Examining Relationships Among Nursing Students' Views of Suffering, Positive Thinking, and Professional Quality of Life

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EXAMINING RELATIONSHIPS AMONG NURSING STUDENTS’ VIEWS OF SUFFERING, POSITIVE THINKING, AND PROFESSIONAL QUALITY OF LIFE

by

Ruth Anne Engbers, BSN, RN

A Dissertation submitted to the Faculty of the Graduate School, Marquette University, in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Milwaukee, Wisconsin

May 2023
ABSTRACT
EXAMINING RELATIONSHIPS AMONG NURSING STUDENTS’ VIEWS OF SUFFERING, POSITIVE THINKING, AND PROFESSIONAL QUALITY OF LIFE

Ruth Anne Engbers, BSN, RN
Marquette University, 2023

Despite the association between nursing students’ exposure to suffering and the development of compassion fatigue, little research exists regarding promoting nursing students’ adaptation to caring for suffering patients and families. As a possible nursing shortage is projected, it is imperative to better understand the factors that impact this adaptation to ensure that nursing students can successfully transition into their nursing role. Although beliefs about the reasons for human suffering affect their ability to cope with their exposure to the suffering of others, there is no empirical data regarding nursing students’ views of suffering. Nursing students also report using positive reframing to cope with exposure to suffering. Guided by resilience theory, a cross-sectional, correlational design was used to investigate the potential moderating effect of positive thinking skills on the relationships between views of suffering and compassion fatigue and compassion satisfaction in undergraduate nursing students. A link to an online survey was distributed via email listserv within colleges of nursing at two Midwestern universities resulting in a sample of 157 junior and senior level nursing students. Multiple regressions revealed that views of suffering and positive thinking explained 23.8% of the variance in compassion satisfaction (F (11, 145) = 4.121, p < .001), and 21.9% of the variance in burnout (F (11, 144) = 3.786, p< .001). The Suffering God view of suffering (β = 0.349, p = .025) and positive thinking (β = 0.309, p < .001) had significant main effects on compassion satisfaction. Positive thinking (β = -0.280, p < .001) and the Suffering God (β = -0.392, p = .014) and Random (β = -0.206, p = .014) views of suffering had significant main effects on burnout. The Unorthodox view of suffering had a significant main effect on secondary traumatic stress (β = 0.232, p = .027). Positive thinking did not moderate any of the relationships between the views of suffering and compassion satisfaction, burnout, or secondary traumatic stress. Knowledge of these relationships can aid in the assessment of nursing students at risk for poor outcomes and can guide intervention development to promote their professional quality of life.
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CHAPTER I: INTRODUCTION

Nurses are frequently exposed to suffering of patients and families. Providing compassionate care for these patients and families can be gratifying, but poor psychological outcomes due to this exposure to suffering are prevalent in both nurses and nursing students (Boyle, 2015; Mason, H. & Nel, 2012). As emerging adults, undergraduate nursing students’ coping skills are underdeveloped, leaving them more at-risk for poor psychological outcomes (Arnett, 2015). To promote better coping and address a predicted nursing shortage (Buerhaus, 2021; Juraschek et al., 2012), further research investigating factors related to nursing students’ adaptation to the professional nursing role is warranted.

Professional quality of life includes compassion satisfaction and compassion fatigue – the positive and negative feelings one derives from caring for others (Figley, 2002). Enhancing resilience for nursing students can reduce their vulnerability to negative outcomes by promoting adaptation to the professional role of caring for suffering patients and families and improving professional quality of life. The ways an individual views the meaning of the experience of suffering may be pertinent to this adaptation, but little attention has been given to this phenomenon for nursing students. Additionally, researchers have found that positive thinking may be a factor that promotes resilience for nursing students (Kadappuran & Guzman, 2021; Liang et al., 2019). The aim of this study is to understand the relationships of nursing students’ views of suffering, positive thinking, and their compassion fatigue and compassion satisfaction, in order to foster professional quality of life.
This chapter will cover the background and significance of the problem of caring for suffering patients, the purpose of the study including the specific aims, hypotheses, and research questions, the theoretical framework, explication of key variables, the limitations of the study, and the significance of the study to nursing and future knowledge development.

**Background**

Poor professional quality of life impacts nursing retention (Chen et al., 2021). With accelerating retirements and the rapid growth of the advanced practice nursing workforce, among other factors, addressing professional quality of life is necessary to avoid a shortage of registered nurses (Auerbach 2017; Buerhaus 2021). For both nurses and nursing students, negative psychological outcomes such as compassion fatigue are associated with intent to leave the nursing profession (American Nurses Foundation, 2021; Rudman & Gustavsson, 2011; Rudman & Gustavsson, 2012; Rudman et al., 2014; Spence Laschinger et al., 2012; Yu & Lee, 2018). The COVID-19 pandemic has compounded the negative effects of the workplace on the looming nursing shortage. In a COVID-19 Impact Assessment Survey, conducted in January 2021, the American Nurses Foundation found that 4% of respondents planned to leave the profession of nursing in the next six months and 11% were undecided (American Nurses Foundation, 2021). Forty-seven percent of these respondents listed “work negatively affecting health/wellbeing” as one of their top reasons for planning to or thinking about leaving the nursing profession (American Nurses Foundation, 2021, p. 1). Hospital turnover rates have increased since the start of the pandemic. One study of hospitals in the United States reported that the turnover rate for registered nurses held steady at about 15% (M=15.2,
SD = 0.476) per calendar year from 2014 to 2020, then jumped to 22.5% in 2021 (Nursing Solutions, 2022). Turnover rates tend to be the highest for novice nurses (Kovner et al., 2014) and younger nurses (Koehler & Olds, 2022). Kovner et al. (2014) found that 17.5% of novice nurses intended to leave within the first year of practice, and 33.5% by the second year. According to Koehler and Olds (2022), the odds of reporting intention to leave decreased by 1.5% for each year of nursing practice (2022).

Compassion is viewed as an integral part of excellent patient care (Fowler, 2015; Ortega-Galán et al., 2021; Rodgers & Cowles, 1997; Su et al., 2020; Todaro-Franceschi, 2019). Compassion has been defined as "awareness of someone's suffering, being moved by it (emotionally and, according to some definitions, cognitively), and acting or feeling motivated to help" (Strauss et al., 2016, p. 17-18). Although much of the research related to nurses and nursing students caring for suffering patients and families was conducted over 20 years ago, the consequences of working with suffering individuals persist. Many individuals choose nursing as a profession to help others and relieve suffering (Eley et al., 2012; Mason, H. & Nel, 2015) and many nurses and nursing students report deriving positive benefits from assisting the suffering patients and families (Cadge & Catlin, 2006; Gabbert, 2020; Rodgers & Cowles, 1997). Making a difference in the lives of patients and their families provides nursing students a sense of accomplishment (Fink et al., 2008; Jarden, Jarden et al., 2021b). In their seminal work on professional quality of life, Stamm (2002) and Figley (2002) called this positive outcome of the role of caring for others compassion satisfaction.

Despite the reward of helping professions, providing compassionate care to suffering patients and families is associated with negative outcomes for nurses, such as
compassion fatigue (National Academies of Sciences, Engineering, and Medicine, 2019; Nolte et al., 2017). Nurses have reported feeling helpless when unable to alleviate patients’ suffering (Cadge & Catlin, 2006; Goetz et al., 2010; Rowe, 2003; White, Kate et al., 2004). They experience suffering, themselves, when witnessing the suffering of their patients (Cadge & Catlin, 2006; Ferrell & Coyle, 2008; Rowe, 2012; Steeves & Kahn, 1990). Some nurses and nursing students report attempting to distance themselves from the patient and family as a way of coping (Cadge & Catlin, 2006; Charalambous & Kaite, 2013; Cooper & Barnett, 2005; Cross, 2019; Kahn & Steeves, 1994; Thorup et al., 2012). However, this avoidance amplifies nurses’ frustration since this way of coping can lead to a lack of compassion, which is an important element of patient care (Charalambous & Kaite, 2013; Cross, 2019; Su et al., 2020). The negative feelings associated with caring for suffering patients continue to emerge despite attempts to quell them (Cooper & Barnett, 2005). This “the cost of caring” is known in the literature as compassion fatigue (Boyle, 2015, p. 49; Figley, 2002, p. 109).

Many traditional undergraduate nursing students are in the developmental period known as emerging adulthood which includes ages 18-29 (Arnett, 2015). In industrialized societies, this stage of life is characterized by change and uncertainty as young people are exploring their identity, including their future vocations (Arnett, 2015). As they try out various professional roles, they are searching for jobs that use their specific gifts and talents, and that they genuinely enjoy doing (Arnett, 2015). A stronger reliance on maladaptive coping strategies in the earlier years of this life stage leave this group of individuals vulnerable when exposed to suffering (Arnett, 2015; Wingo et al., 2014). Undergraduate nursing students gaining their first clinical experiences anticipate that
transitioning into the professional role will take a toll on their psychological well-being (Saber et al., 2016). Research has shown that novices in helping professions are more at risk for developing compassion fatigue and other negative psychological outcomes than their more seasoned counterparts (Pearlman & Mac Ian, 1995; Woods et al., 2015).

Qualitative studies of nursing students and novice nurses describing clinical encounters reveal that they are shocked to find so much suffering that cannot be alleviated (Cooper & Barnett, 2005; Eifried et al., 2001; Eifried, 2003; Gunby, 1996). They are overwhelmed and express feelings of frustration, powerlessness, vulnerability, and emotional exhaustion in the face of unrelieved suffering (Eifried, 2003; Gunby, 1996; Kazanowski et al., 2007; Pedersen & Sivonen, 2012; Rudolfsson & Berggren, 2012; ten Hoeve. Kunnen, et al., 2018). However, nursing students and novice nurses also find fulfillment as they provide competent and compassionate care for their patients and families (Fink et al., 2008; Jarden et al., 2021b). As undergraduate nursing students begin to explore their professional identity as nurses, their compassion satisfaction and compassion fatigue may be key indicators of whether they feel the nursing role is right for them. Investigating factors related to their coping mechanisms is an important first step for this population to promote adaptation to their role in caring for suffering patients and families.

Exposure to suffering in clinical encounters raises existential questions for undergraduate nursing students (Eifried, 2003; Rowe, 2003; Thorup et al., 2012). Many nurses and nursing students report that they turn to religious beliefs as a way of coping with exposure to suffering (Braband et al., 2015; Cadge & Catlin, 2006; Eifried, 2003; Nolte et al., 2017; Rodgers & Cowles, 1997; Rowe, 2003; Rowe, 2012; Van Rooyen et
Views of suffering, or theodicies, attempt to reconcile the existence of suffering with a concurrent belief in God’s goodness, or attempt to find non-theological ways to make sense of suffering (Hale-Smith et al., 2012). Benevolent views of suffering include the notion that a good deity is present amidst the suffering and may promote coping with suffering. Suffering as a punishment, or suffering as a random, meaningless phenomenon are nonbenevolent views of suffering that may hinder coping. Despite high levels of religion in the United States (Gallup, 2022), the use of religion as a coping mechanism (Nolte et al., 2017), and the connection between religious beliefs and views of human suffering (Wilt et al., 2017), there are no studies to date investigating views of suffering within the nursing discipline. Exploring nursing students’ views of suffering and how they relate to psychological outcomes can provide insight into factors that promote resilience when they are inevitably exposed to suffering in their clinical rotations and future nursing practice.

The literature also points to positive psychological concepts that may impact the ways nurses and nursing students cope. In qualitative studies, nurses and nursing students reported using positive thinking, reframing, and meaning-making when exposed to suffering (Rattner, 2020; Rowe, 2003; Rowe, 2012; Steeves & Kahn, 1990; Wolf et al., 2015). Learning positive thinking skills allowed nursing students to create meaning from difficult parts of their clinical experiences (Kadappuran & Guzman, 2021; Liang et al., 2019). Quantitative research shows that higher scores on scales measuring resilience, hope, and optimism are associated with positive psychological outcomes such as compassion satisfaction and negatively associated with negative psychological outcomes such as compassion fatigue and burnout in nursing students and novice nurses (Cao,
Wang et al., 2021; Dwyer et al., 2019; Laschinger & Grau, 2012; Spence Laschinger et al., 2012; Yu & Lee, 2018).

While views of suffering may be more static and unchangeable due to their relationship to a person’s religious and cultural framework (Hale-Smith et al., 2012; Wilt et al., 2017), positive thinking skills may be more amenable to change. Interventions have successfully increased positive thinking skills in caregivers of individuals with autism (Bekhet, 2017), and modified various factors related to nursing students’ psychological traits such as optimism and positive thinking (Brook et al., 2021; Cheli et al., 2020; Galbraith & Brown, 2011; Hughes et al., 2021; Irwin et al., 2021; Mason, H. & Nel, 2015).

**Significance**

The limited quantitative studies that investigated compassion satisfaction and compassion fatigue in nursing students reveal that nursing students have high levels of compassion satisfaction, but also moderate to high levels of compassion fatigue (Mason, H. & Nel, 2012). Nursing students have reported either feeling capable and proud of their ability to provide compassionate care for their suffering patients or feeling overwhelmed and unable to cope (Pedersen & Sivonen, 2012). Qualitative studies of nurses and nursing students have shown that religious beliefs are frequently a means of coping with their exposure to suffering (Braband et al., 2015; Cadge & Catlin, 2006; Eifried, 2003; Nolte et al., 2017; Rodgers & Cowles, 1997; Rowe, 2003; Rowe, 2012; Van Rooyen et al., 2005). However, there is no empirical data regarding nursing students’ views of suffering. Positive psychological concepts are also salient factors in coping with exposure to suffering. To date, no research has been done to investigate the relationships between
views of suffering, positive thinking, compassion fatigue and compassion satisfaction as proposed in this study.

**Purpose of the Study**

Using the theoretical framework of resilience theory, the results of this study will fill an important gap in the literature by investigating the relationships among nursing students’ views of suffering, positive thinking, and their compassion fatigue and compassion satisfaction. Specifically, using a cross sectional correlational design, this study will investigate the potential moderating effect of positive thinking skills on the relationships between undergraduate nursing students’ views of suffering and their compassion fatigue and compassion satisfaction, for a non-probability convenience sample of nursing students from two midwestern universities.

**Specific Aims and Hypotheses**

The specific study aims and hypotheses are:

Aim 1: To examine the relationships between views of suffering and compassion fatigue and compassion satisfaction in undergraduate nursing students.

Hypothesis 1a: Benevolent views of suffering will be positively related to compassion satisfaction and negatively related to compassion fatigue.

Hypothesis 1b: Nonbenevolent views of suffering will be negatively related to compassion satisfaction and positively related to compassion fatigue.

Aim 2: To examine the relationship between positive thinking skills and compassion fatigue and compassion satisfaction in undergraduate nursing students.

Hypothesis 2a: Positive thinking skills will be positively related to compassion satisfaction.
Hypothesis 2b: Positive thinking skills will be negatively related to compassion fatigue.

Aim 3: To determine if positive thinking skills moderate the relationships between different views of suffering and compassion fatigue and compassion satisfaction in undergraduate nursing students.

Hypothesis 3: Positive thinking skills will moderate the relationship between views of suffering and compassion fatigue and compassion satisfaction.

**Research Questions**

This study will address the following research questions:

Research Question 1: What are the relationships between nursing students’ views of suffering and their professional quality of life (compassion fatigue and compassion satisfaction)?

Research Question 2: What is the relationship between nursing students’ positive thinking skills and their professional quality of life (compassion fatigue and compassion satisfaction)?

Research Question 3: Do nursing students’ positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction)?

**Theoretical Framework**

Resilience theory provides a theoretical framework to predict the relationships among undergraduate nursing students’ views of suffering, positive thinking, and their compassion fatigue and compassion satisfaction. In seminal literature describing this theoretical framework, resilience is conceptualized as a dynamic process of adapting positively despite exposure to adversity (Luthar et al., 2000; Masten et al., 1990). Various
protective factors and risk factors can impact the adaptation process (Luthar et al., 2000; Masten et al., 1990). Protective factors are correlated with more positive adaptation, and, therefore, seem to encourage resilience, whereas risk factors correlate with poor adaptation and seem to inhibit resilience (Luthar et al., 2000; Masten et al., 1990).

Within the framework of resilience theory, exposure to the suffering of others is conceptualized as an adversity. Literature reveals how difficult nursing students find their experiences of helping suffering patients and families (Eifried, 2003; ten Hoeve, Kunnen, et al., 2018). As nursing students have reported using positive thinking to create meaning from exposure to suffering (Kadappuran & Guzman, 2021; Liang et al., 2019), positive thinking is hypothesized to be a protective factor and promote resilience. Views of suffering are other ways nursing students may create meaning from the exposure to suffering patients and families. Benevolent views, in which benefit can be found from the experience of suffering, are hypothesized to be protective factors in adapting to that exposure while nonbenevolent views of suffering are hypothesized to be risk factors (Hale-Smith et al., 2012; Jarrett, 2014; Wilt et al., 2017). Compassion satisfaction is the outcome variable that indicates positive adaptation, and compassion fatigue is the outcome variable indicating lack of adaptation (Figley, 2002; Stamm, 2010). Figures 1 and 2 display the theoretically proposed relationships between the concepts. Investigating risk and protective factors involved in the adaptation process of caring for suffering individuals in the context of learning to be a nurse will allow for better assessment of nursing students’ likelihood of resilience and inform methods to enhance protective factors and modify risk factors.
Figure 1

*Conceptual Framework for the Moderating Effect of Positive Thinking on the Relationship Between Views of Suffering and Compassion Satisfaction*

![Diagram](image1)

Figure 2

*Conceptual Framework for the Moderating Effect of Positive Thinking on the Relationship Between Views of Suffering and Compassion Fatigue*

![Diagram](image2)
Key Variables

Views of Suffering

Suffering has been defined as “the distress of whole persons whose intactness is threatened or disintegrating” (Cassell, 2004, p. 198). This suffering can include pain, but pain is not a necessary component - suffering can be physical, psychological, or spiritual (Cassell, 2004; Ferrell & Coyle, 2008; Starck & McGovern, 1992). The meaning an individual ascribes to an illness or situation or symptom often determines how much suffering they experience (Cassell, 2004; Ferrell & Coyle, 2008; Frankl, 2006; Nabe, 1999; Starck & McGovern, 1992).

Nurses are exposed to the suffering of others in their daily work (Ferrell & Coyle, 2008; Starck & McGovern, 1992). The process of coming to know the other’s suffering can lead to nurses experiencing their own unique suffering (Ferrell & Coyle, 2008; Kahn & Steeves, 1994; Rowe, 2012; Steeves & Kahn, 1990). Beliefs about why suffering happens may be one way of creating meaning out of the suffering of others and the nurses’ own unique suffering (Cadge & Catlin, 2006; Ferrell & Coyle, 2008; Nolte et al., 2017; Rowe, 2012; Van Rooyen et al., 2005).

Views of suffering include attempts to reconcile the existence of suffering with a benevolent deity, also known as theodicies (Brown, 1999; Hale-Smith et al., 2012; Wilt et al., 2017). Some examples of benevolent views of suffering include a soul-building belief that God uses suffering to build virtue; or a view that because a good God shares in the suffering humans are experiencing, suffering is not meaningless (Hale-Smith et al., 2012). Other views of suffering include the perception of a deity that is not entirely good, and therefore allows suffering to occur; or may not include a belief in any higher power,
and suffering is random or purposeless (Hale-Smith et al., 2012). To date, no study has investigated views of suffering in nursing students and the potential implications for coping with exposure to suffering. In this study, views of suffering are conceptualized as the independent variables.

**Professional Quality of Life**

Helping professionals are frequently exposed to others’ suffering (Ferrell & Coyle, 2008; Starck & McGovern, 1992). The natural response to suffering is compassion, which includes an effort to know and understand the individual in order to know and understand their suffering (Cassell, 2004; Ferrell & Coyle, 2008; Nabe, 1999; Reich, 1989). Professional quality of life [ProQOL] pertains to the well-being of an individual in their role as a professional helper (Stamm, 2010). It is a complex concept, encompassing the individual’s personal characteristics, the amount of trauma the helper is exposed to in their work, and the work environment (Figley, 2002; Stamm, 2010). The positive aspect has been referred to as compassion satisfaction, and the negative aspect as compassion fatigue (Figley, 2002; Stamm, 2010).

**Compassion Satisfaction**

Compassion satisfaction is defined as the enjoyment an individual derives from performing in a helping role (Stamm, 2010). This can include a perception that one is contributing to the greater good of society, or the immediate satisfaction of serving as a caregiver or helpful colleague (Figley, 2002; Stamm, 2010). Within the framework of resilience, high levels of compassion satisfaction can be seen as a positive adaptation to the adversity of witnessing the suffering of others. Antecedents of compassion satisfaction include feeling called to one’s helping profession and the formation of
empathetic relationships with patients and families (Sacco & Copel, 2018). In the literature, nurses, doctors, chaplains, and other helping professionals have described being invited into the sharing of the suffering of others as a privilege and are honored to have the opportunity to make a difference (Ferrell & Coyle, 2008; Starck & McGovern, 1992). Despite the difficulties of performing work associated with helping others who are suffering, many professionals continue to choose to participate in this work, do the work well, and find meaning through it (Figley, 2002). Compassion satisfaction is a positive psychological outcome and is one of the outcome variables in this study.

