and environment.¹⁰ Aspects of psychological health (a component of quality of life) were similarly correlated with resilience in a different sample of nursing faculty in Spain. Losa Iglesias et al. found self-esteem was positively correlated with resilience and in addition, negative aspects of psychological health (i.e. anxiety and depression), were negatively correlated with resilience.¹¹ Several qualitative studies found support from family and work colleagues were key components in building resilience among nursing faculty.^{12,13,14,15}

The current research on resilience in nursing faculty comprises approximately 14 studies, mostly of a descriptive nature and few examining resilience in prelicensure nursing faculty (PNF). This small body of literature is mixed as to the relationship between resilience level and demographic factors. One study reported increased age, education, and years of online teaching experience were significantly correlated with resilience in nursing faculty.¹⁶ However, other studies examining the relationship between age, years of teaching experience and resilience in nursing faculty did not document significant correlations.^{10,17,18} These inconsistent results warrant further investigation of the levels of resilience based on demographic factors in nursing faculty. For details about the state of the science on resilience in nursing faculty, the reader is referred to an integrative review conducted by the authors.¹⁹

Most studies in this small body of literature have limited generalizability due to use of a single site, small sample sizes, descriptive and correlational analyses, and failure to examine pre licensure nursing faculty separate from graduate nursing faculty. While previous research did

investigate resilience in a multi-site study using a large sample size (n=680), these authors did not identify predictors of resilience in nursing faculty and did not examine prelicensure faculty separate from graduate faculty.²⁰ PNF hold potential to directly and rapidly address the nursing shortage, but we found no published literature examining resilience in PNF alone. To address these limitations, this study examined predictors of resilience in a large, geographically diverse sample of prelicensure nursing faculty, using bivariate and multivariate analysis to identify correlates and predictors of resilience in this population.

Conceptual Framework

The Professional Quality of Life (ProQOL) Health Conceptual Model provided the theoretical basis for this study (see **Figure 2**).²¹ The model has been used in prior research to investigate resilience in nursing faculty. Professional quality of life is defined as the quality one feels in relation to one's work in healthcare. This conceptual model proposes that ProQOL consists of positive aspects (compassion satisfaction and perceived support) and vulnerabilities (compassion fatigue) that positively or negatively contribute to ProQOL.²² The model suggests perceived support guards against risk by mitigating or lowering rates of compassion fatigue and burnout. In addition, the presence of secondary traumatic stress, burnout, and moral distress increases the likelihood of compassion fatigue.²¹

Compassion satisfaction (CS) is the sense of fulfillment, satisfaction, or joy one experiences from helping others. CS is the positive aspect contributing to ProQOL and represents the rewards and motivation that individuals gain from their work caring for others. Intrinsic factors influencing CS include a sense of purpose or accomplishment and empathy. Positive feedback, supportive work environments, and the ability to provide quality care are extrinsic factors contributing to CS in healthcare workers. CS is significant to wellbeing and can mitigate

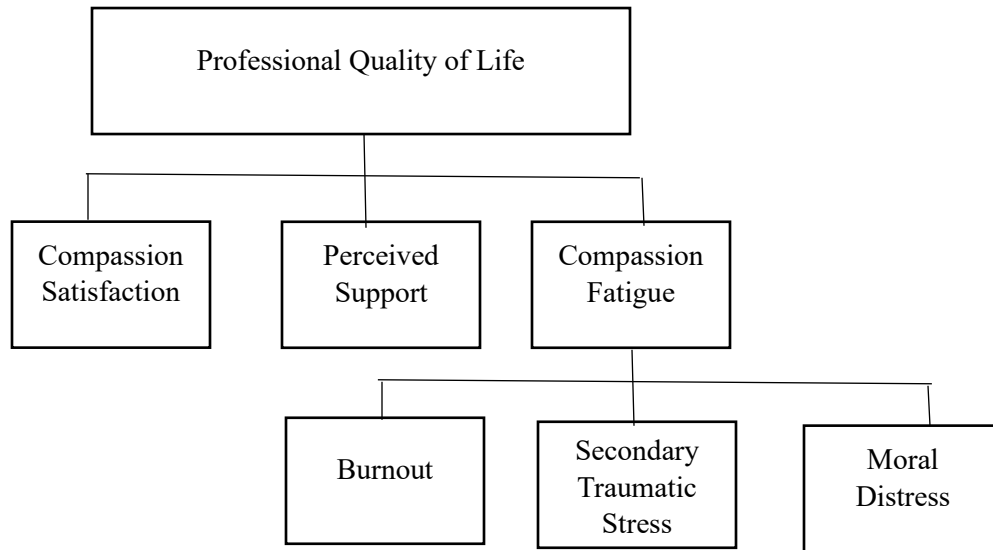


Figure 2. *Professional Quality of Life Health Conceptual Model.* From ‘Professional Quality of Life (ProQOL) Health Manual’, 2021,. Copyright 2021 by the Center for Victims of Torture.

the negative aspects of ProQOL.²¹ Perceived support (PS) is an individual's perception of being cared for, valued by others, and belonging to a mutually supportive network. Both personal and professional support are important in ProQOL. Personal or informal support includes family, friends, emotional and instrumental support. Emotional support refers to the feeling of receiving empathy or caring, and instrumental support is assistance from others in accomplishing tasks such as household chores and errands. Professional support includes formal organizational structures such as supervisor support, mentoring support from co-workers and peers, or psychological support from a mental health professional. The model suggests PS guards against risk by lowering rates of compassion fatigue and burnout.²¹

Resilience and ProQOL

Current evidence links resilience to core concepts in the ProQOL Health Conceptual Model in nurses and nursing faculty. CS was positively correlated with resilience in mental health nurses,²³ pediatric nurses,²⁴ and pre and post licensure nursing faculty.²⁵ PS was associated with increased levels of resilience in nurses,²⁶ and identified as an important factor in developing resilience among nurse faculty teaching at the pre and post licensure level.^{12,13,14,15} Based on the relationships in the literature between resilience and the concepts within the model, resilience is a concept potentially influencing ProQOL and this relationship provides the theoretical foundation to investigate resilience in PNF. This study examined the positive aspects of ProQOL, CS and PS, and their relationship to resilience in PNF.

Purpose

The aim of this study was to examine potential predictors and associated demographic factors of resilience in PNF.

Based on the ProQOL Health Conceptual Model and operationalization of the concepts resilience, CS, and PS the following hypotheses were tested in a population of PNF:

1. There is a positive relationship between PS and resilience.
2. There is a positive relationship between CS and resilience.
3. PS and CS predict resilience.
4. There is a positive relationship between age and resilience.
5. There is a positive relationship between years of teaching experience and resilience.
6. Group means of resilience differ based on education level.
7. Group means of resilience differ based on race/ethnicity.
8. PS and CS predict resilience after controlling for significant demographics.