**Compassion Fatigue**

Compassion fatigue is one conceptualization of the negative outcomes associated with helping professions (Figley, 2002; Stamm, 2010). Compassion fatigue includes the facets of burnout and secondary traumatic stress. Qualitative studies reveal nurses and nursing students describe elements of compassion fatigue because of their professional experiences, particularly when caring for suffering patients and their families.

**Burnout.** Burnout can be described as feelings of hopelessness and frustration when attempting to perform one’s job effectively (Figley, 2002; Stamm, 2010). The World Health Organization defines burnout as “a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed” and includes dimensions of exhaustion, cynicism related to one’s job, and reduced efficacy (World Health Organization, 2019, para. 4). This state of cumulative stress depletes a professional’s ability to cope with their day-to-day work (Maslach, 1982). This decreased coping ability is evidenced in the literature which reveals that higher burnout levels are associated with a higher intent to leave the nursing profession (Laschinger et al., 2016;
Rudman & Gustavsson, 2011; Rudman & Gustavsson, 2012; Rudman et al., 2014; Spence Laschinger et al., 2012; Yu & Lee, 2018). The burnout aspect of compassion fatigue includes system-based stressors such as high workloads; however emotional exhaustion from repeated inabilities to relieve suffering is a component of burnout of importance to the current study. Burnout is an outcome variable in the current study and is conceptualized as a negative adaptation to exposure to the suffering of others within the resilience theoretical framework.

**Secondary Traumatic Stress.** Secondary traumatic stress is defined as a maladaptive response resulting from exposure to the trauma of others and includes both physical and psychological symptoms (Figley, 2002; Stamm, 2010). Countertransference, or the unconscious absorption of another’s trauma via a compassionate and empathic relationship, is the means of producing secondary traumatic stress (Figley, 2002; Qualls & Kasl-Godley, 2011). Example of maladaptive responses of the helping professional include over-involvement with the trauma victim and a loss of boundaries; withdrawal and avoidance of further exposure to the trauma of others; and disruption of one’s worldview (Figley, 2002). For the purposes of the current study, secondary traumatic stress is conceptualized as a negative adaptation to the exposure of the suffering of others and is an outcome variable.

**Positive Thinking**

Positive thinking is defined as “a cognitive process that creates hopeful images, develops optimistic ideas, finds favorable solutions to problems, makes affirmative decisions, and produces an overall bright outlook on life” (Bekhet & Zauszniewski, 2013, p. 1079). Positive thinking has been associated with positive psychological outcomes for
college students and for caregivers of individuals suffering from dementia (Bekhet & Garnier-Villarreal, 2020; Matel-Anderson et al., 2019). Positive psychological concepts similar to positive thinking, such as hope and optimism, have been correlated with decreased levels of burnout in nursing students and novice nurses (Dwyer et al., 2019; Laschinger & Grau, 2012; Spence Laschinger et al., 2012). Additionally, in qualitative studies, positive reframing has been described by nursing students as a way of coping with their exposure to suffering (Wolf et al., 2015). In the current study, positive thinking is conceptualized as a protective factor.

Limitations of the Study

This study has several limitations. Despite the sample being obtained from colleges of nursing at both a public and a private university, utilizing a non-probability convenience sample of undergraduate nursing students from the midwestern United States limits generalizability (Polit & Beck, 2008). Although the conceptual relationships hypothesized in this study are based on a theoretical framework and thorough literature review, the cross-sectional design limits causal inference. Because the survey is voluntary, a nonresponse bias may be present as those who choose to participate might be different from those who do not (Polit & Beck, 2008). This study utilized self-report measures, which can result in willful or unintended misrepresentation (Polit & Beck, 2008).

Significance to Nursing and Contribution to Knowledge Development

Despite the possible connection between nursing students’ views of suffering and their compassion fatigue and compassion satisfaction, this is the first study to date that will explore this relationship. As a possible nursing shortage is projected, it is imperative
that a better understanding of factors that impact nursing students’ adaptation to others’ suffering to ensure that they can successfully transition into their professional nursing role and avoid the “cost of caring” (Figley, 2002, p. 109). Resilience theory offers a framework for understanding and exploring how nursing students’ views of suffering and positive thinking relate to their levels of compassion fatigue and compassion satisfaction. This study seeks to identify which views of suffering might impact nursing students’ adaptation to their role as a helper of suffering patients. Further, the study seeks to identify if positive thinking can serve as a protective factor in that adaptation.

Literature reveals that higher levels of resilience in nursing students and novice nurses are associated with better psychological outcomes, including lower levels of burnout and secondary traumatic stress (Cao et al., 2021; Dwyer et al., 2019; Laschinger & Grau, 2012; Yu & Lee, 2018). However, less is known about what contributes to resilience in this population. The National Academies of Science, Engineering, and Medicine note that remarkably limited knowledge exists about the connection between student burnout and patient interactions (2019, pg. 249-250). They call on researchers to identify means of mitigating the negative impact of healthcare workplace stressors and improve professional well-being for our healthcare professionals (2019, p. 279). This study will provide direction for future interventions to improve nursing students’ adaptation to their role as a caregiver of suffering patients and families.
CHAPTER II: THEORETICAL AND CONCEPTUAL FRAMEWORK AND REVIEW OF THE LITERATURE

This chapter will cover the philosophical and theoretical underpinnings of the study and relevant literature. Guided by a post-positivist paradigm, the study will utilize resilience theory as a theoretical framework to investigate relationships among nursing students’ views of suffering, positive thinking, and professional quality of life. After a conceptualization of resilience theory, the conceptual-theoretical-empirical structure [CTES] of the study will be discussed. The CTES demonstrates the vertical and horizontal relationships between the concepts of interest and explains how the constructs of resilience theory will be operationalized for the current study. Salient gaps in the literature will be identified following a critical review of the literature related to the concepts of interest. Finally, the assumptions, aims, and hypotheses of the current study will be presented.

Philosophical Underpinnings

Post-positivism is the overarching philosophical paradigm of this study. Within this paradigm, the researcher seeks to uncover reality while recognizing the impossibility of complete objectivity and generalizability (Carpiano & Daley, 2006; Guba, 1990; Guba & Lincoln, 1994). Post-positivism posits that human realities can be objectified and measured, but simultaneously holds in tension the complexities of human realities and potential limitations of empiricism (Carpiano & Daley, 2006; Gortner, 1993). That tension should motivate a humble pursuit of the best possible answer, and not discourage truth-seeking.
Within the post-positivist paradigm, theories are utilized in a multitude of ways in the process of building knowledge. Theories are ways of organizing the knowledge about relationships between phenomena (Fawcett & Downs, 1992). Research can develop theory, test theory, or use a theory as a framework to support the proposed relationships among concepts (Fawcett & Downs, 1992; Polit & Beck, 2008). The current study employs resilience theory as the theoretical underpinning to explain the relationships between nursing students’ views of suffering, positive thinking, and professional quality of life.

**Theoretical/Conceptual Framework**

**Resilience Theory**

Resilience theory emerged as researchers noted that some children facing adversity in childhood had poor outcomes, and some had positive outcomes (Garmezy, 1971). Initially using single cases, and then aggregated cases, researchers discovered that various protective factors and risk factors impacted how these children adapted to adversity (Luthar et al., 2000; Masten, 2014; van Breda & Theron, 2018). Protective factors are correlated with a more positive adaptation, and, therefore, seem to encourage resilience, whereas risk factors correlate with worse adaptation outcomes and seem to inhibit resilience (Fergus & Zimmerman, 2005; Luthar et al., 2000; Masten, 2014; van Breda & Theron, 2018). Protective factors have been called assets or resources in the literature (Fergus & Zimmerman, 2005; Masten, 2014). Assets refer to characteristics within the individual that promote resilience, whereas resources are external factors that enable an individual to adapt to adversity (Fergus & Zimmerman, 2005). Protective factors and risk factors are not static, as in, what may be a protective factor in some
contexts for some individuals may be a risk factor in other contexts. Additionally, varying amounts of a factor may influence whether it is a risk or protective factor. For example, an asset such as self-confidence may promote positive adaptation (Bénabou & Tirole, 2002; White, Krista, 2009), but at high levels, overconfidence may become a risk factor (Bénabou & Tirole, 2002; Prims & Moore, 2017; Weinstein & Lyon, 1999).

**Models of Resilience**

Various models of resilience have been used to describe this dynamic process of adapting to adversity. Masten developed aggregate variable models to explain the interactions of various risk or protective factors in the adaptation process (2014). These models allow for statistical exploration between factors and outcomes in populations to identify potential predictors of positive and negative outcomes. As stable associations are found between factors and outcomes, these predictors are referred to as risk or asset gradients (Masten, 2014).

Within the umbrella of variable-focused models of resilience, different conceptual models of relationships between variables have been described in the literature. The challenge model of resilience posits that a continuum exists on which a risk factor may actually encourages positive outcomes at moderate levels (Figure 3) (Fergus & Zimmerman, 2005). The challenge of the exposure promotes positive development, but if the challenge is too large the individual is not able to overcome the adversity resulting in poor outcomes (Fergus & Zimmerman, 2005). A compensatory model explains direct effects of various factors on the outcome (see Figure 4). For a positive outcome, any effects of risk factors must be compensated for by direct effects of protective factors. Studies utilizing this model can identify risk and asset gradients in the adaptation to
adversity. Protective models of resilience include the direct effects of factors explained in the compensatory model and add a third variable that may influence direct effects (Figure 5).

**Figure 3**

*Challenge Model of Resilience*

![Diagram of the Challenge Model of Resilience showing the relationship between exposure to risk factor and negative outcome.](image)

*Note.* Adapted from (Fergus & Zimmerman, 2005), p. 402.

In protective models, third variables can serve as moderators or mediators in the interaction of risk and protective factors. Figure 6 illustrates how this dynamic interplay might occur. Protective factor A is both moderating the negative effect of risk factor A and having a direct effect on the mediating variable, protective factor B, to promote positive adaptation. Risk factor B has a direct negative effect and protective factor C has a direct positive effect on the adaptive process. As this figure demonstrates, both the compensatory and protective factor models can inform intervention development as they
illustrate assets and resources that should be promoted, risk factors that should be minimized, and relationships between factors that can be modified (Masten, 2014).

**Figure 4**

*Compensatory Model of Resilience*

![Compensatory Model of Resilience](image)

*Note.* Adapted from (Fergus & Zimmerman, 2005, p. 402; Masten, 2014, p. 44).

**Figure 5**

*Protective Model of Resilience.*

![Protective Model of Resilience](image)

*Note.* Adapted from (Fergus & Zimmerman, 2005, p. 402; Masten, 2014, p. 46).
Figure 6

*Multiple Factors Model of Resilience*

*Note.* Adapted from (Fergus & Zimmerman, 2005, p. 402; Masten, 2014, p. 267).

The current study will utilize the compensatory and protective models of resilience theory to explore the relationships between nursing students’ views of suffering, positive thinking, and professional quality of life.

It is important to note that some researchers have viewed resilience as a personal character trait rather than an adaptive process. Nursing studies of hardiness in the 1980s (Lambert & Lambert, 1987; Rich & Rich, 1987), and the work of Jack and Jeanne Block on ego-resiliency (Gjerde et al., 1986) are examples of this view. However, most resilience theorists note that assuming that individuals either do or do not possess a trait of resilience is misguided and does not accurately represent the concept of resilience (Fergus & Zimmerman, 2005; Masten, 2014; Panter-Brick & Leckman, 2013; Southwick et al., 2014). While nursing students will possess different character traits and personalities that can be influential in how they adapt to adversity, it is more appropriate
to view these differences as protective or risk factors in the adaptation process than to see the individuals as “resilient” or “not resilient.”

**Conceptual/Theoretical and Empirical Structure**

The theoretical framework of resilience as a dynamic process of adapting positively despite exposure to adversity (Luthar, Cicchetti, & Becker, 2000) can guide the investigation of the relationships between nursing students’ views of suffering, positive thinking, and professional quality of life. When utilizing theory to propose relationships between study variables, theoretical substruction promotes congruence between the various levels of abstraction. Through the process of substruction, the researcher is forced to critically assess the proposed relationships, both horizontally at each level of abstraction, and vertically to connect the theoretical construct with the chosen measurement tool (Bekhet & Zauszniewski, 2008; Dulock & Holzemer, 1991; Fawcett & Downs, 1992; Frey, 1989; McQuiston & Campbell, 1997; Zauszniewski, 1995). A substruction model allows for the researcher to concretely evaluate and explain the rationale for the chosen operational indicators to answer the research questions that are hypothesized based on the underlying theoretical framework.

Figure 7 shows the theoretical, conceptual, and empirical relationships within my proposed research model. In this substruction diagram, the vertical rows indicate the relationships from the highly abstract theoretical constructs to the operationalized empirical indicators. For example, a theoretically proposed protective factor is positive thinking, which is measured with the Positive Thinking Skills Scale [PTSS] (Bekhet & Zauszniewski, 2013). The horizontal rows indicate relationships at each level of abstraction. For example, the variable row includes first the independent variables of
nursing students’ views of suffering and positive thinking skills, followed by the dependent variable of professional quality of life.

**Figure 7**

*Substruction Model: Theoretical, Conceptual, and Empirical Relationships*

As previously mentioned, Figures 1 and 2 display the theoretically proposed relationships between the concepts. These conceptual models explain the propositional statements referenced by the conceptual level of abstraction in the substruction model, for example, views of suffering and positive thinking are factors that can affect professional quality of life. These concepts are transformed into variables within the substruction model (Figure 7). These variables are contextual representations of the concepts of interest (Fawcett & Downs, 1992; Frey, 1989; Zauszniewski, 1995). Empirical indicators can be chosen to measure the variables of interest, and hypotheses can be made regarding the relationships at this level of abstraction. The vertical relationship between the
variables and empirical indicators is called a transformational statement, in which the logic behind the choice of the measurement tool is made explicit (Dulock & Holzemer, 1991; Zauszniewski, 1995). A transformational statement deduced from this model would be that nursing students’ positive thinking skills can be measured by the Positive Thinking Skills Scale, which is a valid and reliable tool that has previously been used in similar populations to measure positive thinking skills. One hypothesis derived from this model is that nursing students with higher levels of positive thinking skills will have higher levels of compassion satisfaction, lower levels of secondary traumatic stress, and lower levels of burnout. Table 1 displays the theoretical, conceptual, and operational definitions that will be investigated in my study.
<table>
<thead>
<tr>
<th>Theoretical Construct</th>
<th>Theoretical Definition</th>
<th>Conceptual Definition</th>
<th>Operational Definition</th>
<th>Empirical Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective Factors</td>
<td>Something that promotes positive adaptation (i.e. personal traits, environmental circumstances, etc.) (Luthar et al., 2000; Masten et al., 1990).</td>
<td>Positive Thinking</td>
<td>A cognitive process that helps individuals to develop optimistic ideas, make sound decisions, and increase their abilities to cope with challenging situations (Bekhet &amp; Zauszniewski, 2013).</td>
<td>The level of positive thinking as evidenced by the score on the Positive Thinking Skills Scale (PTSS)</td>
<td>8 items rated on a 4-point Likert Scale ranging from 0 to 3 and scores might range from 0 to 24 with higher scores indicating more positive thinking (Bekhet &amp; Zauszniewski, 2013).</td>
</tr>
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</table>

| Views of Suffering | Beliefs or logical frameworks that attempt to rationalize or make meaning out of suffering (Hale-Smith et al., 2012). | The level of adherence to traditional theistic, unorthodox theistic and nontheistic views of suffering as measured by the Views of Suffering Scale (VOSS). | Views of Suffering Scale (VOSS). | 10 subscales, each with 3 items, that assess the predominant explanations for suffering in North America. Nursing students indicate the extent of their belief or disbelief on a 6-point scale from 1 = strongly disagree to 6 = strongly agree (Hale-Smith et al., 2012). |

<p>| Risk Factors | Something that inhibits positive adaptation (i.e. personal traits, environmental circumstances, | Views of Suffering | Beliefs or logical frameworks that attempt to rationalize or make meaning out of suffering | Views of Suffering Scale (VOSS). | 10 subscales, each with 3 items, that assess the predominant explanations for suffering in North America. Nursing students indicate the extent of their belief or disbelief on a 6- |</p>
<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Professional Quality of Life</th>
<th>The quality of life one feels in relation to their work as a caregiver or helper (Stamm, 2010, p. 8). This includes both the positive and negative aspects of the work (Stamm, 2010).</th>
<th>The level of pleasure derived from helping/caregiving work as measured by the compassion satisfaction subscale.</th>
<th>ProQOL Compassion Satisfaction Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>as measured by the Views of Suffering Scale.</td>
<td>10 items rated on a 5-point Likert scale. Nursing students are instructed to select the number that reflects how frequently they experienced these things in the last 30 days. 1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often (Stamm, 2010, p. 26).</td>
<td></td>
</tr>
<tr>
<td>The level of hopelessness and frustration experienced during work as a helper/caregiver as measured by the burnout subscale.</td>
<td>ProQOL Burnout Subscale</td>
<td>10 items rated on a 5-point Likert scale. Nursing students are instructed to select the number that reflects how frequently they experienced these things in the last 30 days. 1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often (Stamm, 2010, p. 26).</td>
<td>10 items rated on a 5-point Likert scale. Nursing students are instructed to select the number that reflects how frequently they experienced these things in the last 30 days. 1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often (Stamm, 2010, p. 26).</td>
<td></td>
</tr>
<tr>
<td>The level of maladaptive stress responses to exposure to others' trauma as measured by the secondary traumatic stress subscale.</td>
<td>ProQOL Secondary Traumatic Stress Subscale</td>
<td>10 items rated on a 5-point Likert scale. Nursing students are instructed to select the number that reflects how frequently they experienced these things in the last 30 days. 1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often (Stamm, 2010, p. 26).</td>
<td>10 items rated on a 5-point Likert scale. Nursing students are instructed to select the number that reflects how frequently they experienced these things in the last 30 days. 1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often (Stamm, 2010, p. 26).</td>
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</table>
Critical Review of Literature Related to Study Concepts and Propositions

This section is a broad and critical review of the literature related to the concepts of interest and the propositions organized by the theoretical framework of resilience. First, the search strategy will be described. Literature associated with each study variable is expounded including nursing students’ views of suffering, positive thinking, compassion fatigue, and compassion satisfaction. A summary of evidence related to resilience in nursing students is presented including gaps in the literature.

Search Strategy

An extensive review of the literature utilizing Cumulative Index of Nursing and Allied Health Literature (CINAHL), PsychINFO, Education Resource Information Center (ERIC), PubMed, and Web of Science was conducted. The key words used are displayed in Tables 2, 3, and 4.

Table 2

Search Terms for Literature Search Pertaining to Compassion Satisfaction and Compassion Fatigue

<table>
<thead>
<tr>
<th>Database</th>
<th>Search term combinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>CINAHL</td>
<td>((MM &quot;New Graduate Nurses&quot;) OR (MM &quot;Students, Nursing, Baccalaureate+&quot;) OR (MM &quot;Students, Nursing&quot;) ) AND ((MH &quot;Compassion Fatigue&quot;) OR &quot;compassion satisfaction&quot; OR (MH &quot;Burnout, Professional+&quot;) OR &quot;secondary traumatic stress&quot;)</td>
</tr>
<tr>
<td>PsychINFO</td>
<td>(MM &quot;Nursing Students&quot; OR (&quot;novice nurs*&quot; OR &quot;early career Nurs*&quot; OR &quot;new graduate nurs*&quot; OR &quot;nursing student&quot; OR &quot;student nurs*&quot;)) AND (DE &quot;Compassion Fatigue&quot; OR &quot;burnout&quot; OR &quot;secondary traumatic stress&quot; OR &quot;compassion fatigue&quot; OR &quot;compassion satisfaction&quot;)</td>
</tr>
<tr>
<td>ERIC</td>
<td>(MM &quot;Nursing Students&quot; OR (&quot;novice nurs*&quot; OR &quot;early career Nurs*&quot; OR &quot;new graduate Nurs*&quot; OR &quot;nursing student&quot; OR &quot;student Nurs*&quot;)) AND (DE &quot;Compassion Fatigue&quot; OR &quot;burnout&quot; OR &quot;secondary traumatic stress&quot; OR &quot;compassion fatigue&quot; OR &quot;compassion satisfaction&quot;)</td>
</tr>
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</table>
### Table 3

**Search Terms for Literature Search Pertaining to Positive Thinking**

<table>
<thead>
<tr>
<th>Database</th>
<th>Search term combinations</th>
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<tbody>
<tr>
<td>CINAHL</td>
<td>(MM &quot;New Graduate Nurses&quot;) OR (MM &quot;Students, Nursing, Baccalaureate+&quot;) OR (MM &quot;Students, Nursing&quot;) AND (MM &quot;Positive Psychology&quot;) OR &quot;positive thinking&quot;)</td>
</tr>
<tr>
<td>PsychINFO</td>
<td>(MM &quot;Nursing Students&quot; OR (&quot;novice nurs*&quot; OR &quot;early career nurs*&quot; OR &quot;new graduate nurs*&quot; OR &quot;nursing student&quot; OR &quot;student nurs*)) AND (MM &quot;Positive Psychology&quot;) OR &quot;positive thinking&quot;)</td>
</tr>
<tr>
<td>ERIC</td>
<td>(MM &quot;Nursing Students&quot; OR (&quot;novice nurs*&quot; OR &quot;early career nurs*&quot; OR &quot;new graduate nurs*&quot; OR &quot;nursing student&quot; OR &quot;student nurs*)) AND (MM &quot;Positive Psychology&quot;) OR &quot;positive thinking&quot;)</td>
</tr>
<tr>
<td>PubMed</td>
<td>(&quot;novice nurs*&quot; OR &quot;early career nurs*&quot; OR &quot;new graduate nurs*&quot; OR &quot;nursing student&quot; OR &quot;student nurs*&quot;) AND (&quot;Positive Psychology&quot;) OR &quot;positive thinking&quot;)</td>
</tr>
<tr>
<td>Web of Science</td>
<td>(&quot;novice nurs*&quot; OR &quot;early career nurs*&quot; OR &quot;new graduate nurs*&quot; OR &quot;nursing student&quot; OR &quot;student nurs*&quot;) AND (&quot;Positive Psychology&quot;) OR &quot;positive thinking&quot;)</td>
</tr>
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### Table 4

**Search Terms for Literature Search Pertaining to Suffering**

<table>
<thead>
<tr>
<th>Database</th>
<th>Search term combinations</th>
</tr>
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<tbody>
<tr>
<td>CINAHL</td>
<td>(MM &quot;New Graduate Nurses&quot;) OR (MM &quot;Students, Nursing, Baccalaureate+&quot;) OR (MM &quot;Students, Nursing&quot;) AND (MM &quot;Suffering&quot;)</td>
</tr>
<tr>
<td>PsychINFO</td>
<td>(MM &quot;Nursing Students&quot; OR (&quot;novice nurs*&quot; OR &quot;early career nurs*&quot; OR &quot;new graduate nurs*&quot; OR &quot;nursing student&quot; OR &quot;student nurs*&quot;)) AND (DE &quot;Suffering&quot; OR &quot;theodicy&quot; OR &quot;suffer&quot;)</td>
</tr>
</tbody>
</table>
ERI The search was limited to the peer-reviewed journal articles in the English
language. Articles were included if they addressed views of suffering, positive thinking, compassion satisfaction, compassion fatigue, or related concepts in undergraduate nursing students or novice nurses. Although the population of focus for the current study is undergraduate nursing students, novice nurses were included in the literature review as they are at a similar level in their attitudes and nursing proficiency to nursing students (Benner, 1982). Articles were excluded if the sample included students of other healthcare disciplines or nurses with more than one year of professional experience. Dissertations were also excluded.

**Literature Search Results**

The extensive search yielded a total of 479 articles after duplicates were removed. After full review, articles were excluded for a variety of reasons. Many articles related to professional quality of life were excluded due to being specifically about academic burnout or because they used experienced nurses in their sample. Other articles investigated stressors, but not concepts related to compassion fatigue or burnout. Many articles related to suffering were not included due to being about nursing students learning about death and dying in particular instead of suffering, or because the topic of the article was moral suffering – a construct associated with being limited in one’s ability
to help patients due to systemic constraints. Some articles related to positive thinking were not included after full review as they mainly referenced psychological well-being instead of an active cognitive process. After full review, 62 articles were retained that offered insight into the concepts of interest in nursing students and/or novice nurses.

The literature included research from Australia, Canada, China, Cyprus, Denmark, Egypt, Finland, India, Italy, the Netherlands, Scotland, South Africa, South Korea, Spain, Sweden, Taiwan, Turkey, the United States, the United Kingdom. Undergraduate nursing students from all years of their programs and novice nurses with up to one year of experience are represented in the samples. Both qualitative and quantitative research designs contributed to the literature review. While most of the research was cross-sectional, some longitudinal studies followed students throughout their undergraduate programs, others followed novice nurses through the first year of work, and one captured the transition from school to the first professional nursing role (Rudman & Gustavsson, 2012).

**Compassion Satisfaction and Compassion Fatigue**

Within the framework of resilience theory, professional quality of life is the outcome of interest that indicates adaptation to helping others as a nursing student. The positive aspect of professional quality of life is compassion satisfaction, which is the pleasure one derives from helping others. The reviewed literature indicates that nursing students exhibit moderate to high levels of compassion satisfaction (Cao et al., 2021; Li, A. et al., 2014; Mason, H. & Nel, 2012; Mason, H. & Nel, 2015; Mason, Henry, 2018; McVicar et al., 2021; Meyer et al., 2015; Michalec et al., 2013). Qualitative studies reveal that nursing students and novice nurses report a sense of accomplishment and
satisfaction after working with patients and families (Jarden et al., 2021b; Michalec et al., 2013). One group of newly hired nurses in the United States described the fulfillment they received from helping patients and families as one of the key contributors to their job satisfaction (Fink et al., 2008).

Compassion fatigue, which is the conceptualization in the current study of the negative adaptation to the role of helping others as a nursing student, consists of secondary traumatic stress and burnout (Figley, 2002; Stamm, 2010). While Mason and colleagues found moderate to high levels of secondary traumatic stress in undergraduate nursing students in South Africa (Mason, H. & Nel, 2012; Mason, H. & Nel, 2015; Mason, Henry, 2018), studies conducted in China and the United States found low levels of secondary traumatic stress in nursing students (Cao et al., 2021; Li, A. et al., 2014; Meyer et al., 2015; Michalec et al., 2013).

In the literature, many different psychometric tools were utilized to measure burnout in nursing students and novice nurses including the Professional Quality of Life scale (Cao et al., 2021; Li, A. et al., 2014; Mason, H. & Nel, 2012; Mason, H. & Nel, 2015; Mason, Henry, 2018; Meyer et al., 2015; Michalec et al., 2013), Maslach Burnout Inventory (Deary et al., 2003; Kinman & Leggetter, 2016; Liu et al., 2020; Michalec et al., 2013; Valero-Chillerón et al., 2019; Watson et al., 2008), Copenhagen Burnout Inventory (Cheli et al., 2020), Oldenburg Burnout Inventory (Rudman & Gustavsson, 2012), and Burnout Measure short version (Pelit-Aksu et al., 2021; Yu & Lee, 2018). Low to moderate burnout levels were most commonly reported, (Cao et al., 2021; Deary et al., 2003; Kinman & Leggetter, 2016; Li, A. et al., 2014; Liu et al., 2020; Mason, Henry, 2018; Meyer et al., 2015; Michalec et al., 2013), however, the results of four
studies reported moderate to high levels of burnout in nursing students (Mason, H. & Nel, 2012; Valero-Chillerón et al., 2019; Watson et al., 2008). Most longitudinal studies revealed that burnout through the years of nursing school remained stable (Deary et al., 2003; Liu et al., 2020; Watson et al., 2008), although in their survey of 1702 Swedish nursing students Rudman and Gustavsson found a significant increase in burnout over three years of nursing school (2012). In qualitative studies nursing students reveal helpless feelings related to poor patient outcomes (Fink et al., 2008; Michalec et al., 2013) and noted that their frequent interactions with sad and suffering patients and families may lead to burnout in their future careers (Michalec et al., 2013).

Overall, the literature suggests that compassion satisfaction is common in the population of nursing students, and that it is an important aspect of their professional identity. The prevalence of compassion fatigue in nursing students is less consistent across the literature, suggesting the need for further investigation. Additionally, nursing students indicated that compassion fatigue is an outcome they need to be prepared to address even if high levels are not exhibited during their education.

**Consequences of Compassion Fatigue**

A few of the included studies investigated consequences of compassion fatigue in novice nurses and undergraduate nursing students. In a systematic review of 34 studies investigating barriers and enablers of work-well-being for new graduate nurses, Jarden and colleagues found that burnout was associated with other measures indicating overall work ill-being (2021a). In a longitudinal study Liu et al. found that burnout in 171 new graduate nurses in China was associated with higher levels of surface-acting, or displaying inauthentic emotional responses in their nursing care (2020). This became a
negative cycle as the burnout scores of the nurses who engaged in surface-acting worsened as time went on (Liu et al., 2020). In another longitudinal study, higher burnout scores as undergraduate students predicted poorer physical health, lower use of evidence-based practice, lower mastery of nursing tasks, and a higher turnover intention at one year post-graduation for 1702 Swedish novice nurses (Rudman & Gustavsson, 2012). Yu & Lee also found that burnout had a direct effect on turnover intention in a cross-sectional study of 371 new graduate nurses in Japan (2018). However, in a longitudinal study that followed 90 nursing students in Scotland, Deary and colleagues found that burnout scores did not predict attrition from the program (2003). Overall, the literature suggests that elevated levels of compassion fatigue, specifically the burnout component, can lead to negative outcomes. The consequences of secondary traumatic stress were not discussed in the literature.

**Interventions Related to Compassion Fatigue or Compassion Satisfaction**

Five intervention studies related to promoting professional quality of life met the inclusion criteria. Brook and colleagues implemented a cognitive-behavioral educational intervention aimed at reducing burnout for undergraduate nursing students in the United Kingdom (2021). As a feasibility study, they did not utilize any pre-/post-test design, but instead gathered written questionnaires and interviews with participants. The students reported that the acceptance and commitment therapy skills they learned helped them to be able to reevaluate difficulties they had faced, and they found the intervention feasible and beneficial (Brook et al., 2021). In a non-randomized controlled trial in Italy, 36 nursing students in the intervention group participated in a mindfulness-based educational program. Independent samples t-tests revealed a significant increase in mindfulness
scores (t = 3.087, p = 0.002) and decrease in burnout scores (t = 2.369, p = 0.020) for the intervention group, while there were no differences for the control group (t = 0.115, p = 0.897 and t = 0.152, p = 0.879 respectively) (Cheli et al., 2020). In Turkey, 67 nursing students participated in a randomized controlled trial to reduce burnout in which they performed progressive muscle relaxation four times a week for three weeks. While the scores on the Burnout Measure short version were significantly lower for both groups at posttest than at pre-test, the post-test scores of the experimental group (M= 2.51, SD = 0.93) were significantly lower than the control group (N = 78, M = 3.02, SD = 1.17, p = 0.010) (Pelit-Aksu et al., 2021). When Ayaz-Alkaya and colleagues investigated the effect of an internship program that was added to the curriculum for fourth year nursing students with a quasi-experimental pre-/post-test design they found that 34.7% and 43.6% of the nursing students experienced burnout before and after the nursing internship, respectively (p < 0.05) (2018). Finally, Mason and Nel developed a psycho-educational stress management program in which they taught 42 undergraduate nursing students in South Africa skills related to reflecting on creating meaning from stressors and promoting self-care (2015). The pre- and post-test scores for compassion satisfaction increased (t(41) = 5.01, p < 0.001), while the scores for compassion fatigue decreased (secondary traumatic stress subscale: t(41) = 4.49, p < 0.001, and burnout subscale: t(41) = 3.47, p < 0.001). In qualitative feedback, students reported that the group interactions from the weekly sessions and developing the sense of meaning in life were the most beneficial aspects of the program (Mason, H. & Nel, 2015). These studies indicate that interventions to promote professional quality of life can be effective, feasible, and beneficial.

Protective and Risk Factors for Compassion Satisfaction and Compassion Fatigue
Many elements of the environment and/or psychological constructs were mentioned in the literature as contributing to or inhibiting nursing students’ compassion satisfaction and compassion fatigue. Personality traits, stress levels, clinical experiences, and scores on various measures of coping, resilience, and psychological capital were all factors related to professional quality of life in nursing students.

In cross-sectional data including 101 nursing students in Turkey, Ayaz-Alkaya and colleagues found that younger nursing students had higher scores on burnout scales (2018). Neuroticism as a personality trait predicted higher levels of burnout in a longitudinal study of 147 nursing students in Hong Kong (Watson et al., 2008). Post-traumatic stress disorder symptoms predicted burnout and compassion fatigue for 251 nurses with three months of experience in the United States (Li, A. et al., 2014).

Higher scores on stress scales were associated with higher levels of compassion fatigue and lower levels of compassion satisfaction in two studies of novice nurses (Li, A. et al., 2014; Meyer et al., 2015). Specifically, stressors such as exposure to death and dying, contact with suffering, helplessness and uncertainty were associated with increased compassion fatigue (Fink et al., 2008; Valero-Chillerón et al., 2019). In their pre-/post-test before and after a semester of clinical hours, Ayaz-Alkaya and colleagues simply found that as the number of clinical hours students had participated in increased, the burnout scores of the 101 nursing students also increased (2018). Qualitative studies reinforced these associations, with students describing stressors of clinical rotations and how they sensed burnout will come in the future from difficult patient encounters (Ching et al., 2020; Michalec et al., 2013). New nurses described how dealing with existential events and poor patient outcomes contributed to negative feelings about the professional
role (Fink et al., 2008; Jarden et al., 2021b; ten Hoeve et al., 2020). However, the nursing students and novice nurses simultaneously expressed the fulfillment, satisfaction, and sense of accomplishment they felt when caring for patients and their families (Ching et al., 2020; Fink et al., 2008; Jarden et al., 2021b; Michalec et al., 2013).

Many studies indicated that maladaptive, passive, or avoidance coping strategies were associated with higher levels of compassion fatigue in nursing students or novice nurses (Cao et al., 2021; Gibbons, 2010; Heritage et al., 2019; Rees et al., 2016). Emotional coping had opposite effects on burnout in nursing students depending on the definition. Nursing students in England who scored higher on the Emotional Social Support subscale from Carver’s Brief-COPE scale had lower burnout scores (Kinman & Leggetter, 2016), while higher scores on the emotion oriented subscale of the Coping Inventory for Stressful Situations (which measures becoming emotionally upset in the face of stress) predicted higher burnout scores for nursing students in Hong Kong (Watson et al., 2008).

The literature revealed various positive psychological constructs that were found to be protective factors in the development of compassion fatigue and/or promotive of compassion satisfaction. Mason found that nursing students with higher scores on the Life Purpose Questionnaire, suggestive of perceiving greater meaning in life, had higher compassion satisfaction scores and lower compassion fatigue scores (2013). Similarly, optimistic existential attitudes (measured with the Life Attitudes Profile – revised) positively predicted compassion satisfaction while pessimistic existential attitudes positively predicted compassion fatigue (Mason, Henry, 2018). Mindfulness had a direct negative effect on the burnout subscale of the ProQOL in a study of 708 nursing students.
in Australia (Heritage et al., 2019). For new nurses in the United States and Canada, scores on the Psychological Capital Questionnaire which includes the concepts of efficacy, hope, resilience, and optimism, negatively predicted burnout scores (Dwyer et al., 2019; Spence Laschinger et al., 2012).

While resilience was a subscale of the previously mentioned Psychological Capital Questionnaire, many studies investigated relationships specifically between resilience and the outcomes of compassion satisfaction and compassion fatigue in nursing students and novice nurses. In 2016, McGowan & Murray performed a systematic review of resilience in nursing students. From the eight included articles, they concluded that while there is some evidence that resilience may protect against burnout, more research is needed on this topic (McGowan & Murray, 2016). Using the Connor-Davidson Resilience Scale, Rees and colleagues found that resilience had a direct negative effect on burnout in a sample of 422 nursing students from across Australia and Canada (2016). Heritage and colleagues duplicated this finding in a sample of 708 nursing students from Australia (2019). Similarly, resilience was positively correlated with compassion satisfaction and negatively correlated with compassion fatigue in a sample of 393 new graduate nurses and a sample of 972 third and fourth year undergraduate nursing students in China (Cao et al., 2021; Cao, Li et al., 2021).

Age, personality, and encounters with patients and families were all found to be factors related to professional quality of life. While these factors are less malleable for nursing students, coping strategies and positive psychological constructs may be fruitful avenues suggested in the literature for promoting compassion satisfaction and reducing compassion fatigue. Specifically, learning more about how nursing students use positive
thinking skills and process their stressful encounters with suffering patients are potential protective factors under investigation in the current study.

**Views of Suffering**

Reviewed literature related to views of suffering consisted of qualitative inquiries into nursing students’ experiences caring for dying or suffering patients; educational initiatives related to improving nursing students’ interactions with suffering patients; or quantitative investigations into the most stressful aspects of patient care. Edwards and colleagues distributed the Stress in Nursing Education Survey to nursing students in the United Kingdom over 5 timepoints in their three-year program. Eight months into the program, 112 students took the survey at time one, and at the end of the three-year program, 93 students submitted results at time five. Over the five data collection timepoints, “Watching a patient suffer” ranked fifth, fifth, sixth, third, and second respectively out of 32 stressors (Edwards et al., 2010, p. 82). Similarly, using the Perceived Stress Scale, Jimenez and colleagues found that “Seeing the pain and suffering in patients and relatives” was the highest-ranking stressor for 357 first through third year nursing students in Spain out of 30 potential clinical or academic stressors (2010, p. 448). In a longitudinal study of undergraduate nursing students in Spain using the KEZKAK questionnaire, “Contact with suffering” was the third highest stressor after “Lack of competence” and “Uncertainty and impotence” throughout the four years of nursing education (Gorostidi et al., 2007, p. 782).

The qualitative investigations into nursing students’ encounters with suffering reinforce the quantitative results of the stress-inducing nature of these experiences. Three of the qualitative inquiries utilized diary entries of first-year nursing students or first-year
nurses (Charalambous & Kaite, 2013; Cooper & Barnett, 2005; ten Hoeve, Kunnen, et al., 2018), while the other articles reported on interviews with samples of between six and 24 undergraduate nursing students. When asked specifically about what it was like to care for suffering patients, students expressed feeling overwhelmed, helpless, and frustrated (Cooper & Barnett, 2005; Eifried et al., 2001; Eifried, 2003; Gunby, 1996; Pedersen & Sivonen, 2012; Rudolfsson & Berggren, 2012). Students described being emotionally impacted by their exposure to the suffering of patients and families (Edo-Gual et al., 2014; Gunby, 1996; Pedersen & Sivonen, 2012; Van Rooyen et al., 2005). Attempts to distance themselves from these emotions led to frustration as the students felt they were not able to provide compassionate care (Charalambous & Kaite, 2013; Cooper & Barnett, 2005; Su et al., 2020). Nursing students and novice nurses were led to question the reason for suffering as they were exposed to more illness and death (Eifried et al., 2001; Eifried, 2003; Gunby, 1996; ten Hoeve, Kunnen, et al., 2018). Many students reported turning to spirituality to cope and create positive meaning from their work (Cilliers & Terblanche, 2014; Eifried, 2003; Van Rooyen et al., 2005), but some struggled to do this successfully (Cilliers & Terblanche, 2014) and felt unprepared by their coursework for these “theological” aspects of the work of a nurse (Gunby, 1996, p. 70). In their inquiry into 24 student nurses’ experiences of caring for patients in Denmark and Finland, Pedersen and Sivonen found two separate narratives - students exposed to suffering in the clinical setting either were overwhelmed by it or grew from it (2012). Ten Hoeve, Brouwer and colleagues also asked the participants to rate the emotional state produced by the event they described in the diary entry and found that exposure to suffering and death was correlated with more negative emotions and fewer positive emotions (2018).
Three educational interventions related to suffering were described in the literature. Allcock and Standen were interested in how the Common Foundation Programme for nursing students in the United Kingdom impacted the students’ assessment of physical and psychological suffering (1999). The psychological pain scores on the Standard Measure of Inferences of Suffering [SMIS] for the 177 participants increased from pre- to post-test, while the physical pain inferences stayed the same (Allcock & Standen, 1999). Previous work or personal experience with suffering did not impact the SMIS scores (Allcock & Standen, 1999). Kazanowski and colleagues created a 14-week course entitled “Understanding Suffering” for 32 nursing students in New Hampshire to prepare them to adequately respond to the suffering of their future patients and help them cope with exposure to suffering (2007, p. 195). While the article was a description of the course and not a rigorous study, course feedback contained appreciation for the therapeutic environment the course provided to process the suffering they experienced as nursing students (Kazanowski et al., 2007). Braband and colleagues offered descriptive qualitative feedback from an educational project they created in which 247 undergraduate nursing students interviewed an acquaintance who had experienced life-altering suffering (2015). The students’ written responses revealed that they learned to be self-aware of their responses to sufferers; they expanded their understanding of others’ experiences of suffering; they grasped more of the spiritual aspects of suffering and ways of creating meaning; and they learned how to offer the sufferer a compassionate presence (Braband et al., 2015).

The literature reveals that nursing students and novice nurses struggle in their professional efforts to care for suffering individuals. They feel underprepared for this
aspect of the nursing role and appreciated the educational efforts to give them tools to process experiences of suffering. While many of them reported spirituality or theological meaning-making as a way of coping with their exposure to suffering, there is currently no quantitative literature investigating this phenomenon.

**Positive Thinking**

The literature revealed various concepts related to positive thinking as possible protective factors for nursing students. Positive reframing, optimism, and developing skills for changing maladaptive cognitions were effective strategies mentioned in literature reviews investigating stress reduction or resilience promotion in nursing students (Galbraith & Brown, 2011; Hughes et al., 2021; Thomas & Revell, 2016). In a cross-sectional study, Bekhet and colleagues found that positive cognitions in 170 first-year nursing students in Egypt moderated and partially mediated the relationship between alienation and resourcefulness (2011). In 156 novice nurses with 3 mths to 1 year of experience, greater levels of optimism were associated with a lower intention to leave (Kim & Yoo, 2018). And in 1060 nursing students in China, optimism positively predicted career adaptability ($\beta = 0.32, p < .001$) and career motivation ($\beta = 0.10, p < .001$) after controlling for gender, age, and academic year (Fang et al., 2018).