Methodology

Design

For this cross-sectional study, the authors performed a secondary data analysis of an existing dataset of survey responses from 690 nurse faculty residing in the U.S. and Canada. Data was collected between September 2018 and May 2019. The anonymous web-based survey data included demographic factors and responses corresponding to the following measures: Connor-Davidson Resilience Scale (CD-RISC);²⁷ Meaning in Life Questionnaire (MLQ);²⁸ and Moral Courage Scale for Physicians,²⁹ adapted with permission for use with nursing faculty (MCS-NF).²⁰ The secondary dataset used in this study included measures of CS (operationalized as MLQ-Presence subscale) and PS (operationalized as two items from the CD-RISC instrument). Compassion fatigue and its associated components (secondary traumatic stress, burnout, and moral distress) were not measured in the dataset. The principal investigator (PI) granted permission to use deidentified data and IRB approval was obtained.

Sample

Data was collected from a convenience sample of nurse educators across the United States and Canada using an anonymous online survey. Inclusion criteria were participants who indicated teaching responsibilities in prelicensure nursing programs resulting in a sample size of $n = 499$. Any participants with teaching responsibilities solely in post licensure or graduate programs were excluded

The majority of the study sample were female, white, and members of Gen X (ages 44-59). In addition, most participants worked full time and lacked certification as either a nurse educator or an advanced practice nurse. **Table 2** presents a description of the study sample.

Measures

The study outcome variable of interest was resilience. Independent variables examined as potential predictors included CS and PS.

Resilience

Resilience, the outcome variable of interest, was operationalized using the Connor – Davidson Resilience Scale (CD-RISC). The 10-item version (CD-RISC 10)³⁰ was used to measure resilience in this study. Each item is scored on a 0-4 scale where 0 is not true at all and 4 is true nearly all the time. CD-RISC 10 scores range from 0-40, with higher levels corresponding to higher levels of resilience. This measure has been widely used in diverse settings and populations with established reliability and validity. Strong internal consistency was shown in many populations including adolescents, students, healthcare personnel, and nurses ($\alpha = 0.81-0.93$).^{30,31,32} Keener et al. also reported high levels of internal consistency in a combined sample of pre and post licensure nursing faculty ($n=52$, Cronbach's alpha 0.90).¹⁰ Construct validity was established by analyzing the relationship between childhood trauma, CD-RISC 10

Table 2. Study Sample Demographics and Variable Descriptive Analysis

Demographic or Variable	Frequency or Statistics
Age, <i>n</i> (%)	
Millennial & Gen Z (under 44)	130 (26.1%)
Gen X (44-59)	218 (43.7%)
Boomer (60 & above)	151 (30.3%)
Gender, <i>n</i> (%)	
Female	475 (95.2%)
Male	21 (4.2%)
Race, <i>n</i> (%)	
Non-white	48 (9.6%)
White	451 (90.4%)
Years Teaching Experience (median, IQR)	10 (10-17)
Work Status, <i>n</i> (%)	
Full Time	445 (89.2%)
Part Time	54 (10.8 %)
Education, <i>n</i> (%)	
Doctoral Degree	235 (47.1%)
No Doctoral Degree	264 (52.9%)
Certification, <i>n</i> (%)	
Educator	79 (15.8%)
Advanced Practice	128 (25.8%)
Resilience (CD-RISC 10 Scale Range 0-40)	
Mean (SD)	32.29 (4.81)
Median (IQR)	32.00 (29-36)
Compassion Satisfaction (MLQ-P Scale Range 5-35)	
Mean (SD)	31.11 (3.82)
Median (IQR)	31.00 (29-35)
Perceived Support, <i>n</i> (%)	
Presence of Support	458 (91.8%)
No Presence of Support	41 (8.2%)

CD-RISC 10 Connor-Davidson Resilience Scale (10 item) ³⁰

MLQ-P Meaning in Life Questionnaire – Presence Subscale ²⁸

scores and psychiatric symptoms.³⁰ As hypothesized, higher scores predicted lower psychiatric symptoms in those who experienced childhood trauma. Convergent validity was also established by comparing CD-RISC 10 scores to other resilience scales; demonstrating positive correlations between the measures.³³

Compassion Satisfaction

CS was operationalized in this study using the presence of meaning subscale on the Meaning in Life Questionnaire (MLQ),²⁸ consisting of 5 items rated from 1 (absolutely untrue) to 7 (absolutely true). This subscale (MLQ-P) measures how full respondents feel their lives are of meaning, an intrinsic component of compassion satisfaction. Participants scoring above 24 on the presence subscale (ranges between 5-35) feel their life has a valued meaning and purpose.²⁸

The MLQ-P is a reliable and valid measure. Internal consistency of the presence subscale was acceptable in a population of college students ($\alpha = 0.81-0.86$) and test-retest stability was sufficient in the same population. Convergent and discriminant validity were established through comparisons with other established measures.²⁸

Perceived Support

In this study, PS was operationalized using individual items of the CD-RISC 25 that correspond to the concept. Participants response to item two, “I have at least one close and secure relationship that helps me when I am stressed”, and item 13, “During times of stress/crisis I know where to turn for help”, on the CD-RISC 25 were used to measure PS.²⁷ Participants who rated these items as “often true” or “true nearly all the time” were categorized as having support. Face validity was established by review and agreement from established researchers with expertise in the study of resilience and familiarity with the conceptual model.

Demographic Factors

Demographic variables were identified as potential covariates in the study. Variables included educational level (doctoral degree/no doctoral degree), age (less than 44 (GenZ/Millennials); 44-59 (Gen X); 60 and over (Boomer), race (nonwhite/white), and years of teaching experience.

Data Analysis

Bivariate analyses were conducted to examine the relationships between variables. Resilience data was skewed so non-parametric tests were used. Assumptions for homoscedasticity, linearity and multicollinearity were met. Multiple linear regression was used to determine the predictive relationship between PS and CS with the outcome variable of interest, resilience. Subsequent multiple linear regression was conducted to analyze the predictors of resilience with the addition of age, a significant covariant of resilience in this sample. Due to non-normal distributions, resilience and CS data were log-transformed prior to being entered into the regression models.

Data was initially collected from 513 participants. Analysis revealed missing value patterns to be missing completely at random (MCAR). Most cases (89.1%) and values (99.1%) were complete in the data set. Median imputation replaced missing data for years of teaching experience, CS scores, and resilience scores. Subsequently, a total of 14 cases were deleted for missing data in greater than 80% of resilience scale items (6 cases) or missing data in the remaining categorical variables (PS, age, education level, 8 cases). All statistical analyses were conducted using SPSS v28.0.

The sample size exceeds the minimum participants necessary for multiple regression. A power analysis was conducted using an online a-priori sample size calculator for multiple

regression to determine necessary sample size.³⁴ For an effect size of 15%, statistical power 0.8, 95% confidence interval, and 8 predictors the minimum required sample size is $n=108$.

Results

Most study participants identified their race as white (90.4%) and were from the Gen X generation (43.7%), compared to the Boomers (30.3%) and GenZ/Millennials combined (26.1%). Educational level was more evenly distributed with 47.1% of participants having a doctoral degree and 52.9% without a doctorate. The median resilience score for the study sample was 32 on a 0-40 scale ($\alpha = .855$). The median CS score was 28 on a 5-35 scale ($\alpha = .853$). In addition, most participants were categorized as having support (91.8%) versus those who did not (8.2%). **Table 2** presents a descriptive analysis of demographics and all study variables.

Table 3 presents bivariate analysis of resilience scores by age, education level, race/ethnicity, and presence of PS. A Kruskal Wallis test indicated resilience scores differed significantly between age groups ($p=.011$). In addition, a Mann Whitney U test revealed resilience scores were significantly higher among participants with PS versus those without ($p<.001$). Correlational analyses revealed a significant positive relationship between CS and resilience (Spearman's $\rho = .451$, $p<.001$).

Results from multiple linear regression examining resilience scores and predictors CS, PS, after controlling for age indicate the overall model was statistically significant ($F(4, 494) = 38.666$, $p < .001$). Furthermore, the model explained greater than 20% of the variance in the dependent variable resilience ($R^2 = .238$, Adjusted $R^2 = .232$). In terms of individual predictors, analysis indicated participants from the Gen X ($B=.016$, $SE=.007$, $\beta=.115$, $p=.018$) and Boomer generations ($B=.025$, $SE=.007$, $\beta=.115$, $p<.001$) had significantly higher resilience scores than Millennials and Gen Z participants. In addition, participants with support had higher resilience

Table 3. *Bivariate Analysis of Variables and Resilience*

	Resilience (CD-RISC 10)	P value
	Median (IQR)	
Age		.011*
Millennial & Gen Z (under 44)	32.00 (28.00-35.00)	
Gen X (44-59)	32.00 (29.00-35.00)	
Boomer (60 & above)	33.00 (30.00-37.00)	
Race		.702
Non-white	31.50 (28.25-36.75)	
White	32.00 (29.00-36.00)	
Education		.780
Doctoral Degree	32.00 (29.00-36.00)	
No Doctoral Degree	32.00 (29.00-36.00)	
Perceived Support		< .001**
Presence of Support	32.00 (30.00-36.00)	
No Presence of Support	28.00 (24.00-31.50)	
	Spearman's rho	
Years of Teaching Experience	.044	.328
Compassion Satisfaction (MLQ-P)	.433	< .001**

CD-RISC 10 Connor-Davidson Resilience Scale (10 item)³⁰

MLQ-P Meaning in Life Questionnaire – Presence Subscale²⁸

** statistically significant at the $p < .05$ level*

*** statistically significant at the $P < .001$ level*

scores relative to those without support ($B=.052$, $SE=.01$, $\beta=.209$, $p<.001$). CS was the strongest predictor with higher resilience scores associated with higher levels of CS ($B=.144$, $SE=.016$, $\beta=.361$, $p<.001$).

Discussion

Analysis indicated significant relationships between age, CS, PS, and resilience. Education level, race, and years of teaching experience were not associated with resilience in this study sample. Furthermore, as hypothesized CS and PS were significant predictors of resilience after controlling for variations in age.

Resilience levels were moderate (median 32) and similar to those previously reported in the literature using the same measure (CD-RISC 10). Moderate resilience levels were previously reported in combined samples of pre and post licensure faculty with means ranging from 30-32.65 on a scale of 0-40.^{10,17,35}

Age was the only demographic variable significantly related to resilience in this sample of PNF. Most of the previous research has not found statistically significant differences in resilience between different age groups. Only one study reported higher resilience levels in older nursing faculty using the CD-RISC 25 item scale as the measure of resilience.¹⁶ Several other studies using the CD-RISC 10 to measure resilience in nursing faculty found no significant difference in resilience levels based on age.^{17,16,36} These differences could be explained by the difference in sample sizes given all three of the previous studies were conducted using less than 100 participants. In addition, the influence of age on resilience levels could be a unique factor in PNF as each of the previous studies examined combinations of pre and post licensure or post licensure only samples.

Analysis revealed CS was the strongest predictor of resilience. Previously, Sessions et al. found CS levels were higher in participants with higher resilience scores in a combined sample of pre and post licensure nursing faculty.²⁵ However, the measures of CS and resilience used in this research et al. differed from those used in this study.²⁵ The results in this study build upon the previous work to not only correlate CS with resilience but identify it as a strong predictor of resilience PNF.

PS was also identified as a significant predictor of resilience in the sample. PS has previously been associated with resilience in nursing faculty through qualitative methodologies.^{12,13,14,15} These results build upon previous knowledge to link these concepts using quantitative measures and methodologies in PNF.

Limitations

This study is subject to several limitations. Convenience sampling techniques used in the original data collection limit the generalizability of the findings due to potential nonrepresentative sample and selection bias. Our use of a secondary dataset precluded examination of every concept included in the ProQOL Health Conceptual Model, as there were no measures in the data set to operationalize compassion fatigue and its components. Another limitation of the study was the measure used for PS, which has not been validated in the literature. The time span between data collection and data analysis was another limitation of this study. Finally, the data predates the COVID-19 pandemic and the resultant changes in academic work environments.

Conclusion

Despite these limitations, our results contribute to a greater understanding of resilience and associated factors in PNF. This study highlights the importance of CS and PS in fostering

resilience among PNF. Understanding these factors can guide academic institutions in developing interventions to retain nursing faculty, thereby addressing the broader nursing shortage. Interventions at the faculty level and organizational level focused on CS and PS have the potential for positive effects on resilience levels in PNF.