Qualitative literature reinforces positive thinking as a protective factor for nursing students. Of 210 nursing students at two Midwestern universities who participated in a study on stress and coping strategies, 45% described engaging in positive thinking or reframing (Wolf et al., 2015). Similarly, when Yang and colleagues asked 24 male nursing students in Taiwan how they managed barriers related to being a male nurse, “thinking positively” was a main theme in the participants’ responses (2017, p. 337).
The literature contained three interventions that promoted positive thinking in nursing students or novice nurses to promote coping and increase resilience (Irwin et al., 2021; Kadappuran & Guzman, 2021; Liang et al., 2019). As a quality improvement project, Irwin and colleagues used a convenience sample of 42 novice nurses at one hospital in the northeastern United States. They participated in a 10-week resilience program in which one of the modules was “positivity: having a positive viewpoint and finding something that went well in any situation” (2021, p. 36). The Connor-Davidson Resilience Scale scores increased from 73.38 (SD = 10.57) pre-intervention to 77.64 (SD=10.62, t(41) = −3.219, p = .003) post-intervention. Using participatory action research, Liang and colleagues developed a resilience-enhancement program for 28 final-year Taiwanese nursing students. Positive thinking was one of the four workshop topics addressed over six weeks, and qualitative feedback indicated that students found the positive thinking training helped them adapt to challenges (Liang et al., 2019). In India, Kadappuran and Guzman randomly selected 10 religious first year female nursing students to participate in a six-week pilot project called the Positive Emotions Enhancement Program (2021). In qualitative feedback, the participants reported the program was beneficial and they found the positive re-framing skills helpful in their relationships with colleagues (Kadappuran & Guzman, 2021).

The literature supports the proposition that positive thinking may be a protective factor for resilience in nursing students. Additionally, the intervention studies, although very small-scale and not rigorous, support the possibility that positive thinking skills may be modifiable in nursing students.

**Gaps in the Literature**
The literature contained evidence that nursing students experience varying levels of compassion fatigue, and they anticipate it worsening as their career proceeds. The negative sequelae of compassion fatigue are a detriment to the nursing discipline. While its causes are multi-faceted, the exposure to suffering patients and families is often associated with compassion fatigue. Students report that attempting to create meaning out of suffering through spiritual or theological avenues is one way of coping, but to date, no quantitative investigations of this phenomenon have been done. A gap in the literature exists between the relationship between views of suffering and professional quality of life in nursing students. Additionally, while positive thinking is a protective factor of professional quality of life in the literature, no research has been done investigating the potential moderating effect of positive thinking on the relationship between nursing students’ views of suffering and professional quality of life. Understanding these relationships can lead to better assessment of students who may be at higher risk for developing compassion fatigue, and aid in the development of interventions to promote compassion satisfaction and reduce compassion fatigue.

Aims and Hypotheses

The specific study aims are:

Aim 1: To examine the relationships between views of suffering and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 1a: Benevolent views of suffering will be positively related to compassion satisfaction and negatively related to compassion fatigue.
Hypothesis 1b: Nonbenevolent views of suffering will be negatively related to compassion satisfaction and positively related to compassion fatigue.

Aim 2: To examine the relationship between positive thinking skills and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 2a: Positive thinking skills will be positively related to compassion satisfaction.

Hypothesis 2b: Positive thinking skills will be negatively related to compassion fatigue.

Aim 3: To determine if positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 3: Positive thinking skills will moderate the relationships between views of suffering and professional quality of life.

Summary

This chapter described how resilience theory guides the proposed relationships between the concepts of interest. An extensive review of the literature revealed that compassion fatigue is an outcome of interest in the population of nursing students. However, despite the association between nursing students’ exposure to suffering and the development of compassion fatigue, little research exists regarding promoting nursing students’ adaptation to caring for suffering patients and families. To date, nursing students’ views of suffering have not been studied in relation to their levels of compassion satisfaction and compassion fatigue. Furthermore, while the literature indicates that positive thinking may be a protective factor for resilience in nursing
students, no research has been done investigating the relationship between positive thinking, views of suffering, compassion satisfaction, and compassion fatigue. Knowledge of these relationships can aid in the assessment of nursing students at risk for poor outcomes and can guide intervention development to promote professional quality of life.
CHAPTER III: RESEARCH DESIGN AND METHODS

The primary objective of this study is to investigate the relationships between nursing students’ views of suffering, positive thinking, compassion fatigue and compassion satisfaction. The concepts of interest were measured with valid and reliable instruments. Nursing students’ views of suffering were measured with the Views of Suffering Scale (Hale-Smith et al., 2012). The Positive Thinking Skills Scale was utilized to measure positive thinking (Bekhet & Zauszniewski, 2013). Compassion fatigue and compassion satisfaction were measured with the Professional Quality of Life scale, Version 5 (Stamm, 2010).

This chapter is organized into nine sections: (a) aims and hypotheses, (b) research design, (c) sampling issues, (d) instrumentation, (e) human subjects protection, (f) data collection methods, (g) data analysis plan, (h) limitations, and (i) conclusion.

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Aim 3: To determine if positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 3: Positive thinking skills will moderate the relationships between views of suffering and professional quality of life.

Research Design

A cross-sectional, correlational design was utilized. As a predictive correlational study, the proposed study will seek to understand and analyze the relationships between nursing students’ views of suffering and positive thinking, and their compassion fatigue and compassion satisfaction. Specifically, this study will determine if the variance of compassion fatigue and compassion satisfaction can be predicted by the variance in views of suffering and/or positive thinking. Additionally, the study will investigate the possible moderating effect of positive thinking on the relationships between views of suffering and compassion fatigue and compassion satisfaction. Within the post-positivist paradigm, this quantitative exploration will add to and augment our current understanding of these phenomena.
There are disadvantages when using the cross-sectional design. First, due to the collection of data at one timepoint without experimental manipulation, causal inferences cannot be made. Any temporal relationships are only theoretically proposed and cannot be concluded. Additionally, change over time cannot be assessed, and the moment in time that is captured may not be representative of reality.

Despite these weaknesses, a correlational cross-sectional research design also has advantages. Cross-sectional studies are useful for describing relationships among concepts of interest at a certain juncture. Because data collection occurs entirely at one timepoint, this design reduces the potential for missing data. They also tend to be an economical way of generating new knowledge about theoretically proposed relationships among the phenomena of interest (Polit & Beck, 2008). Another advantage of the cross-sectional research design is that it allows for the natural observation of the phenomena, which preserves ecological validity (Field, 2013).

**Sampling Issues**

**Sample Specification**

A convenience sample of undergraduate nursing students was obtained. Convenience samples are commonly utilized in social science research, as they are a cost-effective way to recruit participants that meet the specified inclusion criteria. The students eligible for the study included junior and senior level undergraduate students currently enrolled in a nursing program with full-time status at two midwestern universities. Further inclusion criteria included being able to read and speak English, having access to the internet to complete the survey, and currently participating in or having completed some clinical practicum hours.
Sample Size

For multiple regression analyses, various methods have been proposed for determining sample size a priori. Darlington and Hayes propose a rule of thumb of 10 participants per regressor (2016). As the simple subject-to-variable rule of thumb fails with small numbers of independent variables (Brooks & Barcikowski, 2012), some statisticians offer a minimum number in addition to a ratio. For example, Green proposed a sample size formula of \( N = 50 + 8k \), where \( k \) is the number of independent variables in the regression model (Green, 1991). A shortcoming of rule of thumb methods, though, is that effect size is not considered.

A power analysis considers the interplay between the significance level, power, and effect size (Cohen, 1992; Field, 2013; VanVoorhis & Morgan, 2007) to estimate the required sample size for the proposed study. The significance level (\( \alpha \)) refers to the probability of rejecting the null hypothesis if the null hypothesis is actually true, also known as Type I error. The power (1-\( \beta \)) of the study is the probability that a relationship will be found assuming that a relationship between variables does exist. Higher power reduces the chance of Type II error, which occurs if the null hypothesis is accepted when it should be rejected. Conventional values for \( \alpha \) and \( \beta \) are frequently 0.05 and 0.2, respectively (Cohen, 1992; Field, 2013). When previous research indicates a plausible effect size, it is best to utilize that estimate in the sample size equation. However, if no previous research has been done on the current topic, an effect size must be chosen based on the smallest effect that would be of clinical importance for the proposed relationships. Cohen suggests that a small, medium, and large effect sizes (\( f^2 \)) are 0.02, 0.15, and 0.35 respectively (1992).
One weakness of relying on a power analysis for sample size determination with multiple regression is that the researcher is usually interested in both the omnibus significance test and the individual regression coefficients of each predictor. The power analysis may indicate what sample is needed to reject the null hypothesis, but does not provide information regarding the number of participants required to obtain stable regression coefficients for prediction (i.e. an ability to generalize meaningful relationships between independent and dependent variables beyond the study sample) (Brooks & Barcikowski, 2012; Knofczynski, 2017).

For the current study, a power analysis using conventional α and β values (0.05 and 0.2 respectively) and a medium effect size (\(\eta^2\)) of 0.15 (since no previous research exists on the current phenomenon and a small effect size may be clinically irrelevant) indicates the need for a sample size of 122 (Soper, 2022). Rules of thumb would recommend 110 (Darlington & Hayes, 2016) or 138 (Green, 1991) participants. The minimum sample size based on all the above recommendations, the available population, and the budget of the researcher was n=140.

**Instrumentation**

Demographic data was collected including age, gender, race/ethnicity, year of study, school of nursing they attend, and the number of clinical semesters in which they had participated. Data regarding pertinent contextual factors including religious denomination affiliation was also collected. Measurement instruments used in this study have shown evidence in previous literature of psychometric soundness in similar populations. Permission to use the scales in the current study was obtained. The instruments are the Views of Suffering Scale (Hale-Smith et al., 2012), The Positive
Thinking Skills Scale (Bekhet & Zauszniewski, 2013), and the Professional Quality of Life scale, Version 5 (Stamm, 2010).

**Views of Suffering**

Nursing students’ views of suffering were measured with the Views of Suffering Scale [VOSS]. Hale-Smith and colleagues developed the initial items of the VOSS based on the most common views of suffering represented in North America (2012). As 67% of Americans identify as Christians (Gallup, 2022), six of the 10 subscales are Judeo-Christian theodicies, or attempts to reconcile orthodox views of a God who is omniscient and omnibenevolent with the existence of suffering and evil (Brown, 1999; Hale-Smith et al., 2012). The other four subscales represent other commonly held belief systems in America including Buddhism, Hinduism, Atheism, and unorthodox theism (Hale-Smith et al., 2012). Each subscale contains three items rated on a six-point Likert scale ranging from 1 = “strongly disagree” to 6 = “strongly agree.” A composite score should not be calculated for the entire scale; rather, each subscale composite score should be calculated and examined separately as each subscale represents a distinct way of viewing suffering (Hale-Smith et al., 2012). Higher total scores for each subscale indicate a participant’s higher level of agreement with that view of suffering, with total subscale scores ranging from three to 18.

In the initial testing, Cronbach’s alphas were 0.7 to 0.9 for each VOSS subscale (Hale-Smith et al., 2012). In a sub-sample of 100 undergraduates, test-retest reliability was demonstrated after 14 days with Cronbach’s alphas again ranging from 0.7 to 0.9 (Hale-Smith et al., 2012). While still relatively new, subsequent studies including samples of undergraduate students (Bambenek, 2017; Jarrett, 2014; Wilt et al., 2017),
chaplains (Currier et al., 2017), and evangelical Christians (Bock et al., 2021) have used the VOSS. Most subscales of the VOSS demonstrated acceptable reliability with Cronbach’s alphas of 0.7 to 0.9, but the Encounter subscale had reported Cronbach’s alphas of 0.66 (Wilt et al., 2017) and 0.61 (Bambenek, 2017) in samples of undergraduate students and the alpha reliability for the Random subscale in Bambenek’s study was 0.59 (2017). Additionally, the Divine Responsibility subscale had questionable reliabilities in many studies, ranging from 0.40 to 0.67 (Bambenek, 2017; Currier et al., 2017; Jarrett, 2014; Wilt et al., 2017). Wilt et al. noted, however, that the mean interitem correlation of the Divine Responsibility subscale was 0.28 in their study (2017), indicating the items did measure a single construct (Revelle & Condon, 2019). The low number of items per subscale, while contributing to parsimony and avoiding redundancy, does contribute to lower reliability alpha scores.

As expected, the theistic subscales were correlated with each other, and each was also positively correlated with Christian Orthodoxy (Hale-Smith et al., 2012). Catholics and Protestants scored significantly higher on the theistic subscales than Atheists/Agnostics, while the converse was true for the Unorthodox and Random subscales, demonstrating construct validity (Hale-Smith et al., 2012). Convergent validity was demonstrated as the subscales correlated as expected with established measures of other constructs. For example, the Providence subscale had a negative relationship with the Randomness subscale of the World Assumptions Scale ($r = -0.26, p < 0.01$) and the Unorthodox subscale was significantly negatively correlated with the Benevolence subscale of the God Image Scales ($r = -0.19, p < 0.01$) (Hale-Smith et al., 2012).

**Positive Thinking**
Positive Thinking was measured with the Positive Thinking Skills Scale [PTSS] (Bekhet & Zauszniewski, 2013). The PTSS contains four items related to reframing negative thoughts (e.g. “Transform negative thoughts into positive thoughts”) and four items related to use of positive thought processes (e.g. “Know how to break a problem into smaller part to be manageable”) (Bekhet & Zauszniewski, 2013, p. 1079). Nursing students rate how frequently they perform each skill on a four-point scale ranging from 0 = never to 3 = always. Summed scores range from zero to 24 with higher scores indicating greater use of positive thinking. The PTSS has been used with undergraduate students (Matel-Anderson et al., 2019), caregivers of dementia patients (Bekhet & Garnier-Villarreal, 2020) and caregivers of persons with autism (Bekhet & Garnier-Villarreal, 2018). Reliability has been consistently high, with average variance extracted of 0.601, maximal reliability of 0.909 (Bekhet & Garnier-Villarreal, 2020) and Cronbach’s alpha of 0.90 (Bekhet & Zauszniewski, 2013). Scores on the PTSS have been positively correlated with positive cognitions and negatively correlated with depression, demonstrating construct validity (Bekhet & Zauszniewski, 2013).

Professional Quality of Life

The Professional Quality of Life scale, Version 5 [ProQOL] was utilized to measure the outcome variables of compassion satisfaction [CS] and compassion fatigue [CF]. The ProQOL consists of subscales: compassion satisfaction, secondary traumatic stress [STS], and burnout [BO]. CS is the positive outcome of helping others, while STS and BO are theorized to be similar yet distinct negative outcomes related to working as a helper – together they constitute CF (Stamm, 2010). Each subscale is composed of 10 items, and respondents choose on a Likert scale (1=Never to 5=Very Often) that reflects
how frequently the participant experienced these things in the last 30 days (Stamm, 2010). Total scores will be calculated for each subscale. Higher scores for CS represent positive feelings about the participant’s role as a nursing student and pleasure derived from helping others. An example item from the CS subscale is “I get satisfaction from being able to [help] people” (Stamm, 2010, p. 26). Higher scores for STS reflect the development of fear associated with exposure to others’ trauma, or a need to actively avoid thinking about the trauma of those you have helped - for example, “I feel as though I am experiencing the trauma of someone I have [helped]” (Stamm, 2010, p. 26). For BO, higher scores indicate feelings of hopelessness in performing work as a caregiver. An example item from this subscale is “I feel trapped by my job as a [helper]” (Stamm, 2010, p. 26). For each subscale, 0-22 indicates low risk, 23-41 indicates moderate risk, and 42 and above indicates high risk (Stamm, 2010). While Geoffrion and colleagues have proposed that a bifactor model with a unidimensional score may be adequate for assessing professional quality of life, they also found that variance remained after accounting for a general factor that was explained by the three subscales, and more research needs to be done before utilizing the scale as a one-factor tool (2019).

The ProQOL has been used in over 200 published studies and subscales have demonstrated good reliability (CS: $\alpha = 0.88$; BO: $\alpha = 0.75$; STS: $\alpha = 0.81$) (Stamm, 2010). While internal consistency has been excellent, some studies have noted problems with convergent validity of the BO and STS subscales. In particular, two of the reverse-coded items of the BO scale and 2 items on the STS subscale had low factor loadings in separate studies assessing the psychometric properties of the ProQOL (Ang et al., 2020; Hemsworth et al., 2018; Keesler & Fukui, 2020) and these items may need to be
interpreted with caution in the current study. Multiple studies have demonstrated construct validity and discriminant validity (Ang et al., 2020; Geoffrion et al., 2019; Hemsworth et al., 2018) and the ProQOL has frequently been used in studies including nurses and nursing students (Ang et al., 2020; Heritage et al., 2019; Li, S. et al., 2021; Mason, H. & Nel, 2012; Mason, V. M. et al., 2014; McVicar et al., 2021; Rees et al., 2016).

**Human Subjects Protection**

Approval from Marquette’s institutional review board was obtained prior to recruiting participants, and all needed training for human subjects research was completed by the principal investigator. Informed consent was obtained in which participants were given information regarding the purpose of the survey, the rights of the participants, the methods of preserving anonymity and confidentiality, the voluntary nature of survey, and their right to terminate participation of the survey at any time. Participants were also informed that the results will be disseminated as aggregated data. The researcher provided an email address if participants had any questions.

**Data Collection Methods**

Information on participating in the study was distributed via email to students meeting the inclusion criteria. Informed consent was obtained via the initial screen of the online survey. After reading the initial screen, continuation with the survey indicated the student’s consent. Demographic information and the instruments measuring the variables of interest were combined into one survey using Qualtrics (2020). The ProQOL questions were situated first, directly after the inclusion criteria questions, to avoid any bias of the outcome variable related to question order. No personal identifying information was
gathered from the participants. Upon completion of the survey, a link was provided that directed participants to a second survey which allowed them to provide an email address to receive the gift card that was not connected to the initial survey. Reminder emails were to be sent weekly until the desired sample size was obtained, however the sample size was obtained within the first week, so this step was not needed. Data was downloaded from Qualtrics to a password protected file in IBM SPSS Statistics, version 28.0.

**Data Analysis Plan**

Analyses were done to ensure that statistical assumptions for multiple regression are met. A plan was made to handle missing data using pairwise deletion unless the percentage of missing values is greater than 5%. In that case, missing data would be handled using multiple imputation, which uses a specified number of random samples with replacement from a distribution of the variable with missing data to estimate missing values (Tabachnick & Fidell, 2013). However, neither method was utilized as no data were missing. Descriptive statistics were performed to describe the sample. Frequencies and percentages are reported to describe categorical variables. Means, medians, standard deviations, and ranges are reported to describe continuous variables. Histograms were utilized for visual inspection of the data.

Reliability estimates were performed using the McDonald’s omega, which assumes that single items have different weights in forming the optimal linear combination of the scale (Darlington & Hayes, 2016), and Cronbach’s alpha, which is an estimate of inter-item correlation (Raykov, 2012). For the VOSS subscales, inter-item correlations could also be reported as the reliability coefficients may not accurately represent reliability due to the low number of items per subscale (Streiner, 2003).
Data was assessed for univariate and multivariate outliers. Multicollinearity between predictor variables was evaluated using the Variance Inflation Factor. Bivariate correlations were done between each view of suffering, positive thinking, and each outcome variable (BO, STS, and CS) using Pearson’s correlation coefficient ($r$). Multiple regression models were utilized to answer the research questions. An alpha of 0.05 was used for all null hypothesis significance tests. Data analysis was performed using IBM SPSS Statistics, version 28.0.

Research Question 1: What are the relationships between nursing students’ views of suffering and their professional quality of life (compassion fatigue and compassion satisfaction)?

The six benevolent views of suffering were hypothesized to have a positive association with CS and a negative association with BO and STS, the components of compassion fatigue. The four nonbenevolent views of suffering were hypothesized to have a negative association with CS and a positive association with BO and STS. This was assessed by performing bivariate correlations using Pearson’s correlation coefficient ($r$). As scores on the benevolent VOSS subscales rise, it was predicted that scores on the CS subscale would rise and scores on the BO and STS subscales would decrease. As scores on the nonbenevolent VOSS subscales rise, it was predicted that scores on the CS subscale would decrease and scores on the BO and STS subscales would increase.

Using multiple regression models, the multiple correlation coefficients ($R^2$) are reported to determine how much of the variance in the dependent variables (CS, BO, and STS) is accounted for by the views of suffering. The unstandardized regression coefficients are reported to assess the relationship between each view of suffering
subscale score and each dependent variable subscale score. The standardized beta coefficients and corresponding p-values are reported and used to determine the significance and effect size of each individual view of suffering in predicting the dependent variables. 95% confidence intervals for the standardized beta coefficients are reported to describe the clinical significance of the results.

Research Question 2: What is the relationship between nursing students’ positive thinking skills and their professional quality of life (compassion fatigue and compassion satisfaction)?

Positive thinking was hypothesized to have a positive association with CS and a negative association with BO and STS, the components of CF. This was assessed by performing bivariate correlations using Pearson’s correlation coefficient (r). As scores on the PTSS rise, it was predicted that scores on the CS subscale would rise and scores on the BO and STS subscales would decrease.