Given CS is the strongest predictor of resilience in PNF strategies to increase CS should be a priority focus. Healthy workplace practices such as adequate staffing, professional development, and promoting cultures of caring have been associated with increased levels of CS in nurses.^{37,38} These practices could be extended to PNF by considering alternative workload calculations, limits on student to faculty ratios, and prioritizing caring leadership practices. Secondly, strategies to increase support can be focused on the personal level as well as the structural level. On a personal level, assisting individuals to identify and utilize their current support networks may increase levels of PS.²¹ Administrators and educational leaders should consider development of formal support networks such as peer networks, coaching, and mentoring. In addition, age was found to be a significant covariant in this population and can assist programs in selecting younger audiences for implementing interventions to promote resilience when resources are limited.

More research is necessary to elucidate the concepts in the ProQOL model not examined in this investigation, and in particular, to explore their relationship to resilience in PNF. Additional research is needed to determine whether, and how, the observed relationships have changed since the COVID pandemic. And finally, future research should explore workplace practices and their relationships with CS, PS, and resilience in PNF, ideally using randomized designs to increase generalizability. Results will guide organizations and leaders to foster

resilience and promote retention of prelicensure nursing faculty, maximizing their contributions and serving to minimize negative impacts from the looming nurse and nurse faculty shortages.

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Chapter IV: Resilience as a Potential Moderator in Professional Quality of Life

This manuscript, Resilience as a Potential Moderator in Professional Quality of Life, (Scholarly Paper #3) was prepared for submission to *The Journal of Nursing Education*. The preferred citation format for this journal is the American Psychological Association, 7th Edition.

Abstract

Background:

Resilience is an important concept in nursing faculty, potentially mitigating burnout and encouraging faculty retention. A cross-sectional study was conducted to examine potential predictors of resilience in prelicensure nursing faculty. Choice of a theoretical framework to guide this research was essential.

Method:

Smith and Liehr's (2018) framework for evaluation of middle range theories was applied to evaluate the Professional Quality of Life (ProQOL) Health Conceptual Model for use as the theoretical foundation to examine predictors of resilience in prelicensure nursing faculty.

Results:

Compassion satisfaction (CS) and perceived support (PS) were significant predictors of resilience in a population of 499 prelicensure nursing faculty. Implications for theory development are discussed based upon our findings and those of others.

Conclusion:

Use of the ProQOL Health Conceptual Model revealed the critical role of CS and PS in fostering resilience in prelicensure nursing faculty. Additionally, the results contributed to the further development of the model, suggesting resilience as a potential moderator between PS, CS, and burnout, a key component of compassion fatigue.

Keywords: resilience, professional quality of life, compassion satisfaction, perceived support, burnout, nursing faculty

Introduction

Nursing involves complex interactions between biological, psychological, social, and environmental factors (Smith & Liehr, 2018). Theories provide a structured way to understand these complexities, allowing researchers to conceptualize and study how varied factors influence health. Theory based research promotes the development of hypotheses and subsequently new research questions. Through testing and refining theories, nurse researchers contribute to the advancement of the profession and new knowledge that can improve nursing care and nursing education. This manuscript describes the rationale for and use of the Professional Quality of Life (ProQOL) Health Conceptual Model (CVT, 2021) to guide a secondary analysis of resilience in prelicensure nursing faculty. Implications for theory development are reviewed.

Study Overview

The current nursing faculty shortage is dire and inhibits the ability to address the nursing workforce shortage (AACN, 2024). Mitigating occupational burnout to retain qualified nursing faculty is essential. Resilience has been shown to mitigate occupational burnout in populations of healthcare workers (Ferreira & Gomes, 2021) and nurses (Mei et al, 2022; Rushton et al., 2015), but the body of literature in nursing faculty is small. The few studies that are published have inconsistent findings and generally were conducted at single sites with small sample sizes (Jones & Beebe, 2024). Furthermore, no examinations of resilience in a sample consisting solely of prelicensure nursing faculty were identified. This population has the highest reported shortages (NLN, 2023) and the ability to rapidly increase the number of new nurses in the profession. To address the gaps in knowledge we conducted a cross-sectional study using secondary data analysis to examine potential predictors of resilience in a sample of 499 prelicensure nursing faculty teaching across the U.S. and Canada.

Professional Quality of Life (ProQOL) Health Conceptual Model

Professional quality of life is defined as the quality one feels in relation to one's work in healthcare. Three main concepts comprise the ProQOL Health conceptual model (CVT, 2021): 1) compassion satisfaction 2) perceived support and 3) compassion fatigue. The model provides a useful framework for assessing the wellbeing of healthcare workers.

Compassion satisfaction (CS) is the sense of fulfillment, satisfaction, or joy one experiences from helping others. CS is the positive aspect contributing to ProQOL and represents the rewards and motivation that individuals gain from their work caring for others. Intrinsic factors influencing CS include a sense of purpose or accomplishment and empathy. Positive feedback, supportive work environments, and the ability to provide quality care are extrinsic factors contributing to CS in workers (CVT, 2021). CS is significant to wellbeing and can mitigate the negative aspects of ProQOL (Sukut et al, 2022).

Perceived Support (PS) is an individual's perception of being cared for, valued by others, and belonging to a mutually supportive network. Both personal and professional support are important in ProQOL. Personal or informal support includes family, friends, emotional and instrumental support. Professional support includes formal organizational structures such as supervisor support, mentoring support from co-workers or peers, and psychological support from a mental health professional (CVT, 2021).

Compassion fatigue (CF), a negative aspect of ProQOL, is a state of emotional distress and exhaustion resulting from the work environment. CF develops as a result of secondary traumatic stress, burnout, and moral distress. These factors of CF are defined as:

- Secondary traumatic stress (STS)– stress and emotional disruption from continued contact or single exposure with individuals who have directly experienced trauma.

- Burnout (BO)- emotionally depleted or drained after periods of long-term work-related stress.
- Moral distress (MD) - unable to take appropriate action or when one must act in ways contrary to personal and professional values.

The ProQOL Health Conceptual Model proposes that ProQOL consists of strengths (CS) and vulnerabilities (CF) that positively or negatively contribute to ProQOL (Stamm, 2010). It is suggested that PS guards against risk by lowering rates of CF and BO (Pergo-Metko & Czyzewski, 2021; Setti, Lourel, & Argentero, 2016). Furthermore, the presence of STS, BO, and MD increases the likelihood of CF (Cocker & Joss, 2016; Dasan et al., 2015).

Theoretical Critique

Smith and Liehr's (2018) framework for evaluation of middle range theories was applied to evaluate the ProQOL Health Conceptual Model for use as the theoretical foundation of this study. The evaluation framework provides a structure for critiquing the model in three domains, 1) substantive foundation, 2) structural integrity, and 3) functional adequacy. **Table 4** presents the evaluative criteria associated with each domain.