Using multiple regression equations, the multiple correlation coefficients ($R^2$) are reported to determine how much of the variance in the dependent variables (CS, BO, and STS) is accounted for by positive thinking. The unstandardized regression coefficients are reported assess the relationship between the positive thinking skills scale score and each dependent variable subscale score. The standardized beta coefficient and corresponding p-value are reported and used to determine the significance and effect size of positive thinking in predicting the dependent variables. 95% confidence intervals for the standardized beta coefficients are reported to describe the clinical significance of the results.
Research Question 3: Do nursing students’ positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction)?

For each view of suffering that was a statistically significant predictor of BO, STS, or CS in the main effects multiple regression models, an interaction variable was created and added to the corresponding main effects model separately (view of suffering x positive thinking) to evaluate research question three. It was hypothesized that positive thinking would moderate the relationships between each view of suffering and the dependent variables, BO, STS, and CS. The pertinence of each interaction was assessed by the p-value of the slope of the interaction regression and the change in $R^2$ between the main effects model and the interaction model (Darlington & Hayes, 2016). Plotting and probing of each significant interaction effect would be done to estimate the conditional relationship between each view of suffering and each outcome variable (BO, STS, and CS) on positive thinking, the moderator variable. Using the RLM macro addition, the Johnson-Neyman technique (Darlington & Hayes, 2016) would be performed to estimate the simple slopes of the relationship between each view of suffering and BO, STS, and CS, conditional on different levels of positive thinking. The Johnson-Neyman regions of significance and plots of simple slopes at the 25th, 50th, and 75th percentiles of VOSS subscale scores would be reported for all statistically significant interaction effects. Since no significant interactions were found, plotting and probing was not performed.

Limitations

This study has several limitations. The non-probability convenience sampling method limits generalizability (Polit & Beck, 2008). Because the survey was voluntary, a
nonresponse bias may be present as those who chose to participate might be different from those who did not (Polit & Beck, 2008). The cross-sectional design limits causal inference. However, examining the theoretically proposed relationships at one timepoint will fill a significant gap in the literature due to the dearth of quantitative exploration of the concepts of interest. This study utilized self-report measures, which can result in willful or unintended misrepresentation (Polit & Beck, 2008). However, the concepts of interest in this study are fundamentally subjective and the instruments utilized were chosen because of their previously demonstrated validity and reliability at measuring the concepts. Finally, although the variables for this study were chosen based on a theoretical framework and thorough literature review, the possible effect of unmeasured covariates is a potential limitation on the findings of this study.

**Conclusion**

This cross-sectional correlational study investigates the relationships between nursing students’ views of suffering, positive thinking, and their compassion satisfaction and compassion fatigue. By using valid and reliable instruments to measure the concepts of interest, this quantitative study adds to the body of knowledge regarding factors related to nursing students’ compassion satisfaction and compassion fatigue. This knowledge can guide future assessment of risk and intervention development to promote nursing students’ professional quality of life.

This chapter reviewed the methodology for the current study including the specific aims and hypotheses, research design, sampling issues, key variables, instrumentation, human subjects protection, data collection methods, the data analysis plan, and limitations of the study.
CHAPTER IV: FINDINGS

Introduction

In this chapter, a manuscript will examine the results of the multiple regression models utilized to answer the research questions. A second manuscript will analyze the psychometric properties of the Positive Thinking Skills Scale in a sample of undergraduate nursing students. Both manuscripts explore findings of the cross-sectional data collected from 157 undergraduate nursing students from two Midwestern universities.

The specific aims and hypotheses of the study are:

Aim 1: To examine the relationships between views of suffering and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 1a: Benevolent views of suffering will be positively related to compassion satisfaction and negatively related to compassion fatigue.

Hypothesis 1b: Nonbenevolent views of suffering will be negatively related to compassion satisfaction and positively related to compassion fatigue.

Aim 2: To examine the relationship between positive thinking skills and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 2a: Positive thinking skills will be positively related to compassion satisfaction.

Hypothesis 2b: Positive thinking skills will be negatively related to compassion fatigue.
Aim 3: To determine if positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction) in undergraduate nursing students.

Hypothesis 3: Positive thinking skills will moderate the relationships between views of suffering and professional quality of life.

At the conclusion of the chapter, the direct effects of the independent variables and the potential moderating effect of positive thinking will be reviewed. The psychometric properties of the Positive Thinking Skills scale will also be summarized.

Manuscript 1. Examining Relationships Among Nursing Students' Views of Suffering, Positive Thinking, and Professional Quality of Life

Nurses are frequently exposed to suffering of patients and families. Providing compassionate care for these patients and families can be gratifying, but poor psychological outcomes due to this exposure to suffering are prevalent in both nurses and nursing students (Boyle, 2015; Gustafsson & Hemberg, 2022; Mason, Henry, 2018). As emerging adults, undergraduate nursing students’ coping skills are underdeveloped, leaving them at-risk for poor psychological outcomes (Arnett, 2015). To promote better coping and address a predicted nursing shortage (Buerhaus, 2021), further research investigating factors related to nursing students’ adaptation to the professional nursing role is warranted.

Promoting Professional Quality of Life

Professional quality of life includes compassion satisfaction and compassion fatigue – the positive and negative feelings one derives from caring for others (Figley, 2002). For both nurses and nursing students, negative psychological outcomes such as compassion fatigue are associated with intent to leave the nursing profession (Chachula,
2022; Chen et al., 2021). Turnover rates tend to be the highest for novice nurses and younger nurses (Koehler & Olds, 2022; Kovner et al., 2014). Kovner and colleagues (2014) found that 17.5% of novice nurses intended to leave within the first year of practice, and 33.5% by the second year. The odds of reporting intention to leave decreased by 1.5% for each year of nursing practice (Koehler & Olds, 2022). With accelerating retirements and the rapid growth of the advanced practice nursing workforce, among other factors, addressing professional quality of life is necessary to avoid a shortage of registered nurses (Auerbach et al., 2017; Buerhaus, 2021).

Many individuals choose nursing as a profession to help others and relieve suffering and many nurses and nursing students report deriving positive benefits from assisting patients and families who are suffering (Eley et al., 2012). Making a difference in the lives of patients and their families provides nursing students a sense of accomplishment (Jarden et al., 2021b). In their seminal works on professional quality of life, Stamm (2010) and Figley (2002) call this positive outcome of the role of caring for others compassion satisfaction.

Despite the reward of helping professions, providing compassionate care to suffering patients and families is associated with negative outcomes for nurses, such as compassion fatigue (National Academies of Sciences, Engineering, and Medicine, 2019; Nolte et al., 2017). Nurses have reported feeling helpless when unable to alleviate patients’ suffering (Rowe, 2012). They experience suffering, themselves, when witnessing the suffering of their patients (Rowe, 2012). This “cost of caring” is known in the literature as “compassion fatigue” (Boyle, 2015, p. 49; Figley, 2002, p. 109). As undergraduate nursing students begin to explore their professional identity as nurses, their
compassion satisfaction and compassion fatigue may be key indicators of whether they feel the nursing role is right for them.

As emerging adults, many traditional undergraduate nursing students are in the stage of life characterized by change and uncertainty as they explore their identities, including their future vocations (Arnett, 2015). They are searching for jobs that use their specific gifts and talents, and that they genuinely enjoy doing (Arnett, 2015). A stronger reliance on maladaptive coping strategies in the earlier years of this life stage leave this group of individuals vulnerable when exposed to suffering (Arnett, 2015). Undergraduate nursing students gaining their first clinical experiences anticipate that transitioning into the professional role will take a toll on their psychological well-being (Saber et al., 2016). Research has shown that novices in helping professions are more at risk for developing compassion fatigue and other negative psychological outcomes than their more seasoned counterparts (Woods et al., 2015). Enhancing resilience for nursing students can reduce their vulnerability to negative outcomes by promoting adaptation to the professional role of caring for suffering patients and families and improving professional quality of life.

**Resilience Theory**

Resilience theory provides a theoretical framework to guide the investigation into promoting professional quality of life in undergraduate nursing students. Resilience is conceptualized as a dynamic process of adapting positively despite exposure to adversity (Masten, 2014). Various protective factors and risk factors can impact the adaptation process (Masten, 2014). Protective factors are correlated with more positive adaptation, and, therefore, seem to encourage resilience, whereas risk factors correlate with poor adaptation and seem to inhibit resilience (Masten, 2014).
Within the framework of resilience theory, exposure to the suffering of others is conceptualized as an adversity. Literature reveals how difficult nursing students find their experiences of helping suffering patients and families (Eifried, 2003; ten Hoeve, Kunnen, et al., 2018). Qualitative studies of nursing students and novice nurses describing clinical encounters reveal that they are shocked to find so much suffering that cannot be alleviated (Eifried, 2003). They are overwhelmed and express feelings of frustration, powerlessness, vulnerability, and emotional exhaustion in the face of unrelieved suffering (Eifried, 2003; Pedersen & Sivonen, 2012; ten Hoeve, Kunnen, et al., 2018).

Positive thinking is hypothesized to be a protective factor and promote resilience. Nursing students have reported using positive thinking, reframing, and other methods of making sense of their experiences when exposed to suffering (Wolf et al., 2015). Learning positive thinking skills allowed nursing students to create meaning from difficult parts of their clinical experiences (Kadappuran & Guzman, 2021; Liang et al., 2019). It should be noted that these studies were qualitative in nature and did not measure the students’ positive thinking skills. Quantitative research shows that higher scores on scales measuring resilience, hope, and optimism are associated with positive psychological outcomes such as compassion satisfaction and negatively associated with negative psychological outcomes such as compassion fatigue and burnout in nursing students and novice nurses (Cao et al., 2021; Dwyer et al., 2019; Yu & Lee, 2018). However, these constructs are generally dispositional and, therefore, not as teachable as positive thinking. None of the limited previous studies measured the role of positive thinking as a protective factor as proposed in this study.
Views of suffering are other ways nursing students may create meaning from the exposure to suffering patients and families. Exposure to suffering in clinical encounters raises existential questions for undergraduate nursing students (Eifried, 2003; Thorup et al., 2012). Many nurses and nursing students report that they turn to religious beliefs as a way of coping with exposure to suffering (Eifried, 2003; Gustafsson & Hemberg, 2022; Nolte et al., 2017; Rowe, 2012). Views of suffering, or theodicies, attempt to reconcile the existence of suffering with a concurrent belief in God’s goodness, or attempt to find non-theological ways to make sense of suffering (Hale-Smith et al., 2012). Benevolent views of suffering, which are hypothesized to be a protective factor, include the notion that a good deity is present amidst the suffering and may promote coping with exposure to suffering (Hale-Smith et al., 2012; Wilt et al., 2017). Nonbenevolent views of suffering include views that suffering is a punishment, or suffering is a random, meaningless phenomenon (Hale-Smith et al., 2012; Wilt et al., 2017). These views may hinder coping and are hypothesized to be risk factors.

Nursing students have reported either feeling capable and proud of their ability to provide compassionate care for their suffering patients or feeling overwhelmed and unable to cope (Pedersen & Sivonen, 2012). They express feelings of frustration and emotional exhaustion in the face of unrelieved suffering (Eifried, 2003; Pedersen & Sivonen, 2012). However, nursing students also find fulfillment as they provide competent and compassionate care for their patients and families (Eifried, 2003; Pedersen & Sivonen, 2012). Within the framework of resilience theory, compassion satisfaction is the outcome variable that indicates positive adaptation, and compassion fatigue is the outcome variable indicating maladaptation (Figley, 2002; Stamm, 2010).
Despite the association between nursing students’ exposure to suffering and the development of compassion fatigue, little research exists regarding promoting nursing students’ adaptation to caring for suffering patients and families. To date, nursing students’ views of suffering have not been studied in relation to their levels of compassion satisfaction and compassion fatigue. Furthermore, while the literature indicates that positive thinking may be a protective factor for resilience in nursing students, no research has been done investigating the relationship between positive thinking, views of suffering, compassion satisfaction, and compassion fatigue as proposed in this study. Knowledge of these relationships can aid in the assessment of nursing students at risk for poor outcomes and can guide intervention development to promote professional quality of life.

**Purpose of the Study**

Using the theoretical framework of resilience theory, this study will investigate the potential moderating effect of positive thinking skills on the relationships between undergraduate nursing students’ views of suffering and their compassion fatigue and compassion satisfaction.

**Research Questions**

This study will address the following research questions (see Figure 8):

Research Question 1: What are the relationships between nursing students’ views of suffering and their professional quality of life (compassion fatigue and compassion satisfaction)?
Research Question 2: What is the relationship between nursing students’ positive thinking skills and their professional quality of life (compassion fatigue and compassion satisfaction)?

Research Question 3: Do nursing students’ positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction)?

**Figure 8**

*Conceptual Diagram of Research Questions*

![Diagram](image)

**Methods**

**Design**

A cross-sectional, correlational design was utilized to examine the relationships between views of suffering, positive thinking, and compassion fatigue and compassion satisfaction in undergraduate nursing students.
Sample

A convenience sample of 157 junior and senior level undergraduate students currently enrolled in a nursing program with full-time status at two midwestern universities (one public and one private) was recruited. Further inclusion criteria included being able to read and speak English, have access to the internet to complete the survey, and be currently participating in or have completed at least one semester of clinical practicum. A power analysis using conventional α and β values (0.05 and 0.2 respectively) and a medium effect size (r^2) of 0.15 indicated the need for a minimum sample size of 122 (Soper, 2022).

Variables and Measures

Table 5 shows the instruments and their reliabilities in the current study.

Table 5

Descriptive Statistics and Reliabilities of Variable Instruments

<table>
<thead>
<tr>
<th>Variables/Concepts</th>
<th>Measures</th>
<th>Number of Items</th>
<th>Possible Scores</th>
<th>Actual Scores</th>
<th>M (SD)</th>
<th>McDonald's Omega</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables:</strong></td>
<td>Views of Suffering Scale [VOSS] subscales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffering God</td>
<td>VOSS Suffering God</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>9.75 (4.70)</td>
<td>0.922</td>
<td>0.921</td>
</tr>
<tr>
<td>Providence</td>
<td>VOSS Providence</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>8.73 (4.32)</td>
<td>0.858</td>
<td>0.849</td>
</tr>
<tr>
<td>Divine Responsibility</td>
<td>VOSS Divine Responsibility</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>9.69 (4.12)</td>
<td>0.811</td>
<td>0.788</td>
</tr>
<tr>
<td>Encounter</td>
<td>VOSS Encounter</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>9.77 (4.14)</td>
<td>0.822</td>
<td>0.818</td>
</tr>
<tr>
<td>Overcoming</td>
<td>VOSS Overcoming</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>8.38 (4.04)</td>
<td>0.878</td>
<td>0.877</td>
</tr>
<tr>
<td>Soul-Building</td>
<td>VOSS Soul-Building</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>9.76 (4.53)</td>
<td>0.922</td>
<td>0.919</td>
</tr>
<tr>
<td>Unorthodox</td>
<td>VOSS Unorthodox</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>8.84 (3.88)</td>
<td>0.86</td>
<td>0.859</td>
</tr>
<tr>
<td>Random</td>
<td>VOSS Random</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>11.87 (3.69)</td>
<td>0.770</td>
<td>0.766</td>
</tr>
<tr>
<td>Retribution</td>
<td>VOSS Retribution</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>7.55 (3.27)</td>
<td>0.741</td>
<td>0.732</td>
</tr>
<tr>
<td>Limited Knowledge</td>
<td>VOSS Limited Knowledge</td>
<td>3</td>
<td>3-18</td>
<td>3-18</td>
<td>6.89 (3.28)</td>
<td>0.857</td>
<td>0.856</td>
</tr>
<tr>
<td><strong>Moderating Variable:</strong></td>
<td>Positive Thinking Skills Scale</td>
<td>8</td>
<td>0-24</td>
<td>7-24</td>
<td>13.57 (3.73)</td>
<td>0.822</td>
<td>0.824</td>
</tr>
<tr>
<td><strong>Dependent Variables:</strong></td>
<td>Professional Quality of Life Scale [ProQOL] subscales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compassion Satisfaction</td>
<td>ProQOL CS</td>
<td>10</td>
<td>10-50</td>
<td>23-50</td>
<td>39.68 (5.15)</td>
<td>0.851</td>
<td>0.851</td>
</tr>
<tr>
<td>Burnout [BO]</td>
<td>ProQOL BO</td>
<td>10</td>
<td>10-50</td>
<td>12-38</td>
<td>24.22 (4.48)</td>
<td>0.734</td>
<td>0.740</td>
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<tr>
<td>Secondary Traumatic Stress [STS]</td>
<td>ProQOL STS</td>
<td>10</td>
<td>10-50</td>
<td>11-40</td>
<td>22.31 (5.80)</td>
<td>0.799</td>
<td>0.799</td>
</tr>
</tbody>
</table>
**The Independent Variable: Views of Suffering**

Nursing students’ views of suffering were measured with the Views of Suffering Scale [VOSS] (Hale-Smith et al., 2012). Hale-Smith and colleagues developed the initial items of the VOSS based on the most common views of suffering represented in North America (Hale-Smith et al., 2012). As 67% of Americans identify as Christians (Gallup, 2022), six of the 10 subscales are Judeo-Christian theodicies, or attempts to reconcile orthodox views of a God who is omniscient and omnibenevolent with the existence of suffering and evil (Brown, 1999; Hale-Smith et al., 2012). The other four subscales represent other commonly held belief systems in America, including Buddhism, Hinduism, Atheism, and unorthodox theism (Hale-Smith et al., 2012). Each subscale contains three items rated on a six-point Likert scale ranging from 1 = “strongly disagree” to 6 = “strongly agree.” A composite score should not be calculated for the entire scale; rather, each subscale composite score should be calculated and examined separately as each subscale represents a distinct way of viewing suffering (Hale-Smith et al., 2012). Scores range from three to 18 for each subscale and higher scores indicate a participant’s higher level of agreement with that view of suffering. Cronbach’s alphas were 0.7 to 0.9 for each VOSS subscale (Hale-Smith et al., 2012). Cronbach’s alphas for the subscales in this study ranged from 0.788 to 0.921 (Table 5).

**The Moderating Variable: Positive Thinking**

Positive Thinking was measured with the 8-item Positive Thinking Skills Scale [PTSS] (Bekhet & Zauszniewski, 2013). The PTSS contains four items related to reframing negative thoughts (e.g. “Transform negative thoughts into positive thoughts”) and four items related to use of positive thought processes (e.g. “Know how to break a
problem into smaller part to be manageable”) (Bekhet & Zauszniewski, 2013). Nursing students rated how frequently they perform each skill on a four-point scale ranging from 0 = never to 3 = always. Summed scores range from zero to 24 with higher scores indicating greater use of positive thinking. The PTSS has been used with undergraduate students (Matel-Anderson et al., 2019), caregivers of dementia patients (Bekhet & Garnier-Villarreal, 2020) and caregivers of persons with autism (Bekhet & Garnier-Villarreal, 2018). Reliability has been consistently high, with average variance extracted of 0.601, maximal reliability of 0.909 (Bekhet & Garnier-Villarreal, 2020) and Cronbach’s alpha of 0.90 (Bekhet & Zauszniewski, 2013). The PTSS has been positively correlated with positive cognitions and negatively correlated with depression, demonstrating construct validity (Bekhet & Zauszniewski, 2013). Cronbach’s alpha for the PTSS in this study was 0.824 (Table 5).

**The Dependent Variables: Professional Quality of Life**

The Professional Quality of Life scale, Version 5 [ProQOL] was utilized to measure the outcome variables of compassion satisfaction and compassion fatigue. The ProQOL consists of three subscales: compassion satisfaction [CS], secondary traumatic stress [STS], and burnout [BO]. Compassion satisfaction is the positive outcome of helping others, while STS and BO are theorized to be similar yet distinct negative outcomes related to working as a helper – together they constitute compassion fatigue (Stamm, 2010). Each subscale is composed of 10 items, and respondents choose on a Likert scale (1=Never to 5=Very Often) that reflects how frequently the participant experienced these things in the last 30 days (Stamm, 2010). Total scores will be calculated for each subscale. Higher scores for CS represent positive feelings about the
participant’s role as a nursing student and pleasure derived from helping others. Higher scores for STS reflect the development of fear associated with exposure to others’ trauma, or a need to actively avoid thinking about the trauma of those you have helped. For BO, higher scores indicate feelings of hopelessness in performing work as a caregiver. For each subscale, 0-22 indicates low risk, 23-41 indicates moderate risk, and 42 and above indicates high risk (Stamm, 2010). The ProQOL has been used in over 200 published studies and subscales have demonstrated good reliability (CS: $\alpha = 0.88$; BO: $\alpha = 0.75$; STS: $\alpha = 0.81$) and multiple studies have demonstrated construct validity and discriminant validity (Stamm, 2010). Cronbach’s alphas for the three ProQOL subscales in this study were 0.851, 0.740, and 0.799 respectively (Table 5).

Data Collection

Approval from Marquette’s institutional review board was obtained prior to recruiting participants. Information on participating in the study, including a link to an online survey created on Qualtrics (2020) was distributed via email to students meeting the inclusion criteria. Informed consent, including the voluntary nature of the survey and the right to terminate participation at any time, was obtained via the initial screen of the online survey. After reading the initial screen, continuation with the survey indicated the student’s consent. No personal identifying information was gathered from the participants. Contact information for the universities’ counseling services and campus ministry was provided in the opening screen of the survey as a reference if needed. Upon completion of the survey, a link was provided that directed participants to a second survey that was not connected to the initial survey which allowed them to provide an
email address to receive a gift card. Data was downloaded from Qualtrics to a password protected file in IBM SPSS Statistics, version 28.0.

**Data Analysis**

Data analysis was performed using IBM SPSS Statistics, version 28.0. Reliability estimates were performed using the McDonald’s omega and Cronbach’s alpha. Using multiple regression models, the multiple correlation coefficients ($R^2$) are reported to determine how much of the variance in the dependent variables (CS, BO, and STS) is accounted for by the views of suffering and positive thinking. The unstandardized regression coefficients are reported to assess the relationship between each view of suffering subscale score, positive thinking, and each dependent variable subscale score. The standardized beta coefficients and corresponding p-values are reported and used to determine the significance and effect size of each independent variable in predicting the dependent variables.

For each view of suffering that was a statistically significant predictor of BO, STS, or CS, in the main effects regression models, an interaction variable was created and added to the corresponding main effects model (view of suffering x positive thinking). The pertinence of each interaction was assessed by the p-value of the slope of the interaction regression and the change in $R^2$ between the main effects model and the interaction model (Darlington & Hayes, 2016). Plotting and probing of each significant interaction effect was done to estimate the conditional relationship between each view of suffering and each outcome variable (BO, STS, and CS) on positive thinking, the moderator variable. Using the RLM macro addition, the Johnson-Neyman technique (Darlington & Hayes, 2016) was performed to estimate the simple slopes of the
relationship between each view of suffering and BO, STS, and CS, conditional on different levels of positive thinking.

**Results**

**Descriptive Statistics**

The sample consisted of 157 students from two Midwestern universities: 87 from a mid-sized Catholic university and 70 from a large public university (Table 6). Participants ranged in age from 20 to 46 years (M=21.85, SD = 3.21). The majority of students indicated they were White (74.5%), followed by Hispanic/Latino (14.6%), Asian/Pacific Islander (4.5%), Black/African American (2.5%), biracial (1.9%), American Indian (1.3%), and Middle Eastern (0.6%). 95.5% of respondents identified as female, 3.8% as male, and 0.6% as Other/Prefer not to respond. A majority of students listed their religious affiliation as Catholic (43.3%), followed by Other Christian (16.6%) and Nothing in particular (16.6%), with other monotheistic religions, atheism, and agnosticism also represented. (Table 6).

Relationships between demographic variables and the moderator and dependent variables were examined with Pearson correlation coefficients for binary and continuous variables, and one-way analyses of variance or Kruskal Wallis tests for categorical variables. Gender, race/ethnicity, religious affiliation, and number of semesters of clinical practicums were not associated with scores on the ProQOL subscales or PTSS.

University that the participant attended correlated with CS and BO. However, as the views of suffering one holds are often religious in nature and may influence whether one would choose a public or Catholic university, this covariate was not included in the regression equation to avoid overadjustment (Schisterman et al., 2009). The following
control factors were added to regression equations: age to the equation predicting STS; and year in the nursing program to the equation predicting BO.

Table 6

Descriptive Statistics of the Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>n=157</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large public</td>
<td>70</td>
<td>44.6%</td>
</tr>
<tr>
<td>Mid-sized private</td>
<td>87</td>
<td>55.4%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
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<td>3.8%</td>
</tr>
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<td>Female</td>
<td>150</td>
<td>95.5%</td>
</tr>
<tr>
<td>Other/Prefer not to respond</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
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<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>117</td>
<td>74.5%</td>
</tr>
<tr>
<td>Black/African American</td>
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<td>2.5%</td>
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<tr>
<td>American Indian</td>
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</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7</td>
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</tr>
<tr>
<td>Hispanic/Latino</td>
<td>23</td>
<td>14.6%</td>
</tr>
<tr>
<td>Biracial</td>
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</tr>
<tr>
<td>Other/Please specify</td>
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<td>0.6%</td>
</tr>
<tr>
<td>Year in program</td>
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<td></td>
</tr>
<tr>
<td>Junior</td>
<td>71</td>
<td>45.2%</td>
</tr>
<tr>
<td>Senior</td>
<td>86</td>
<td>54.8%</td>
</tr>
<tr>
<td>Number of semesters of clinical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>14</td>
<td>8.9%</td>
</tr>
<tr>
<td>2</td>
<td>60</td>
<td>38.2%</td>
</tr>
<tr>
<td>3</td>
<td>57</td>
<td>36.3%</td>
</tr>
<tr>
<td>4 or more</td>
<td>26</td>
<td>16.6%</td>
</tr>
<tr>
<td>Religious affiliation</td>
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<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>68</td>
<td>43.3%</td>
</tr>
<tr>
<td>Protestant</td>
<td>5</td>
<td>3.2%</td>
</tr>
<tr>
<td>Orthodox Christian</td>
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<td>1.3%</td>
</tr>
<tr>
<td>Other Christian</td>
<td>26</td>
<td>16.6%</td>
</tr>
<tr>
<td>Jewish</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Muslim</td>
<td>5</td>
<td>3.2%</td>
</tr>
<tr>
<td>Atheist</td>
<td>13</td>
<td>8.3%</td>
</tr>
<tr>
<td>Agnostic</td>
<td>11</td>
<td>7.0%</td>
</tr>
<tr>
<td>Nothing in particular</td>
<td>26</td>
<td>16.6%</td>
</tr>
</tbody>
</table>

Table 7 displays the correlations between the variables of interest. CS was negatively correlated with both BO and STS and positively correlated with all six of the benevolent views of suffering. CS also positively correlated with the Limited Knowledge
view. BO was positively correlated with the Unorthodox view of suffering (.188, p < 0.05), and negatively correlated with the Suffering God view (-.237, p < 0.05). STS was positively correlated with the Unorthodox view of suffering (.177, p < 0.05).

Table 7

Bivariate Correlations of Scores on Variable Scales

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Suffering God</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Providence</td>
<td>.750*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Divine Responsibility</td>
<td>.819*</td>
<td>.745*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Encounter</td>
<td>.816*</td>
<td>.801*</td>
<td>.834*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Overcoming</td>
<td>.696*</td>
<td>.783*</td>
<td>.725*</td>
<td>.726*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. Soul-Building</td>
<td>.735*</td>
<td>.810*</td>
<td>.763*</td>
<td>.788*</td>
<td>.669*</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Unorthodox</td>
<td>-.204*</td>
<td>-.096</td>
<td>-.073</td>
<td>-.137</td>
<td>-.161*</td>
<td>-.083</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Random</td>
<td>-.136</td>
<td>-.217*</td>
<td>-.107</td>
<td>-.181*</td>
<td>-.220*</td>
<td>-.193*</td>
<td>.354*</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>9. Retribution</td>
<td>.086</td>
<td>.211*</td>
<td>.184*</td>
<td>.140</td>
<td>.282*</td>
<td>.233*</td>
<td>.334*</td>
<td>.054</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10. Limited Knowledge</td>
<td>.412*</td>
<td>.343*</td>
<td>.424*</td>
<td>.355*</td>
<td>.285*</td>
<td>.379*</td>
<td>.410*</td>
<td>.245*</td>
<td>.346*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Positive Thinking</td>
<td>.162*</td>
<td>.185*</td>
<td>.142</td>
<td>.179*</td>
<td>.147</td>
<td>.264*</td>
<td>-.137</td>
<td>.021</td>
<td>.066</td>
<td>.038</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Compassion Satisfaction</td>
<td>.322*</td>
<td>.243*</td>
<td>.254*</td>
<td>.242*</td>
<td>.153*</td>
<td>.249*</td>
<td>-.067</td>
<td>.127</td>
<td>.025</td>
<td>.158*</td>
<td>.358*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>13. Burnout</td>
<td>-.237*</td>
<td>-.130</td>
<td>-.142</td>
<td>-.111</td>
<td>-.116</td>
<td>-.076</td>
<td>.188*</td>
<td>-.135</td>
<td>.017</td>
<td>-.001</td>
<td>-.318*</td>
<td>-.579*</td>
<td>1</td>
</tr>
<tr>
<td>14. Secondary Traumatic Stress</td>
<td>.060</td>
<td>.060</td>
<td>.120</td>
<td>.099</td>
<td>.059</td>
<td>.123</td>
<td>.177*</td>
<td>-.102</td>
<td>.121</td>
<td>.091</td>
<td>-.087</td>
<td>-.178*</td>
<td>.447*</td>
</tr>
</tbody>
</table>

*p<0.05 (two-tailed), N=157

Research Question 1: What are the relationships between nursing students’ views of suffering and their professional quality of life (compassion fatigue and compassion satisfaction)?

Research Question 2: What is the relationship between nursing students’ positive thinking skills and their professional quality of life (compassion fatigue and compassion satisfaction)?
To answer research questions 1 and 2, regression models were estimated in which CS, BO, and STS were predicted by the ten views of suffering and positive thinking (Table 8). Together, the views of suffering and positive thinking explained 23.8% of the variance in compassion satisfaction, $F(11, 145) = 4.121, p < .001$. Only the Suffering God view of suffering ($\beta = 0.349, p = .025$) and positive thinking ($\beta = 0.309, p < .001$), significantly predicted compassion satisfaction. As the Suffering God view of suffering increases by 1 unit, CS increases by 0.384 units (SE = 0.170) while keeping every other predictor constant. As positive thinking increases by 1 unit, CS increases by 0.427 units (SE = 0.106), keeping other predictors constant.

**Table 8**

*Multiple Linear Regression Analyses for Dependent Variables Compassion Satisfaction, Burnout, and Secondary Traumatic Stress*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Model</th>
<th>Independent Variable</th>
<th>$B$</th>
<th>Std. Error</th>
<th>Beta</th>
<th>$p$</th>
<th>95.0% CI for $B$</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compassion Satisfaction</td>
<td>1</td>
<td>(Constant)</td>
<td>28.871</td>
<td>2.180</td>
<td>&lt;.001</td>
<td>24.563</td>
<td>33.179</td>
<td>.238</td>
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<tr>
<td></td>
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<td>Unorthodox</td>
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<td>-.034</td>
<td>.724</td>
<td>-0.296</td>
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<tr>
<td></td>
<td></td>
<td>Random</td>
<td>.221</td>
<td>.115</td>
<td>.158</td>
<td>.058</td>
<td>-0.007</td>
<td>0.449</td>
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<tr>
<td></td>
<td></td>
<td>Retribution</td>
<td>.015</td>
<td>.135</td>
<td>.010</td>
<td>.910</td>
<td>-0.251</td>
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<tr>
<td></td>
<td></td>
<td>Limited Knowledge</td>
<td>-.009</td>
<td>.157</td>
<td>-.006</td>
<td>.956</td>
<td>-0.319</td>
<td>0.301</td>
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<tr>
<td></td>
<td></td>
<td>Suffering God</td>
<td>.384</td>
<td>.170</td>
<td>.349</td>
<td>.025</td>
<td>0.049</td>
<td>0.719</td>
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<td></td>
<td></td>
<td>Providence</td>
<td>.185</td>
<td>.187</td>
<td>.155</td>
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<td>-0.185</td>
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<td>Divine Responsibility</td>
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<td>.051</td>
<td>.747</td>
<td>-0.323</td>
<td>0.450</td>
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<tr>
<td></td>
<td></td>
<td>Encounter</td>
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<td>-.068</td>
<td>.676</td>
<td>-0.482</td>
<td>0.313</td>
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<td></td>
<td>Overcoming</td>
<td>-.232</td>
<td>.168</td>
<td>-.181</td>
<td>.171</td>
<td>-0.564</td>
<td>0.101</td>
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<td></td>
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<td>Soul-Building</td>
<td>-.057</td>
<td>.165</td>
<td>-.050</td>
<td>.729</td>
<td>-0.383</td>
<td>0.268</td>
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<tr>
<td></td>
<td></td>
<td>Positive Thinking</td>
<td>.427</td>
<td>.106</td>
<td>.309</td>
<td>&lt;.001</td>
<td>0.217</td>
<td>0.637</td>
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<tr>
<td>Burnout</td>
<td>1</td>
<td>(Constant)</td>
<td>23.570</td>
<td>.489</td>
<td>&lt;.001</td>
<td>22.604</td>
<td>24.535</td>
<td>.025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior year</td>
<td>1.444</td>
<td>.727</td>
<td>.158</td>
<td>.049</td>
<td>0.009</td>
<td>2.880</td>
</tr>
<tr>
<td>Burnout</td>
<td>2</td>
<td>(Constant)</td>
<td>31.055</td>
<td>2.016</td>
<td>&lt;.001</td>
<td>27.071</td>
<td>35.039</td>
<td>.244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior year</td>
<td>.975</td>
<td>.722</td>
<td>.106</td>
<td>.179</td>
<td>-0.451</td>
<td>2.402</td>
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<tr>
<td></td>
<td></td>
<td>Unorthodox</td>
<td>.201</td>
<td>.115</td>
<td>.170</td>
<td>.083</td>
<td>-0.026</td>
<td>0.428</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Random</td>
<td>-.256</td>
<td>.103</td>
<td>-.206</td>
<td>.014</td>
<td>-0.459</td>
<td>-0.053</td>
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</table>
After controlling for year in the nursing program, the views of suffering and positive thinking explained 21.9% of the variance in burnout, $F_{(11, 144)} = 3.786$, $p < .001$. The Random view of suffering ($\beta = -0.206$, $p = .014$), the Suffering God view of suffering ($\beta = -0.392$, $p = .014$), and positive thinking ($\beta = -0.280$, $p < .001$) significantly predicted burnout. As the Random view of suffering increases by 1 unit, burnout decreases by 0.256 units (SE = 0.103). As the Suffering God view of suffering increases by 1 unit, burnout decreases by 0.383 units (SE = 0.154). As positive thinking increases...
by 1 unit, burnout decreases by 0.344 units (SE = 0.095). These are the conditional effects, keeping every other predictor constant.

After controlling for age, we fail to reject the null hypothesis that the variance in STS is not explained jointly by the views of suffering and positive thinking, $R^2 = 0.086$, $F (11, 144) = 1.274$, $p = .245$. Only the Unorthodox view of suffering significantly predicted STS ($\beta = 0.232$, $p = .027$). As the Unorthodox view increases by 1 unit, STS increases by 0.347 units (SE = 0.155), keeping other predictors constant.

**Research Question 3: Do nursing students’ positive thinking skills moderate the relationships between different views of suffering and professional quality of life (compassion fatigue and compassion satisfaction)?**

To answer research question 3, interactions between positive thinking and the views of suffering that significantly predicted the dependent variables were added to the main regression models. With each interaction variable, we fail to reject the null hypothesis that the interaction variable’s contribution to the explanation of the variance in the corresponding dependent variable is zero (Table 9). When the interaction of Suffering God x Positive Thinking was added to the main effects model predicting compassion satisfaction, the $R^2$ change was 0.006, $F (1, 144) = 1.213$, $p = .273$. In predicting burnout, adding Suffering God x Positive Thinking produced an $R^2$ change of 0.009, $F (1, 143) = 1.659$, $p = .200$, and the $R^2$ change for the addition of Random x Positive Thinking was 0.000, $F (1, 143) = 0.015$, $p = .904$. Unorthodox x Positive Thinking added to the main effects model predicting secondary traumatic stress produced an $R^2$ change of 0.002, $F (1, 143) = 0.391$, $p = .533$. Positive thinking did not moderate any of the relationships between the views of suffering and the dependent variables.
Table 9

Change Statistics of Moderation Models

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Interaction Variable</th>
<th>β</th>
<th>R² Change</th>
<th>F Change</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compassion Satisfaction</td>
<td>SGxPT</td>
<td>-.406</td>
<td>.006</td>
<td>1.213 (1, 144)</td>
<td>.273</td>
</tr>
<tr>
<td>Burnout</td>
<td>SGxPT</td>
<td>.474</td>
<td>.009</td>
<td>1.659 (1, 143)</td>
<td>.200</td>
</tr>
<tr>
<td>Burnout</td>
<td>RaxPT</td>
<td>-.046</td>
<td>.000</td>
<td>.015 (1, 143)</td>
<td>.904</td>
</tr>
<tr>
<td>Secondary Traumatic Stress</td>
<td>UnxPT</td>
<td>.215</td>
<td>.002</td>
<td>.391 (1, 143)</td>
<td>.533</td>
</tr>
</tbody>
</table>

Note. N=157

Discussion

To date, this is the first study that examined the relationships among views of suffering, positive thinking, and professional quality of life in nursing students. The National Academies of Science, Engineering, and Medicine (2019, p. 249-250, p. 279), note that remarkably limited knowledge exists about the connection between student burnout and patient interactions and this study aligns with their request for researchers to investigate how to improve overall professional well-being for healthcare providers. As exposure to suffering is common when interacting with patients and families, examining how nursing students cope with and make meaning of these experiences is a necessary first step to improve professional quality of life (McMartin & Hall, 2022; VanderWeele, 2019).

Views of suffering and positive thinking are both ways of making meaning out of adversity (McMartin & Hall, 2022; VanderWeele, 2019). In the current study, views of suffering and positive thinking explained 23.8% of the variance in compassion satisfaction and 21.9% of the variance in burnout. Previous research reveals similar findings. Currier et al. found that views of suffering explained 9% of the variance in compassion satisfaction in a sample of 298 chaplains in the United States (Currier et al.,
2017). In a qualitative study of 15 Arab American university students, the students reported that religious views and positive thinking were both important factors in mental health promotion, especially when facing difficulties (Bekhet & Sarsour, 2018). Similarly, spiritual coping strategies predicted better psychological health for 659 undergraduate nursing students in Greece, India, Kenya, and the USA (Felicilda-Reynaldo et al., 2019). In a study including 336 nurses in Turkey, higher scores on the Life Attitudes Profile, which includes being able to create meaning and find greater purpose, predicted lower levels of compassion fatigue (Aslan et al., 2022).

When investigating how individual views of suffering predicted the dependent variables, stronger agreement with the Suffering God belief predicted higher levels of compassion satisfaction and lower levels of burnout in the current study. Previous research also found that the Suffering God belief can be a protective factor. In 2,920 undergraduate students, the Suffering God view was positively correlated with life satisfaction and mental health (Wilt et al., 2016). Exline and colleagues found that higher agreement with the Suffering God view correlated with greater post-traumatic growth in 454 US undergraduate students (Exline et al., 2017). Similarly, in 307 older adults endorsing the Suffering God view had a direct positive effect on mental health (Hale, 2014), and in 233 self-identified religious/spiritual adults, it predicted lower anxiety and COVID-19 distress than in those who viewed God as passive or viewed suffering as random (Wang et al., 2022).

In this study, higher agreement with the Random view of suffering predicted lower levels of burnout, and did not significantly predict compassion satisfaction or secondary traumatic stress. This is not supported by previous research. In a sample of
2,920 undergraduates, the Random view of suffering was negatively correlated with satisfaction with life and mental health; and positively correlated with depression, anxiety, and stress (Wilt et al., 2016). Espousing the random view of suffering was negatively correlated with compassion satisfaction in 298 VA chaplains (Currier et al., 2017), and predicted higher levels of COVID 19 distress compared to the other views of suffering in 233 religious/spiritual adults (Wang et al., 2022).

Greater agreement with the Unorthodox view of suffering predicted higher levels of secondary traumatic stress in the current study, which aligns with previous research in which the Unorthodox view had a direct negative effect on positive states of mind in older adults (Hale, 2014) and correlated positively with depression, anxiety, and stress (Wilt et al., 2016).

Although positive thinking did not moderate any of the relationships between views of suffering and the dependent variables, positive thinking was a significant predictor of increased compassion satisfaction and decreased burnout in this study. Previous studies have found positive thinking to serve as a protective factor. In Iran, 50 nurses participated in a positive thinking training program and their quality of work life improved compared to the control group of 50 nurses (Motamed-Jahromi et al., 2017). Similarly, a convenience sample of 42 novice nurses at one hospital in the northeastern United States participated in a 10-week resilience program in which one of the modules was “positivity: having a positive viewpoint and finding something that went well in any situation” (Irwin et al., 2021, p. 36). The Connor-Davidson Resilience Scale scores increased from 73.38 (SD = 10.57) pre-intervention to 77.64 (SD=10.62, t(41) = −3.219, p = .003) post-intervention.
No prior research exists regarding the views of suffering in the population of undergraduate nursing students. The wide 95% confidence intervals around the coefficients of the statistically significant views of suffering in this study and the proximity of the confidence intervals to 0 (see Table 8) point to the need for continued research to determine the clinical significance of the relationships between views of suffering and professional quality of life in undergraduate nursing students.

This study has several limitations. The non-probability convenience sampling method limits generalizability (Polit & Beck, 2008). Because the survey was voluntary, a nonresponse bias may be present as those who chose to participate might be different from those who did not (Polit & Beck, 2008). The cross-sectional design limits causal inference. However, examining the theoretically proposed relationships at one timepoint will fill a significant gap in the literature due to the dearth of quantitative exploration of the concepts of interest. This study utilized self-report measures, which can result in willful or unintended misrepresentation (Polit & Beck, 2008). However, the concepts of interest in this study are fundamentally subjective and the instruments utilized were chosen because of their previously demonstrated validity and reliability at measuring the concepts. Finally, although the variables for this study were chosen based on a theoretical framework and thorough literature review, the possible effect of unmeasured covariates is a potential limitation on the findings of this study. While the students were asked how many semesters of clinical practicums they had participated in, the specialty of those practicum experiences may impact the outcome variables. For example, placement in an oncology practicum may induce more feelings of compassion satisfaction and compassion fatigue than placement in a more general practice setting. Other personal life
experiences not measured in the current study, such as depression, anxiety, or exposure to stressful or traumatic life events may be other important elements related to students’ levels of compassion fatigue or compassion satisfaction. Future research including these covariates could improve precision.