Substantive Foundation

The ProQOL Health Conceptual Model meets the criteria for substantive foundation as identified by Smith and Liehr (2019, p.39-41). While the theory was not developed by nurse researchers or exclusively for use within the discipline of nursing, the concepts are applicable to the discipline and fall within the nursing meta-paradigm. Quality of Life phenomenon is within the focus of the discipline of nursing (caring in the human health experience) (Smith & Liehr, 2018, p.7). Furthermore, the ProQOL Health Conceptual Model explains quality of life within the context of healthcare work environments. Stamm (2010) identified the influences of person,

Table 4. *Theory Evaluation Framework.*

Evaluation Domains	Criteria	Description
Substantive Foundation	Significance	Determines if the theory addresses important nursing issues and is relevant to nursing practice.
	Disciplinary Perspective	Assesses whether the theory and its underlying assumptions align with nursing's unique body of knowledge and values.
	Social Utility	Evaluates the potential impact of the theory on health outcomes, nursing practices, or education and if the origins are derived from research and practice.
Structural Integrity	Clarity	Ensures that concepts, definitions, and relationships are clearly defined and easily understood.
	Internal Consistency	Examines the logical coherence and alignment of concepts and propositions within the theory.
	Parsimony	Considers whether the theory is simple yet comprehensive, avoiding unnecessary complexity.
Functional Adequacy	Testability	Evaluates whether the theory's concepts and relationships are measurable and can be empirically tested.
	Empirical Adequacy	Assesses the extent to which the theory is supported by research evidence and real-world observations.
	Pragmatic Adequacy	Considers the practical applicability of the theory to solve real-world nursing issues and guide practice.

Smith, M.C. (2018). Evaluation of middle range theories for the discipline of nursing. In Smith, M. J., & Liehr, P. R. (Eds.) *Middle range theory for nursing* (4th ed., pp. 33-45). Springer Publishing Company.

environment, and health, all components of the nursing metaparadigm (Smith & Liehr, 2018, p.7) in the original ProQOL model. Work environment, personal traits, and exposure to trauma in the work setting are all associated with the complex phenomenon ProQOL. Further examination of this conceptual model and its roots revealed its alignment with the values about persons and the complexity of change of the interactive-integrative nursing paradigm. The interactive-integrative nursing paradigm sees the person as interacting with the environment in a mutual fashion and change as complex and related to multiple factors (Smith & Liehr, 2018, p.16). Furthermore, both the ProQOL model and the interactive-integrative nursing paradigm were developed from a social science knowledge base. Assumptions of the ProQOL model that align with nursing's integrative-interactive paradigm include that a person is a unique individual with physical, emotional, and social dimensions and that their health is influenced by a multitude of factors. While the integrative-interactive nursing paradigm provides assumptions about persons and change that aligns with the ProQOL conceptual model, these assumptions were not specified by the developers and can only be inferred by interactions explained by the model.

Additionally, the origins of the ProQOL are rooted deeply in research and the model has evolved through its application in many practice settings. Setti, Lourel, and Argentero (2016) found support was a potential protective factor against BO in Italian emergency workers. Similarly, Pergo-Metko and Czyzewski (2021) found higher levels of PS were associated lower levels of CF in a large sample of Polish nurses, suggesting PS may mitigate negative factors contributing to ProQOL. Additionally, in a review of quantitative literature Oh and Gastman (2015) concluded BO is linked to ProQOL in nurses experiencing MD. Based on these and other applications of ProQOL in healthcare research, PS and MD were identified as additional

components of ProQOL and added to the updated model for health care workers by the Center for Victims of Torture (CVT, 2021).

Structural Integrity

The concepts used in the ProQOL model are clearly defined by the developers and congruent definitions of these concepts are included in the research across disciplines.

Furthermore, the relationships between concepts are logically represented in the model. The ProQOL Health Conceptual Model proposes that ProQOL consists of strengths (CS) and vulnerabilities (CF) that positively or negatively contribute to ProQOL. It is suggested that PS guards against risk by lowering rates of CF and BO. Furthermore, the presence of STS, BO, and MD increases the likelihood of CF.

Functional Adequacy

The functional adequacy of the ProQOL Health Conceptual Model is compelling. The model has been used across many disciplines of helping professions including healthcare, social work, and psychology. Within nursing the model has been used in a variety of contexts including critical care, pediatric, and education settings. The use in the context of nursing faculty is limited with only one study found (Rothacker-Peyton et al., 2022) in a review of the literature.

Empirical indicators for measuring all concepts in the ProQOL Health Conceptual Model exist. Valid measures have been provided by the developers of the model to measure all included concepts. The developers provide detailed scoring instructions related to the risk for CF within the model. Additionally, the dataset available for this study included measures of concepts PS and CS within the model. The ProQOL Health Conceptual Model has evolved through scholarly inquiry as it has been updated for use in the context of healthcare workers (CVT, 2021).

Despite the strengths outlined, limitations were found. The model does not include resilience as a core concept, potentially limiting its application to the investigation of resilience in nursing faculty. However, there is current evidence in the literature linking resilience to core concepts in the ProQOL conceptual model. Two studies found higher levels of resilience were associated with higher levels of CS and lower levels of BO and CF in trauma responders (Gonzalez et al., 2019) and social workers (Ratzon et al., 2022). Additionally, BO and STS (components of CF) were found to be significant predictors of overall resilience in the same population of social workers (Ratzon et al., 2022). Similar relationships were seen within nursing research. In a population of mental health nurses, Alonzai et al. (2023) reported significant positive correlations between resilience and CS and significant negative correlations with the components of CF, BO, and STS. Additionally, Alrasheadi (2022) reported significant positive correlation between overall ProQOL and resilience among nurses in Saudi Arabia working in public hospitals during the COVID-19 pandemic. Furthermore, pediatric nurses were found to have significantly increased CS scores after participating in a staff resilience program (Flanders et al., 2019). Based on the linkages in the literature between resilience and the concepts within the ProQOL Health Conceptual Model, the authors contend that resilience may be an unidentified concept influencing ProQOL and therefore the model was applicable to the investigation of resilience in nursing faculty.

Operationalizing the ProQOL Health Conceptual Model

This study operationalized two concepts included in the ProQOL Health Conceptual Model: PS and CS. These concepts and their relationships with resilience were examined in a population of prelicensure nursing faculty. Resilience was measured by the overall resilience score on Connor Davidson Resilience Scale (CD-RISC 25-Connor & Davidson, 2003). The CD-

RISC 25 is a 25-item scale that measures resilience on a scale of 0-100 with higher numbers representing higher levels of resilience.