In conclusion, the results of this study indicate that assessing ways that nursing students view suffering and promoting positive thinking skills within the undergraduate nursing curriculum could improve their professional quality of life. Partnerships between chaplains and nurses may be one way of helping nurses identify if their views of suffering may be protective or risk factors in coping with their exposure to suffering (Charlescraft et al., 2010; Liberman et al., 2020). Additionally, positive thinking training interventions (Bekhet, 2017; Bekhet & Nakhla, 2019) already in existence could be modified for the population of undergraduate nursing students to enhance their resilience. Some studies indicate that benevolent views of suffering may induce optimism, leading to better psychological outcomes (Gall & Bilodeau, 2017; Hale, 2014). Mediation models using the variables in this study may be another way to see how positive thinking could serve as a protective factor for undergraduate nursing students. Although this study focused on nursing students, it would be beneficial to replicate the examination of views of suffering and positive thinking on professional quality of life in nurses of varied levels of experience to promote resilience within the entire nursing discipline. These are all possible avenues for future research.

**Manuscript 2. Psychometric Properties of the Positive Thinking Skills Scale Among Undergraduate Nursing Students**

Undergraduate nursing students are at risk for compassion fatigue related to their work, as they care for suffering patients and families. Negative psychological outcomes,
such as compassion fatigue, are associated with intent to leave the nursing profession (American Nurses Foundation, 2021; Rudman & Gustavsson, 2011; Rudman & Gustavsson, 2012; Rudman et al., 2014; Spence Laschinger et al., 2012; Yu & Lee, 2018). The COVID-19 pandemic has compounded the negative effects of the workplace on the looming nursing shortage. The United States is already facing a nursing shortage (Auerbach et al., 2017; Buerhaus, 2021) and hospital turnover rates have increased since the start of the pandemic (Nursing Solutions, 2022). Investigating ways to increase the resilience of undergraduate nursing students is essential for the individual student’s well-being and the healthcare system dealing with a looming nursing shortage.

The literature points to positive psychological concepts that impact how nursing students cope when exposed to the suffering of patients and families. Hope and optimism have been correlated with decreased levels of burnout and more adaptive coping strategies in new graduate nurses and nursing students (Bodys-Cupak et al., 2021; Dwyer et al., 2019; Fang et al., 2018). Additionally, undergraduate nursing students have reported that positive thinking and positive reframing are ways of coping with exposure to suffering (Wolf et al., 2015). Further quantitative exploration of the role positive thinking plays in adaptation to adversity could be instrumental in promoting the resilience of nursing students as they transition into practice.

The parent study of this psychometric analysis was guided by resilience theory, which posits that resilience is a dynamic process of adapting to adversity (Masten, 2014). Within this process, there is an interplay of protective factors that promote resilience and risk factors that impede the individual’s adaptation. Protective factors can be outside forces or resources, or individual characteristics or assets that promote resilience (Fergus
& Zimmerman, 2005; Masten, 2014). As many risk and protective factors are modifiable, resilience theory provides a model to investigate how to boost individuals’ capacities to thrive in adversity. Within this framework, it was hypothesized in the parent study that positive thinking would serve as a protective factor for nursing students facing the adversity of encountering suffering patients and families (Engbers et al., 2023).

Positive thinking is a cognitive process that aids individuals in inducing positive feelings and emotions (Bekhet & Zauszniewski, 2013). Unlike constructs such as hope and optimism that reflect positive dispositions, positive thinking allows the individual to acknowledge the favorable and adverse aspects of situations and actively attempt to focus on the favorable (Bekhet & Zauszniewski, 2013). Being able to reframe negative experiences can help individuals reduce stress and cope with adversity (Naseem & Khalid, 2010). Positive appraisals have been associated with better emotional well-being in cancer patients (Gall & Bilodeau, 2017). In caregivers of persons with dementia, higher levels of positive thinking decreased the strength of the relationship between self-criticism and depression (Bekhet & Garnier-Villarreal, 2019). Nurses in Iran who participated in a positive thinking intervention reported better quality of work life (Motamed-Jahromi et al., 2017).

Nursing students in particular have reported using positive thinking to cope with some of the difficult situations they encountered in clinical rotations (Rattner, 2020). After Liang and colleagues taught 28 Taiwanese undergraduate nursing students positive thinking as part of a resilience-enhancement intervention, the students reported that using positive thinking allowed them to successfully adapt to adversities in clinical practice (2019). Similarly, 10 first-year students in India participated in a pilot study of a Positive
Emotions Enhancement Program (Kadappuran & Guzman, 2021). Although they were taught how to enhance positive emotions and how to recognize and modify negative emotions, the pre- and post-measurement utilized was an emotional intelligence questionnaire, not a measure related to positive thinking skills.

The literature supports the potential benefit of positive thinking in enhancing resilience for undergraduate nursing students. The Positive Thinking Skills Scale [PTSS] can be a useful tool to both assess and measure development of positive thinking skills in undergraduate nursing students. While the psychometric properties of the PTSS have been measured using the responses of college students from one private university (Matel-Anderson & Bekhet, 2019), to date, this is the first study to examine the reliability and validity of the PTSS specifically in undergraduate nursing students. This is also the first study to measure the psychometrics of the PTSS in a sample that includes students from both public and private universities.

**Methods**

**Design and Sample**

This psychometric analysis utilizes the responses of 157 undergraduate nursing students from two universities in the Midwest collected in a cross-sectional study conducted in 2022 (Engbers et al., 2023). The parent study examined the relationships among nursing students’ views of suffering, positive thinking, and professional quality of life. Participants were junior or senior level nursing students enrolled full-time who were able to read and speak English, had access to the internet to complete the survey, and were currently participating in or had completed at least one semester of clinical practicum.
Data Collection

Approval was obtained prior to data collection from the Institutional Review Board of the university associated with the researchers. A convenience sample was obtained by emailing information about the survey and a Qualtrics link to all students at the two universities who met the inclusion criteria (Engbers et al., 2023). The invitation email and the initial screen of the survey contained information detailing the research study and the voluntary nature of participation. Anonymity was maintained by disassociating the Internet Protocol address to survey responses, obtaining no identifiable information linked to responses, and disseminating results as aggregated data. Upon survey completion, participants had the option to complete a second survey where they provided an email address to obtain a $10 Amazon gift card. No additional incentives were provided for the current analysis.

Instruments

For the parent study, measures of positive thinking, views of suffering, and professional quality of life as well as demographic data were collected. In this study, we examined the correlations between scores on the VOSS (Hale-Smith et al., 2012), the ProQOL (Stamm, 2010), and the PTSS (Bekhet & Zauszniewski, 2013) to establish convergent validity, a type of construct validity.

Positive Thinking Skills Scale

The PTSS was initially developed to measure the fidelity of an intervention designed to teach caregivers of persons with autism eight specific positive thinking skills (Bekhet & Zauszniewski, 2013). The PTSS contains four items related to reframing negative thoughts (e.g. “Transform negative thoughts into positive thoughts”) and four
items related to use of positive thought processes (e.g. “Know how to break a problem into smaller part to be manageable”) (Bekhet & Zauszniewski, 2013, p. 1079). Exploratory factor analysis of the scale revealed a single factor explaining 59% of the variance of the scale items.

Although the initial development was related to measuring intervention fidelity, the creators also noted the potential utility of the scale as an assessment tool in identifying individuals who already have the propensity to maintain a positive outlook versus those who may benefit from an intervention (Bekhet & Zauszniewski, 2013). The PTSS has been used in samples of caregivers of dementia patients (Bekhet & Garnier-Villarreal, 2020), college students (Matel-Anderson et al., 2019), nurses (Tully & Tao, 2019), and nurse leaders (Gottschalk, 2022).

Nursing students rated how frequently they perform each skill on a four-point scale ranging from 0 = never to 3 = always. Summed scores range from zero to 24 with higher scores indicating greater use of positive thinking. Reliability has been consistently high, with average variance extracted of 0.601, maximal reliability of 0.909 (Bekhet & Garnier-Villarreal, 2020) and Cronbach’s alpha of 0.90 (Bekhet & Zauszniewski, 2013). The PTSS has been positively correlated with positive cognitions and negatively correlated with depression, demonstrating construct validity (Bekhet & Zauszniewski, 2013). In the current study, convergent validity will be assessed utilizing correlations between the Views of Suffering Scale [VOSS] (Hale-Smith et al., 2012) and the Professional Quality of Life, Version V [ProQOL] (Stamm, 2010).

**Construct Validity: Professional Quality of Life**
The Professional Quality of Life scale, Version 5 [ProQOL] consists of three 10-item subscales: compassion satisfaction, secondary traumatic stress, and burnout (Stamm, 2010). The compassion satisfaction subscale contains items that represent positive feelings about the participant’s role as a nursing student and pleasure derived from helping others. Secondary traumatic stress and burnout are negative outcomes related to working as a helper that together compose compassion fatigue (Stamm, 2010). The secondary traumatic stress subscale items reflect the development of fear associated with exposure to others’ trauma, or a need to actively avoid thinking about the trauma of those you have helped, while burnout subscale items depict feelings of hopelessness in performing work as a caregiver. Respondents choose how frequently they experienced these things in the last 30 days on a Likert scale (1=Never to 5=Very Often) (Stamm, 2010), and total scores are calculated for each subscale. For each subscale, 0-22 indicates low risk, 23-41 indicates moderate risk, and 42 and above indicates high risk (Stamm, 2010). Used in over 200 published studies, the ProQOL and has demonstrated construct validity and discriminant validity (Ang et al., 2020; Geoffrion et al., 2019; Hemsworth et al., 2018), and each subscale has demonstrated good reliability (CS: α = 0.88; BO: α = 0.75; STS: α = 0.81) (Stamm, 2010). Previous studies assessing relationships between psychological capital and professional quality of life provide evidence that optimism has a negative relationship with elements of compassion fatigue (Dwyer et al., 2019).

Theoretically, it would be anticipated that positive thinking skills would act as a protective factor (Masten, 2014), and scores on the PTSS would be positively correlated with compassion satisfaction and negatively correlated with compassion fatigue.

*Construct Validity: Views of Suffering Scale*
Hale-Smith and colleagues developed the Views of Suffering Scale (VOSS) based on the most common views of suffering represented in North America (Hale-Smith et al., 2012). Benevolent theodicies, or attempts to reconcile orthodox views of a God who is all-knowing and all-good with the existence of suffering and evil (Brown, 1999; Hale-Smith et al., 2012), are depicted in six of the 10 subscales. Other commonly held belief systems in America, including Buddhism, Hinduism, Atheism, and unorthodox theism, are represented in the other four subscales (Hale-Smith et al., 2012). These nonbenevolent views do not assume the presence of an omniscient, omnibenevolent, and omnipotent deity in the midst of suffering. Each subscale contains three items rated on a six-point Likert scale ranging from 1 = “strongly disagree” to 6 = “strongly agree.” Higher total scores for each subscale indicate a participant’s higher level of agreement with that view of suffering, with total subscale scores ranging from three to 18. Cronbach’s alphas were 0.7 to 0.9 for each VOSS subscale (Hale-Smith et al., 2012).

Nonbenevolent views of suffering have been positively correlated with depression, anxiety, and stress and negatively correlated with optimism (Hale, 2014), whereas positive religious appraisals of suffering have been found to correlate with emotional well-being and positive reframing (Gall & Bilodeau, 2017). Resilience theory also posits that having a way to make meaning from adversity promotes positive outcomes (Masten, 2014). For this study, convergent validity of the PTSS would be demonstrated with positive correlations with the group of benevolent views of suffering and negative correlations with nonbenevolent views of suffering.

**Data Analysis**
Data analysis was performed using IBM SPSS Statistics, version 28.0. Descriptive statistics were performed to assess the demographic variables and main study variables. Internal consistency and homogeneity of the PTSS were evaluated via Cronbach’s alpha, McDonald’s omega, inter-item correlations, and item-to-total scale correlations. Principal component analysis was performed to assess construct validity and identify the factor structure of the PTSS. Correlations between the total scores on the PTSS and measures of compassion satisfaction, compassion fatigue, and views of suffering were performed to examine convergent validity.

**Results**

Eighty-seven of the undergraduate nursing students attended a mid-sized Catholic university and 70 were enrolled at a large public university. Their ages ranged from 20 to 46 years (M=21.85, SD = 3.21). The majority of students indicated they were White (74.5%), and female (95.5%), with a more even distribution across year in the nursing program and number of semesters of clinical practicums (Engbers et al., 2023).

**Reliability**

Cronbach’s alpha for PTSS in the sample of 157 undergraduate nursing students was 0.824 indicating good internal consistency. McDonald’s omega was 0.822 indicating good reliability without assuming essential tau equivalence. The inter-item correlations ranged from 0.201 to 0.582, with 71% of the 28 inter-item correlations over 0.3 (Table 10). Deletion of any of the items would not improve the scale alpha (Table 11). All corrected item-to-total scale correlations fell within the desired range of 0.3 to 0.7 (Ferketich, 1991 (Table 2). This suggests that, while the scale measures diverse aspects of positive thinking, homogeneity of the PTSS is also demonstrated.
Table 10

*Positive Thinking Skills Scale Inter-Item Correlations*

<table>
<thead>
<tr>
<th></th>
<th>PTSS 2</th>
<th>PTSS 3</th>
<th>PTSS 4</th>
<th>PTSS 5</th>
<th>PTSS 6</th>
<th>PTSS 7</th>
<th>PTSS 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSS 1</td>
<td>.416</td>
<td>.451</td>
<td>.339</td>
<td>.252</td>
<td>.434</td>
<td>.431</td>
<td>.582</td>
</tr>
<tr>
<td>PTSS 2</td>
<td>.327</td>
<td>.279</td>
<td>.340</td>
<td>.542</td>
<td>.402</td>
<td>.458</td>
<td></td>
</tr>
<tr>
<td>PTSS 3</td>
<td>.366</td>
<td>.233</td>
<td>.201</td>
<td>.499</td>
<td>.396</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSS 4</td>
<td>.206</td>
<td>.220</td>
<td>.419</td>
<td>.256</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSS 5</td>
<td>.359</td>
<td>.267</td>
<td>.332</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSS 6</td>
<td></td>
<td>.443</td>
<td>.463</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTSS 7</td>
<td></td>
<td></td>
<td>.465</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11

*Positive Thinking Skills Scale Item Analysis*

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Alpha if item deleted</th>
<th>Corrected item-to-total score correlations</th>
<th>Factor loadings</th>
<th>Communality values</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSS 1</td>
<td>Transform negative thoughts</td>
<td>0.793</td>
<td>0.619</td>
<td>0.743</td>
<td>0.552</td>
</tr>
<tr>
<td>PTSS 2</td>
<td>Highlight positive aspects</td>
<td>0.798</td>
<td>0.586</td>
<td>0.708</td>
<td>0.502</td>
</tr>
<tr>
<td>PTSS 3</td>
<td>Interrupt pessimistic thoughts</td>
<td>0.808</td>
<td>0.518</td>
<td>0.643</td>
<td>0.414</td>
</tr>
<tr>
<td>PTSS 4</td>
<td>Note the need to practice</td>
<td>0.819</td>
<td>0.430</td>
<td>0.549</td>
<td>0.301</td>
</tr>
<tr>
<td>PTSS 5</td>
<td>Know how to break a problem</td>
<td>0.822</td>
<td>0.408</td>
<td>0.526</td>
<td>0.277</td>
</tr>
<tr>
<td>PTSS 6</td>
<td>Initiate optimistic beliefs</td>
<td>0.802</td>
<td>0.559</td>
<td>0.690</td>
<td>0.477</td>
</tr>
<tr>
<td>PTSS 7</td>
<td>Nurture ways to challenge</td>
<td>0.793</td>
<td>0.626</td>
<td>0.740</td>
<td>0.548</td>
</tr>
<tr>
<td>PTSS 8</td>
<td>Generate positive feelings</td>
<td>0.792</td>
<td>0.631</td>
<td>0.754</td>
<td>0.569</td>
</tr>
</tbody>
</table>

Dimensionality and Construct Validity

The sample of 157 undergraduate nursing students meets the recommended 10 participants per item threshold to conduct principal component analysis for the 8-item
PTSS (Nunnally & Bernstein, 1994). The Kaiser-Meyer-Olkin value of 0.844 also suggests sample size adequacy. According to Tabachnick and Fidell, (2013) several of the intercorrelations among scale items should be over 0.3 for principle component analysis to be appropriate, and the correlation matrix meets this suggestion (Table 10). Additionally, Bartlett’s test of sphericity indicated that we reject the null hypothesis of the correlations in the matrix being zero ($X^2 = 369.904; p < .001$).

To determine the minimum number of factors that can best explain the interrelationships and variance in the scale items, principal component analysis was conducted. The extraction resulted in two factors with an eigenvalue greater than one, however, the scree plot clearly indicated a one-factor structure (Figure 9). Parallel analysis was performed to determine whether a one or two factor structure best represented the data. Using 100 replications of a data set with eight variables and 157 subjects, average eigenvalues for these random data sets are used to determine if the eigenvalues obtained in the analysis of the PTSS are greater than those obtained by chance (Tabachnick & Fidell, 2013). This analysis confirms the subjective interpretation of the scree plot and indicates that only one factor should be retained. After repeating the principal component analysis forcing a one-factor solution, the factor explained 45.48% of the variance in scale items (Table 11). Factor loadings ranged from 0.526 to 0.754, exceeding the minimum criterion of 0.3 (Nunnally & Bernstein, 1994; Tabachnick & Fidell, 2013) (Table 11).

Significant positive correlations were found between the PTSS and the Compassion Satisfaction subscale of the ProQOL and the combined Benevolent Views of Suffering subscales, as expected, supporting convergent validity (Table 12). The
correlation between the PTSS and the combined Nonbenevolent Views of Suffering subscales was negative, but not statistically significant. There was a significant negative correlation between the PTSS and the combined Compassion Fatigue subscales of the ProQOL which also supports convergent validity.

**Figure 9**

*Scree Plot of Factor Structure of the Positive Thinking Skills Scale*

![Scree Plot](image)

**Table 12**

*Convergent Validity Measures*

<table>
<thead>
<tr>
<th></th>
<th>Nonbenevolent VOS</th>
<th>PTSS</th>
<th>Compassion Satisfaction</th>
<th>Compassion Fatigue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benevolent VOS</td>
<td>0.079</td>
<td>0.202*</td>
<td>0.274*</td>
<td>-0.015</td>
</tr>
<tr>
<td>Nonbenevolent VOS</td>
<td></td>
<td>-0.012</td>
<td>0.084</td>
<td>0.083</td>
</tr>
<tr>
<td>PTSS</td>
<td></td>
<td></td>
<td>0.358*</td>
<td>-0.221*</td>
</tr>
<tr>
<td>Compassion Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td>-0.417*</td>
</tr>
</tbody>
</table>

*Note.* VOS=Views of Suffering; PTSS=Positive Thinking Skills Scale

*p < .05
Discussion

This is the first study to investigate the validity and reliability of the PTSS among undergraduate nursing students. Reliability of the PTSS was demonstrated in this population as Cronbach’s alpha was 0.824 and McDonald’s omega was 0.820. This confirms the internal consistency and reliability of this scale reported in previous studies. Cronbach’s alphas of 0.86 among a sample of college students and 0.89 among acute care nurses have been reported when using the PTSS (Matel-Anderson & Bekhet, 2019; Tully & Tao, 2019). Maximal reliability for the PTSS in nurse leaders was 0.76 (Gottschalk, 2022).

All eight items of the PTSS had item-to-total correlations in this study that fell in the ideal range of 0.3 to 0.7 (Ferketich, 1991). This finding suggests that the items measure diverse aspects of positive thinking skills, while also supporting the overall homogeneity of the PTSS. The inter-item correlations, ranging from 0.201 to 0.582, did not indicate any item redundancy. Although 29% of the inter-item correlations fell outside the suggested range of 0.3-0.7, removing any of the items would not have increased Cronbach’s alpha. The correlations outside of the range may be reflective of the particular facets of positive thinking skills present in this sample, and may indicate that the PTSS is sensitive to a broad set of positive thinking skills.

The relationships and variance of the items of the PTSS were best explained by a one-factor structure in the current study, supporting the original structure of the measure (Bekhet & Zauszniewski, 2013). In the one-factor solution, the high factor loadings suggest that the items contributed to the component being measured. Convergent validity of the PTSS was also supported in this sample of undergraduate nursing students.
Resilience theory suggests that positive thinking would be correlated with compassion satisfaction, which indicates adaptation to adversity, and negatively correlated with compassion fatigue, which indicates lack of adaptation. Previous research has also shown a relationship between positive religious appraisals of suffering and positive reframing (Gall & Bilodeau, 2017). In the current study, scores on the PTSS correlated positively with compassion satisfaction and benevolent views of suffering, and negatively with compassion satisfaction. PTSS was negatively correlated with nonbenevolent views of suffering, but the relationship was not significant. Of note, in previous research nonbenevolent views of suffering were negatively correlated with optimism (Hale, 2014). Optimism, however, is a dispositional construct instead of a skill that can be taught, so the results of the current study may illuminate this difference. Overall, convergent validity of the PTSS is supported through significant relationships with theoretically related constructs in the expected directions.

Limitations of this study include that the responses used in this analysis were from a cross-sectional design, so test-retest reliability was not able to be assessed. Additionally, a majority of the sample were female and white, which, although mirroring the demographics of the nursing discipline (Smiley et al., 2021), does limit generalizability. Despite these limitations, the results of this study shows that the PTSS is a valid and reliable tool to measure positive thinking skills in undergraduate nursing students.

As positive thinking skills have been shown to be significant predictors of professional quality of life in undergraduate nursing students (Engbers et al., 2023), utilizing this psychometrically sound tool to assess these skills can benefit the individual
students and the nursing discipline as a whole. Inpatient hospital nurses in Iran reported their positive thinking skills improved after participating in a social media intervention (Motamed-Jahromi et al., 2017). But the impact of this training on positive thinking skills was only captured with qualitative data. In two pilot studies, positive thinking skills training interventions significantly increased the scores on the PTSS for a group of 20 first generation Middle Eastern immigrants and a group of 73 caregivers of persons with autism (Bekhet, 2017; Bekhet & Nakhla, 2019). Adapting this training for undergraduate nursing students and offering it as an intra- or extra-curricular module can give undergraduate nursing students the tools they need to adapt to their role as a professional caregiver of patients and families. The PTSS can be used to assess which students may need this training, and then evaluate the impact of the training. Future retention of these undergraduate students within the nursing discipline can be benefited by bolstering their resilience through fostering positive thinking skills (Kim & Yoo, 2018; Thomas & Revell, 2016).

In conclusion, this study confirmed the validity, reliability, and one-factor structure of the PTSS for use among undergraduate nursing students. This tool has the potential to be implemented as an assessment tool to determine which undergraduate nursing students may benefit from positive thinking skills training, and then evaluate the impact of that training. Assessing undergraduate nursing students’ positive thinking skills with the PTSS can aid in their adaptation to the professional nursing role.

**Conclusion**

After performing multiple regressions, findings indicate that the Suffering God, Random, and Unorthodox views of suffering and positive thinking have direct effects on
one or more aspects of professional quality of life in undergraduate nursing students. However, positive thinking did not moderate any of the relationships between views of suffering and professional quality of life. Also, the findings of the study indicate that the Positive Thinking Skills Scale is a valid and reliable instrument to assess positive thinking skills in undergraduate nursing students.
CHAPTER V: CONCLUSIONS, DISCUSSION, AND FUTURE CONSIDERATIONS

Introduction

In this chapter, the findings of this study will be reviewed. There were three research aims, and each will be explored along with the corresponding conclusions. Implications of the study to the nursing discipline will be discussed along with limitations and recommendations for future research related to the study findings. Finally, an overall conclusion will be presented.

Summary of Findings and Conclusions

Aim 1: To examine the relationships between views of suffering and compassion fatigue and compassion satisfaction in undergraduate nursing students.

Aim 2: To examine the relationship between positive thinking skills and compassion fatigue and compassion satisfaction in undergraduate nursing students.

For the first aim, it was hypothesized that benevolent views of suffering would be positively related to compassion satisfaction and negatively related to compassion fatigue (burnout and secondary traumatic stress). Further, it was hypothesized that nonbenevolent views of suffering would be negatively related to compassion satisfaction and positively related to compassion fatigue. For Aim 2, it was hypothesized that positive thinking skills would be positively related to compassion satisfaction and negatively related to compassion fatigue. The findings from this study partially support these hypotheses.

Altogether, the views of suffering and positive thinking explained 23.8% of the variance in compassion satisfaction, $F(11, 145) = 4.121, p < .001$. This corresponds with previous research findings in which Currier and colleagues (2017) found that views of
suffering explained 9% of the variance in compassion satisfaction among chaplains in the United States and religious views and positive thinking were both important components in promoting mental health for 15 Arab American university students (Bekhet & Sarsour, 2018). In the current study, 21.9% of the variance in burnout \( (F (11, 144) = 3.786, p < .001) \) was explained by views of suffering and positive thinking. However, we fail to reject the null hypothesis that the views of suffering and positive thinking do not explain the variance in secondary traumatic stress \( (R^2 = 0.086, F (11, 144) = 1.274, p = .245) \). This partially supports the hypothesis related to compassion fatigue. While limited research exists related to views of suffering, research related to similar concepts revealed that higher scores on the Life Attitudes Profile, which includes approaches to life events of creating meaning and finding greater purpose, predicted lower levels of compassion fatigue in nurses in Turkey (Aslan et al., 2022).

The Suffering God view, a benevolent view of suffering, had a significant positive effect on compassion satisfaction, holding other predictors constant \( (β = 0.349, p = .025) \). Similarly, previous research found that the higher endorsement of the Suffering God view was positively correlated with life satisfaction, mental health, and post-traumatic growth in undergraduate students (Exline et al., 2017). In the current study, none of the nonbenevolent views of suffering had significant main effects on compassion satisfaction. In predicting compassion fatigue, the Suffering God view had a significant negative effect on burnout \( (β = -0.392, p = .014) \). This finding is similar to previous research showing a negative linear relationship between endorsement of the Suffering God view and anxiety and COVID-19 distress among religious/spiritual adults (Wang et al., 2022).
The Random view, a nonbenevolent view of suffering, had a significant negative effect on burnout ($\beta = -0.206, p = .014$) which does not support the hypothesized relationship and is not supported by previous research. In a sample of 2,920 undergraduates, Wilt and colleagues (2016) found that higher agreement with the Random view of suffering was positively correlated with depression, anxiety, and stress and negatively correlated with satisfaction with life and mental health.

The Unorthodox view, a nonbenevolent view of suffering, had a significant positive effect on secondary traumatic stress ($\beta = 0.232, p = .027$), which supports the hypothesized relationship. This also aligns with previous research findings in which the Unorthodox view of suffering had a negative effect on positive states of mind in older adults (Hale, 2014), and correlated positively with depression, anxiety, and stress (Wilt et al., 2016). None of the benevolent views of suffering predicted secondary traumatic stress.

Positive thinking skills was a significant positive predictor of compassion satisfaction ($\beta = 0.309, p < .001$), and a significant negative predictor of burnout ($\beta = -0.280, p < .001$) holding other predictors constant. However, we failed to reject the null hypothesis that positive thinking skills has no linear relationship with secondary traumatic stress. Overall, these findings corroborate similar findings in which Mason (2018) found that nursing students who had more optimistic attitudes as measured by the Life Attitudes Profile – Revised [LAP-R] scored higher on the compassion satisfaction subscale of the Professional Quality of Life Scale, Version V [ProQOL], while those who had more pessimistic attitudes as measured by the LAP-R scored higher on the compassion fatigue subscales of the ProQOL.
Aim 3: To determine if positive thinking skills moderate the relationships between different views of suffering and compassion fatigue and compassion satisfaction in undergraduate nursing students.

The hypothesis for Aim 3 postulated that positive thinking skills would moderate the relationships between views of suffering and compassion fatigue and compassion satisfaction. Specifically, it was expected that positive thinking would serve as a protective factor in the relationships and high levels of positive thinking would reduce the negative impact of views of suffering on professional quality of life while increasing any positive impact. In predicting compassion satisfaction, when the interaction of Suffering God x Positive Thinking was added to the main effects model the $R^2$ change was 0.006, $F(1, 144) = 1.213$, $p = .273$. In the model predicting burnout, adding Suffering God x Positive Thinking produced an $R^2$ change of 0.009, $F(1, 143) = 1.659$, $p = .200$, and the $R^2$ change for the addition of Random x Positive Thinking was 0.000, $F(1, 143) = 0.015$, $p = .904$. When Unorthodox x Positive Thinking was added to the main effects model predicting secondary traumatic stress, the $R^2$ change was 0.002, $F(1, 143) = 0.391$, $p = .533$. In all cases, we fail to reject the null hypotheses that the interaction variable’s contribution to the explanation of the variance in the corresponding dependent variable is zero.

Discussion

To date, this is the only study found to examine the moderating effects of positive thinking on the relationships between views of suffering and professional quality of life in undergraduate nursing students. Further, this is the first study known to use the PTSS in undergraduate nursing students, and in a sample including undergraduate students from
both public and private universities. Significant relationships were found between three views of suffering and the dependent variables, and between positive thinking and compassion satisfaction and burnout, leading to the rejection of null hypotheses related to the first two aims of the study. However, the width and proximity to 0 of the 95% confidence intervals of the coefficients of the views of suffering that were statistically significant in this study point to the need for continued research to determine the clinical significance of the relationships between views of suffering and professional quality of life in undergraduate nursing students. No notable moderating effect of positive thinking was found on the significant relationships between views of suffering and the dependent variables, leading to a failure to reject the null hypothesis related to aim three.

The relationships discovered in this study are partially supported in previous research. In qualitative investigations, nursing students have reported that spiritual views have helped them cope with the suffering they see in their clinical encounters (Cilliers & Terblanche, 2014; Eifried, 2003; Van Rooyen et al., 2005). Traits such as optimism and resilience have shown to protect nursing students from burnout and promote compassion satisfaction (Cao et al., 2021; Heritage et al., 2019; McGowan & Murray, 2016; Rees et al., 2016). While nursing students have reported using positive reframing and positive thinking to cope with challenges (Kadappuran & Guzman, 2021; Liang et al., 2019; Wolf et al., 2015; Yang et al., 2017), measurement of these skills is lacking in the literature.

This study builds on the previous studies by adding the quantitative exploration of the views of suffering on the professional quality of life of undergraduate nursing students. The use of positive thinking, a skill that can be learned, as the concept of interest in this study is similar and yet distinct from previous research estimating the
impact of dispositional traits such as resilience and optimism on the psychological adaptation of undergraduate nursing students to their professional role. The utilization of the PTSS, a psychometric tool, to quantify the role that positive thinking plays in promoting undergraduate nursing students’ professional quality of life is a novel contribution to this body of literature.

Along with clarifying the relationships among the study variables, this research also investigated the utility of the PTSS with undergraduate nursing students. While the scale has previously been used among college students from a private university, frontline nurses, and nursing leaders (Gottschalk, 2022; Matel-Anderson et al., 2019; Tully & Tao, 2019), this is the first known study to apply this tool to undergraduate nursing students from both private and public universities. Cronbach’s alpha in this sample of undergraduate nursing students was 0.824, and McDonald’s omega was 0.822. Statistically significant correlations were found in the expected directions between theoretically related concepts: benevolent views of suffering ($r = 0.202$, $p < .05$), compassion satisfaction ($r = 0.358$, $p < .05$), and compassion fatigue ($r = -0.221$, $p < .05$). This study demonstrated the validity and reliability of the PTSS for use in this population.

**Nursing Implications**

The literature suggests that nursing students experience compassion fatigue and expect it to intensify as they progress in their nursing career despite the satisfaction they feel from helping others (Michalec et al., 2013; Saber et al., 2016). The results of this study provide insight into ways of mitigating the negative sequelae and promoting the benefits of caring for suffering patients and families. Assessing nursing students’ views
of suffering can help identify existing protective or risk factors in coping with exposure to suffering. Encouraging interdisciplinary relationships, particularly between student nurses and chaplains, may help with this assessment and lead to better management of the students’ exposure to suffering (Liberman et al., 2020). Ensuring that undergraduate nursing students have the opportunity to learn positive thinking skills is another way to promote their professional quality of life. The PTSS can be used to assess positive thinking skills, as well as guide interventions instructing undergraduate nursing students in these skills. Bekhet (2017) created a cognitive-behaviorally based positive thinking training intervention that corresponds to the items of the PTSS and uses the acronym THINKING to chunk the content into a reasonable amount to remember. Tailoring this intervention to fit within the undergraduate nursing curriculum would ensure that all graduates have a tool to promote their professional quality of life and sustain themselves once they enter the nursing discipline.

**Limitations**

Within the sampling frame of all full-time undergraduate nursing students at two Midwestern universities, self-selection into the study due to the voluntary nature of the survey may have produced a nonresponse bias. Additionally, the non-probability convenience sampling does limit generalizability. Although the relationships examined in this study were postulated based on a theoretical framework, the cross-sectional design limits causal inference. Finally, the setting of the students’ clinical practicum placements, for example, oncology versus general practice, was not gathered in the current study and may be an informative covariate in future investigations due to the possible impact on compassion satisfaction and compassion fatigue.
Suggestions for Future Research

Further investigation of the relationships in this study including possible unmeasured covariates such as type of clinical setting the students have experienced, anxiety and depression levels (Charlton & Wofford, 2022), or any personal stressful or traumatic life events could improve precision. Additionally, although individuals in Generation Z still choose nursing to help others (Hampton & Welsh, 2019), studies have shown that higher levels of burnout and lower levels of work engagement may exist in this age group (Cigna International, 2022). Future studies could investigate generational differences in the variables of interest in this study.

The results of this study suggest that interventions to foster better interdisciplinary relationships between nursing students and chaplains and interventions to promote positive thinking skills in nursing students could be important interventional avenues for improving professional quality of life in this population. Although the literature regarding nursing students grappling with exposure to suffering pointed to positive thinking and religious/spiritual framing of suffering as disconnected forms of coping, a few studies of other populations suggest that benevolent views of suffering may give rise to optimism, which then leads to better psychological outcomes (Gall & Bilodeau, 2017; Hale, 2014). Utilizing mediation models with the variables in this study to investigate if benevolent views of suffering might have an indirect effect on the dependent variables through positive thinking may be another way to investigate how positive thinking serves as a protective factor for undergraduate nursing students. Finally, although this study focused on nursing students, it would be beneficial to replicate the examination of views of
suffering and positive thinking on professional quality of life in nurses of varied levels of experience to promote resilience within the entire nursing discipline.

**Conclusion**

The findings of this study revealed significant relationships between undergraduate nursing students’ views of suffering, positive thinking, and professional quality of life. This was also the first study to utilize the PTSS in a sample of undergraduate nursing students from both public and private universities. While positive thinking did not moderate the relationships between views of suffering and professional quality of life as hypothesized, it was a significant predictor of both compassion satisfaction and burnout. Most of the relationships found in this study align with previous research and build on the body of knowledge related to the resilience of nursing students. Intervening with positive thinking skills interventions with nursing students, using mediation models with these variables in this population, and examining the relationships of these variables in the broader population of nurses are all recommendations for future research.
BIBLIOGRAPHY


https://doi.org/10.1016/j.ijnurstu.2010.07.012

https://doi.org/10.1016/j.ijnurstu.2012.03.010

https://doi.org/10.1016/j.ijnurstu.2013.09.012


Appendix A

IRB Exempt Status

Date: 07/19/2022  
HR#4199  
Principal Investigator: Dr. Abir Bekhet  
Student Principal Investigator: Ruth Engbers  
Department: Nursing  
Study Title: Examining Relationships Among Nursing Students' Views of Suffering, Positive Thinking, and Professional Quality of Life

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<th>New Study Approval</th>
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<td>☐ This protocol has been approved as minimal risk under Expedited category # as governed by 45 CFR 46.110 on [DATE].</td>
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<td>☐ This protocol has been reviewed by the Institutional Review Board on [date] and approved as:</td>
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Please note that in-person research must follow the MU research ramp-up plan.

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<td>☒ Please use the final version of the exempt information sheet or consent form submitted with this protocol in Kuali. Contact the IRB office if you have questions about which document you should be using.</td>
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<td>☐ The IRB approved informed consent form can be found in the approved Kuali protocol. Make sure to download and use the stamped copies of this form when enrolling research participants. Each research participant should receive a copy of the consent form.</td>
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<td>☐ This study has been approved for waiver of documentation of consent under 45 CFR 46.117(c)(1) or (2) of (3). Please use the approved consent information sheet with your participants.</td>
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<td>☐ This study has been approved for alteration or waiving of consent under 45 CFR 46.116(d).</td>
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<td>☐ The IRB approved recruitment materials can be found in the approved Kuali protocol. Use stamped copies of these documents for recruitment purposes.</td>
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<td>☐ This study involves students collecting data through surveys- please review the MU Questionnaire/Survey Procedures: <a href="http://www.marquette.edu/osp/policies/survey_procedure.shtml">http://www.marquette.edu/osp/policies/survey_procedure.shtml</a></td>
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<td>☐ This study involves recruitment emails for online surveys to be sent to 100 or more Marquette students, faculty or staff. Please review the website of the Online Survey Review Group: <a href="http://www.marquette.edu/onlinesurveys/">http://www.marquette.edu/onlinesurveys/</a></td>
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<td>This study involves accessing PHI from a HIPAA covered entity. The IRB has granted approval to access the following protected health information for the purpose of this study:</td>
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<td>A HIPAA Authorization form has been approved and should be used with study subjects.</td>
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<td>A waiver of authorization has been approved for this study.</td>
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All changes to this protocol must be reviewed and approved by the IRB before being initiated, except when necessary to eliminate apparent immediate hazards to the human subjects. Please submit all amendment requests using the Kuali system.

If there are any adverse events or deviations from the approved protocol, please notify the Marquette University IRB immediately.

If this study is a federally funded clinical trial, the PI is responsible for registering this study on clinicaltrials.gov and submitting a final copy of the consent form and all required documentation during the life of the study.

A Request to Close must be submitted once this research project is complete. The form should be submitted in a timely fashion, and must be received no later than the protocol expiration date.

The principal investigator is responsible for ensuring that all study staff receive appropriate training in the ethical guidelines of conducting human subjects research and documenting that this requirement has been met.

Unless a separate reliance agreement is in place, please note that approval of a study with non-Marquette investigators does not indicate that Marquette University is assuming oversight for the research activities occurring outside of Marquette’s purview.

Please contact the Office of Research Compliance with any further questions. Thank you for your cooperation and best wishes for a successful project.

Jessica Rice, MPH, CIP
IRB Manager
Office of Research Compliance

JRice
Appendix B

Informed Consent

Thank you for agreeing to participate in this study titled “Examining relationships among nursing students' views of suffering, positive thinking, and professional quality of life.”

IRB approval for this study has been obtained through Marquette University.
If you have questions, please email the lead researcher Ruth Engbers at ruth.engbers@marquette.edu.

The purpose of this study is to investigate relationships between nursing students' views of suffering, positive thinking, and compassion fatigue and compassion satisfaction.

Survey Completion time is estimated to be 20 minutes.

Conditions of the study:
1. Confidentiality will be maintained. No personal identifiers will be connected to survey responses.
2. Your participation in the survey is completely voluntary.
3. You have the right to withdraw from the survey at any time.
4. Results of surveys will be presented in aggregate format so results will not be traced to any individual.

Benefits to participants:
1. Indirect benefit of providing insight into future interventions aimed at promoting nursing students’ coping with caring for suffering patients and families.
2. $10.00 Amazon gift card

Risks to participants:
1. There are no known physical risks to participants.
2. The following surveys have been used in previous studies without psychological stress to participants. However, if you experience any distress while responding to questionnaire items, some available resources are:

UWM University Counseling Services
Hours: Monday – Thursday 8:00am – 4:45pm & Friday 9:00am- 4:45pm
Crisis hours are Monday – Friday 9:00am – 4:00pm.
Phone: (414) 229-4133 Fax: (414) 229-3381
If you have a medical or mental health emergency when our operations are closed, call 911 or UWM Police (414) 229-9911, for immediate assistance.

The Marquette University Counseling Center
Holthusen Hall, Room 204 1324 W. Wisconsin Ave.
Phone: (414) 288-7172
Clinic Hours: 8 a.m. to 4:30 p.m. You can come in any time for a crisis appointment while the center is open.
Counselor on call overnight, holidays, and weekends. If you want to speak with the counselor on call, please contact MUPD at (414) 288-6800, and they can get you in touch with the counselor.

Marquette University Campus Ministry
Alumni Memorial Union, 236
Phone: (414) 288-6873
Hours: 8 a.m. until 4:30 p.m.

Consent: By starting the survey, I, the participant, agree that I have read and understand the above information, have no questions, and am voluntarily starting the survey and implying informed consent.
Appendix C

Demographic Questionnaire

Q85 What is your age in years? Please click up or down.

________________________________________________________________

Q86 What is your race/ethnicity?

☐ White/Caucasian (1)

☐ Black/African American (2)

☐ American Indian (3)

☐ Asian/Pacific Islander (4)

☐ Hispanic/Latino (5)

☐ Biracial (6)

☐ Other/Please specify (7) _______________________________________

Q84 What college of nursing do you attend?

☐ Marquette (1)

☐ UWM (2)
Q85 What year are you in the nursing program?

- Junior (1)
- Senior (2)

Q86 How many semesters of clinical rotations have you participated in (include the current semester if participating in clinical hours)?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 or more (4)
Q87 What religious denomination are you most closely affiliated with?

- Catholic (1)
- Protestant (2)
- Mormon (3)
- Orthodox Christian (4)
- Jehovah's Witness (5)
- Other Christian (6)
- Jewish (7)
- Muslim (8)
- Buddhist (9)
- Hindu (10)
- Christian Scientist (11)
- Atheist (12)
- Agnostic (13)
- Nothing in particular (14)