Perceived Support

Perceived support is an individual's perception of being cared for, valued by others, and belonging to a mutually supportive network. In this study, PS was operationalized using individual items of the CD-RISC 25 that corresponded to the concept. Participants response to item two, "I have at least one close and secure relationship that helps me when I am stressed", and item 13, "During times of stress/crisis I know where to turn for help", on the CD-RISC 25 (Connor & Davidson, 2003) were used to measure PS. Higher ratings on the 0-4 scale corresponded to higher levels of PS.

Compassion Satisfaction

Compassion Satisfaction is defined as a sense of fulfillment, satisfaction, or joy one experiences from helping others, and positively impacts overall ProQOL. CS was operationalized in this study using the presence of meaning subscale on the Meaning in Life Questionnaire (MLQ-Steger, 2006). This subscale measures how full respondents feel their lives are of meaning, an intrinsic component of CS. Participants scoring above 24 on the presence subscale (ranges between 5-35) feel their life has a valued meaning and purpose (Steger, 2006).

Study Results

The study results highlighted the importance of CS and PS in fostering resilience among prelicensure nursing faculty. Secondary data analysis revealed significant relationships between age, CS, PS, and resilience. After controlling for variations in resilience due to age CS and PS were both significant predictors of resilience in this population of prelicensure nursing faculty.

The reader is referred to Jones and Beebe (in press) for a detailed discussion of concepts examined, procedures, analysis and results.

Implications for Theory Development

Empirical evidence is necessary to explain and predict phenomena in theory development. One previous study described concepts from the ProQOL Health Conceptual Model in a small population of combined pre and post licensure faculty. Rothacker-Peyton et al. (2022) described the ProQOL of the sample, revealing moderate levels of CS, CF, and BO. The study also reported moderate levels of resilience among participants, but relationships between resilience and the components of ProQOL were not examined. The results of our study provide insights into the relationships between the concepts contributing to ProQOL and resilience. Our results further the understanding of the association between resilience and concepts in the ProQOL model. Based on our results suggesting that both CS and PS are predictors of resilience and previous results linking components of CF and resilience, we considered whether resilience could be a potential moderator or mediator within the ProQOL Health Conceptual Model.

Considering multiple variables within a model results in many potential and complex relationships. A mediating variable explains the relationship between an independent and dependent variable, and a moderating variable changes the nature of the relationship between variables. The inclusion of mediating or moderating variables in research is important for theory testing and refinement, furthering the understanding of complex relationships (McKinnon, 2011). In the case of PS, our work supports earlier qualitative investigations reporting support as a factor in developing resilience (Jones & Beebe, in press). With regards to CS, our study concluded CS was the most significant predictor of resilience in this population (Jones & Beebe, in press). In addition to the links between CS and resilience in other nursing populations

(Alonzai et al., 2023; Flanders et al., 2020), a previous study of Turkish psychiatric nurses concluded nurses with higher levels of resilience and CS were less likely to experience BO (Sukut et al., 2022). Since earlier research indicates that resilience mitigates the ProQOL concept of BO (Mei et al., 2022), we propose the addition of resilience to the ProQOL model as a potential moderator (see **Figure 3**). As a moderator in the model, we propose that resilience alters the relationships between BO and CS and PS, and between BO and overall ProQOL. This addition proposes high levels of resilience mitigate the adverse effects of BO and amplify the positive effects of CS and PS, positively influencing overall ProQOL.

Directionality of relationships between the concepts in the model was not included by the developers. Based on the results of our study in prelicensure nursing faculty and previous research linking these concepts in other populations, we propose the addition of directionality to the model representing the potential influence of concepts in the model related to resilience as illustrated in **Figure 3**.

Limitations

An important missing piece of empirical evidence in the prelicensure nursing faculty population is the examination of resilience and its relationship to the negative aspects or vulnerabilities of ProQOL. Future studies in this population need to include measures of CF and its components, BO, STS, and MD. Analysis should also include testing the mediating and moderating effects of resilience on the relationships between components of CF, PS and CS. Previous research in the components of CF and resilience suggested resilience may mitigate the effects of these negative aspects of ProQOL in populations of nurses (Alonzai et al., 2023). Similar evidence in populations of nursing faculty would add to the context in which the ProQOL conceptual model is applicable and further refine the relationships within the model.

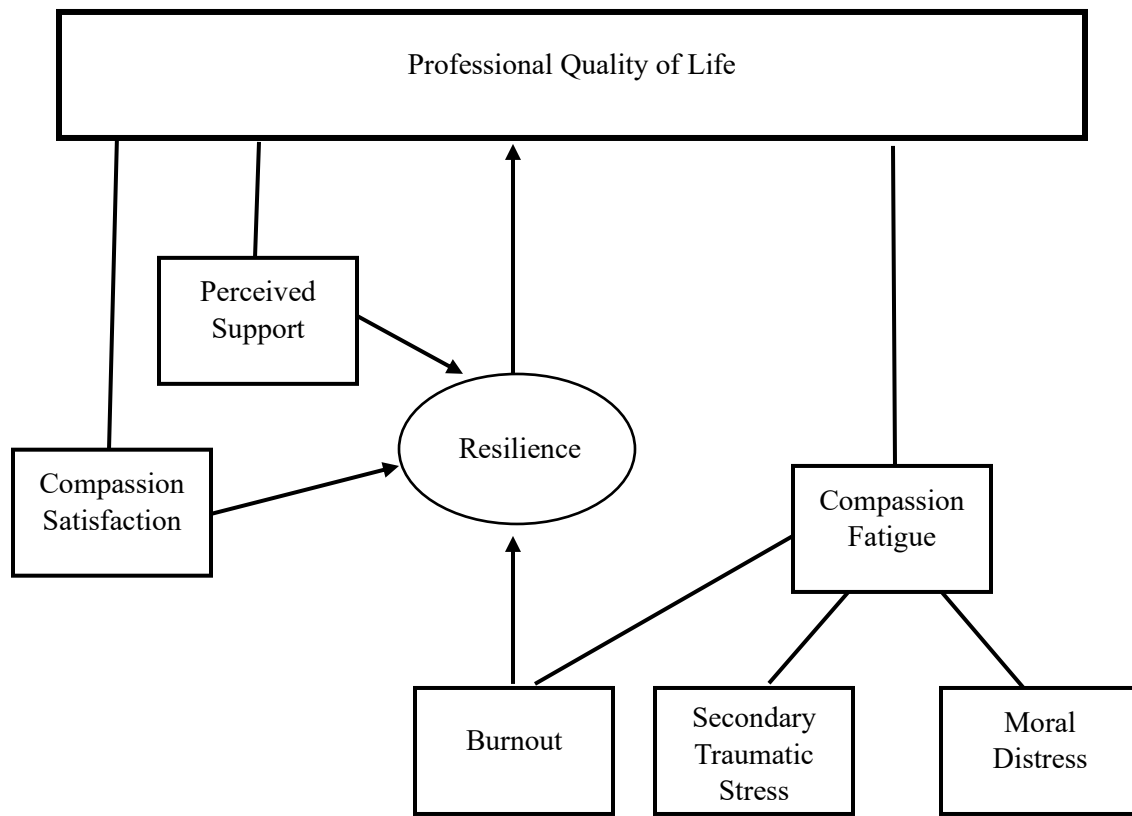


Figure 3. *Resilience as a Potential Moderator in the ProQOL Health Conceptual Model*
Note: Figure is adapted from The Conceptual Model of Professional Quality of Life. From ‘Professional Quality of Life (ProQOL) Health Manual’, 2021, <https://proqol.org/proqol-health-manual>. Copyright 2021 by the National Center for Victims of Torture.

Conclusion

This investigation, guided by the ProQOL Health Conceptual Model, revealed the critical role of CS and PS in fostering resilience in prelicensure nursing faculty. Operationalizing key concepts of the model furthers our understanding of how resilience functions within this specific population. Additionally, the results contribute to the further development of the ProQOL Health Conceptual Model, suggesting resilience as a potential moderator between PS, CS, and burnout, a key component of CF. To better understand the role of resilience in ProQOL additional research is necessary to examine the relationships between resilience and the key components of CF in prelicensure nursing faculty. Investigating these relationships would increase the applicability of the ProQOL Health Conceptual model to nursing faculty and provide beneficial insights into mitigating the challenges faced by this critical workforce. Ultimately, this has the potential to improve retention of prelicensure nursing faculty thereby addressing the ongoing nursing workforce shortage.

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Chapter V: Conclusion

The first manuscript of this dissertation presented an integrative review of the current literature describing the current state of the science of resilience in nursing faculty (Jones & Beebe, 2024). Analysis of 14 studies published between 2015 and 2023 revealed three major foci: 1) descriptions of resilience levels in nurse faculty, 2) examinations of resilience based upon demographic factors, and 3) resilience and related concepts.

The integrative review revealed the body of literature on resilience in nursing faculty is small. The populations of interest in the reviewed studies include prelicensure and post licensure faculty, most commonly a combination of both. However, little is known about resilience in prelicensure faculty alone. Research included in the review demonstrated conflicting demographic differences in resilience levels of nursing faculty, supporting the need for additional research. Analysis also revealed QOL, components of QOL, and support are associated with resilience in nursing faculty, but more rigorous quantitative analysis is necessary to understand the predictors of resilience in this population. This dissertation study builds upon previous research by investigating relationships between the concepts of QOL and support with resilience in nursing faculty. Furthermore, this study addresses methodological gaps in the current literature including a lack of rigorous quantitative analysis using large samples from multiple sites.

The second manuscript of this dissertation presented the methodology and results of the dissertation study examining the predictors of resilience in prelicensure nursing faculty. These results add to the body of nursing knowledge identifying CS and PS as significant predictors of resilience in PNF while controlling for variances due to age in the sample. Limitations of the dissertation study and implications for academia and nursing research were also outlined in this manuscript.

The third manuscript presented an analysis of the use of the ProQOL Health Conceptual Framework as the theoretical basis for this dissertation study. This manuscript discussed the rationale for choosing the ProQOL Health Conceptual Model (CVT, 2021) as the theoretical foundation for the investigation of predictors of resilience in PNF. The theoretical implications of this study provide insight into the role of resilience in professional quality of life. The results of this study suggest resilience as a moderator in the conceptual model contributing to the further development of the ProQOL Health Conceptual Model.

In addition to the limitations discussed in the manuscript, “Predictors of Resilience in Prelicensure Nursing Faculty”, there are also limitations related to the analysis itself. Operationalization of PS was an additional limitation of this study. Participants were categorized as having support if both corresponding items on the Connor Davidson Resilience Scale were rated “often true” or “true nearly all the time.” This measure of the concepts does not account for participants with mixed responses to the two items. Future research is warranted to validate this measure of PS and examine additional measures in similar populations.

Another limitation was the variance explained by the model. The predictors in the regression model explained 23.8% of the variance in resilience of this study sample, indicating additional factors contributing to the variance. It is likely that negative factors (compassion fatigue and its components) contributing to ProQOL are also contributing to variance in resilience levels and warrant inclusion in future research.

Resilience in PNF as outlined in this study will provide a foundation for interventions to improve resilience. Evaluating CS and PS and their relationship to resilience helps identify important components to interventions that foster resilience in this population. This foundation has research, policy, and practice implications at the organization, state, and national level.

Research Implications

The third manuscript identified the need for additional research using the ProQOL Health conceptual model to examine the association of the model concepts and resilience in PNF. CS and PS were both identified as significant predictors of resilience in this study. Subsequent research to investigate the effects of interventions designed to increase CS and PS on resilience in PNF is necessary. This manuscript presents potential directions for interventions related to CS and PS.

This study was limited by the data collected in the original dataset which did not measure the negative contributors to ProQOL, compassion fatigue, and its factors, burnout, secondary traumatic stress, and moral distress (CVT. 2021). While it is beneficial to understand positive factors of ProQOL and their influence on resilience in PNF, understanding resilience in relation to negative factors of ProQOL is also necessary. Previous research has suggested resilience may moderate these negative factors in populations of nurses (Rushton et al., 2015; Mei et al., 2022). Similar findings were reported regarding academic faculty in general. Garcia-Rivers et al. (2022) found significant links between resilience and burnout components in a large population of professors in a Mexican public university, and concluded professors with higher levels of resilience were less likely to experience work related burnout. Understanding these negative factors in relation to resilience in PNF is an important next step. Future research should replicate large sample sizes with PNF from diverse geographic areas while using valid and reliable measures of resilience and the concepts of ProQOL Health Conceptual Model.

Another limitation of this study was the time frame of data collection. Data was collected prior to 2020 and the COVID-19 pandemic, and the data analyzed in 2024. Analysis of resilience in PNF and the predictors established in this study should be replicated in data from a

more current sample. This will elucidate any differences resulting from changes in faculty makeup or academic work environments during this period.

Policy and Practice Implications

This study identified significant variances in resilience based on age in PNF and has implications for organizational policy in two ways. First, prelicensure nursing faculty are in greatest demand. The National League for Nursing (NLN) 2022 survey of nursing programs reported 700 of the 1,005 nursing vacancies are in prelicensure nursing programs (NLN, 2023). Interventions that promote resilience could improve faculty retention in this target group who are preparing nurses for initial licensure. Secondly, interventions promoting resilience should targeted towards younger PNF, those more likely to have lower levels of resilience. Academic organizations preparing future nurses face mounting economic challenges and evidence based targeted interventions to promote resilience make the most efficient use of an organization's resources.

Promoting resilience in PNF has the potential to improve the preparation of nurses for practice. Research in nursing practice has shown that healthy work environments, which include psychological well-being, influence the quality of patient care provided (Lake et al., 2019; Wei et al., 2018). It is reasonable to postulate the same links in an academic environment. Promoting resilience may provide higher quality education to its students related to a healthier work environment for faculty.

State Implications

Many state boards of nursing have a statute or rule requiring prelicensure programs to have adequate numbers of faculty to educate the students within the program. Tennessee Board of Nursing specifies that the number of faculty are adequate to meet the purposes and objectives

of the program (TN BON, 2021). The Kentucky Board of Nursing goes further in measuring and publicly reporting faculty turnover as a benchmark (30%) for evaluating prelicensure nursing programs (KY BON, 2023). Faculty turnover negatively impacts the ability of nursing programs to comply with state rules, regulations, and benchmarks. Furthermore, programs unable to comply with these regulations or meet the benchmarks are at risk for their continued approval status, limiting the state's ability to prepare new nurses to enter the workforce. Findings from this study lay the groundwork for interventions to promote resilience in prelicensure nursing faculty. Burnout components have been linked to intent to leave academia in nursing faculty (Aquino et al., 2018). Previous research in practicing nurses has shown resilience levels to moderate and reduce levels of burnout (Ferreira & Gomes, 2021; Rushton et al., 2015). Assuming this relationship exists within academia as well as practice, promoting resilience will aid programs of nursing retaining experienced faculty, thus increasing their ability to comply with state regulations and benchmarks.

States have a vested interest in maintaining and expanding access to nursing education within their state. Without adequate access to education nursing shortages will continue to worsen, negatively impacting the health of their communities. Evidence surrounding resilience in PNF provides rationale for states to prioritize the psychological health of faculty through policy, BON regulations, and most importantly funding.

Education Implications

Role Modeling

Transformational leadership theories identify role models as an important evidence-based leadership practice. Kouzes and Posner's transformational leadership theory identifies practices for exemplary leadership and one of these is modeling the characteristics one hopes to

see in others (Posner, 2021). A significant amount of research has focused on promoting resilience in nursing students to prepare them to adapt and cope with the challenges of the academic environment and nursing practice (Aryuwat et al., 2023). Researchers have promoted the inclusion of resilience concepts in nursing curriculum and interventions to promote student resilience (Aryuwat et al., 2023; McDermott et al., 2020). However, these changes were proposed with little knowledge about resilience in the nursing faculty who are responsible for teaching these concepts and promoting resilience among students. Nursing faculty act as nurse leaders to guide students into the nursing profession and need to role model behaviors that support a healthy work environment and adapting to challenges. Knowledge gained from this research informs us about resilience and subsequent interventions to promote resilience in PNF. It is imperative for faculty to be resilient and understand how best to promote resilience if they are expected to guide curricular decision surrounding resilience and support resilience in future nurses.

Healthy Work Environments

Healthy work environments have been associated with increased levels of CS in nurses (Jarrad & Hammad, 2020; Yilmaz, Ususun, and Gnusen, 2018), and CS was identified as a significant predictor of resilience in this study. Creating safe, empowering, and healthy work environments is an advocacy priority for the American Nurses Association (ANA, 2023). The Association for Critical Care Nurses (AACN) has surveyed the nursing workforce and guided the development of healthy work environments in critical care nursing since 2005. Their most recent survey reveals a decline in the health of work environments. (Ulrich et al., 2022). Academic organizations have also advocated for improvements to the work environment. The National League for Nursing (2018) provides guidance to improve the health of the academic work

environment in seven areas: 1) safe, civil, and collegial environments, 2) salary, 3) benefits, 4) workload, 5) role development and mentorship, 6) scholarship, and 7) leadership. However, resilience is not mentioned in the resources nor is psychological health addressed within the resources to promote a healthy academic environment. Additionally, nurse psychological health has been linked to the health of work environments in the practice arena (Ullrich et al, 2022). Furthermore, resilience in nursing faculty is associated with aspects of psychological health as evidenced by negative correlations between resilience levels and depression, anxiety, and stress (Losa-Iglesias et al., 2022). Looking towards the future, the leaders in academic environments need to prioritize the well-being of nursing faculty to maintain and expand access to nursing education. Interventions focused on improving the academic work environment for PNF have the potential to increase CS and thereby foster resilience in this population.

Prioritizing faculty health and well-being is a transformational change for nursing education that must be supported through regulatory and accreditation efforts. Regulatory and accreditation requirements drive priorities, policies, and procedures in nursing education. The Commission on Collegiate Nursing Education (CCNE, 2024) requires evidence of fiscal, physical, and professional development resources. The Accreditation Commission for Education in Nursing (ACEN, 2023) includes a standard focused on faculty, requiring evidence of a sufficient number of faculty to meet the program outcomes and evidence of faculty orientation and mentorship. Evidence of support services for students is required to maintain accreditation by both CCNE and ACEN. Faculty support is noticeably absent from these accreditation requirements. Current requirements do not require evidence of critical support programs for faculty as they do for students. Given that PS is a significant predictor of resilience in this sample

of PNF, creation of support structures for faculty can promote resilience and potentially increase retention of faculty.

Future additions to accreditation standards to include evidence of services and programs to support a healthy work environment for nursing faculty are necessary for improvements to be seen. Since resilience can be linked to health and well-being in nursing faculty (Keener et al., 2021; Los-Iglesias et al., 2022; Urban et al., 2021), interventions to promote resilience could address this. Better understanding of resilience in PNF provides guidance for programs to implement interventions to meet any future regulatory requirements regarding faculty support services.

Conclusion

This dissertation study addresses gaps in the literature about the concept of resilience in nursing faculty. This study is unique in its examination of PNF only, a population in high demand and with the greatest potential to quickly increase the numbers of new nurses transitioning to practice. Identification of CS and PS as significant predictors of resilience in PNF guides future interventions to promote resilience in PNF. Promoting resilience in this population has the potential to increase capacity to prepare nurses to enter the workforce addressing the existing and worsening workforce shortage. This study also lays the groundwork to support future research further exploring the relationships between ProQOL, resilience, and retention of nursing faculty.

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Vita

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