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Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Nicole B. Fortin

has been found to be complete and satisfactory in all respects,
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the review committee have been made.

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2019

Abstract

Exploring Prayer Functions and Posttraumatic Growth
Among Informal Caregivers in Hospice Settings

by

Nicole B. Fortin

MA, University of Massachusetts, Boston, 2005

BS, DePaul University, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Psychology

Walden University

August 2019

Abstract

Posttraumatic growth is a positive psychological transformation resulting from the struggle to cope with a challenging life event. There is a significant association between prayer coping functions and posttraumatic growth, but its process remains unclear and studies on informal hospice caregivers are scarce. The purpose of this quantitative, correlational, cross-sectional study was to explore the relationship between prayer functions and posttraumatic growth among informal caregivers while considering differences due to the caregiving environment and prayer practices. The shattered assumptions theory and model of growth in grief were used as a theoretical framework to evaluate the relationship between prayer functions, using the Prayer Functions Scale, and posttraumatic growth, using the Posttraumatic Growth Inventory, among 255 informal caregivers who cared for their terminally ill loved ones in home or hospital hospice settings. Hierarchical linear regression revealed a statistically significant relationship between the prayer functions subscale, praying for calm and focus, and overall posttraumatic growth, while controlling for age group and gender. Multivariate test results indicated statistically significant differences between a) home and hospital informal hospice caregivers in posttraumatic growth subscales: new possibilities, spiritual change, and appreciation of life, and b) informal hospice caregivers who prayed and did not pray in posttraumatic growth subscales: relating to others, new possibilities, and spiritual change. These results may afford healthcare providers, researchers, and policy makers a deeper awareness of prayer functions that encourage posttraumatic growth and contribute to positive social change.

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Dedication

This study is dedicated to my father, Gabriel Maurice Fortin. He gave me a love for learning and provided me with my first experience in informal hospice caregiving. I had the privilege of caring for him at first in the hospital after his diagnosis of cancer and then at home on hospice. Throughout my life his lessons were great, but none more important than when he was dying. Life was precious to him and he lived life to the fullest until his last breath. He wanted to see me finish my degree and I was so disappointed when he died and realized that he would not be at my graduation. I did not know at the time, however, that I could only finish after his death. Thank you, Dad. I love you ... forever!

This study is dedicated to my mother, Lois Beverly (Vivier) Fortin. She gave me a love for life and people. My mother was a woman like no other. There was no greater gift than being loved by her and I treasure it every day. I still remember that warm feeling of comfort when walking into the room and seeing her face light up. Only she could do that. My mother was so important to me and remains such a powerful influence in my life. It is because of what she taught me about love that inspired my research into improving the patient/caregiver bond. Thank you, Mom. I love you, for infinity!

This study was also conducted on behalf of the many informal hospice caregivers who are trying to provide the best end of life care for their terminally ill loved ones. This study's findings highlight the value of prayer in the informal caregiver's lives that may encourage them in their struggles to cope with and grow from the dying and death of their loved ones. God Bless.

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Chapter 1: Introduction to the Study

Introduction

Throughout history, attempts to understand the meaning of human suffering have been recognized in religion, literature, and philosophy rooted in the history of diverse cultures (Frankl, 1963; Maslow, 1954; Michael & Cooper, 2013; Splevins, Cohen, Bowley, & Joseph, 2010). Tedeschi and Calhoun (1996) coined the term *posttraumatic growth* to define people's experiences of positive psychological (cognitive-emotional) transformation from an individual's struggle to make meaning of challenging life events. The death of a loved one represents a significant stressful life event, which may lead to the bereaved transforming and growing in response to their loss rather than just coping (Armstrong & Shakespeare-Finch, 2011; Cadell & Sullivan, 2006; Calhoun et al., 2010; Currier, Mallot, Martinez, Sandy, & Neimeyer, 2013; Harris et al., 2010; Janoff-Bulman, 1992; Kim, Carver, Schulz, Lucette, & Cannady, 2013; Tedeschi, Park, & Calhoun, 1998). Moreover, mourners have often relied on religious/spiritual teachings and traditions for dealing with the struggles associated with dying and death (Currier et al., 2013). For instance, religious/spiritual practices such as prayer are important in the lives of many Americans and are often utilized for coping with loss. Bade and Cook (1997) identified *prayer functions* as the roles for which prayer is used in coping and in deepening faith. Investigating functions of prayer among informal caregivers may clarify how prayer may serve in the caregiving coping process.

A growing body of research has linked prayer and posttraumatic growth, yet its progression remains ambiguous (Ando, Sakaguchi, Shiihara, & Izuhara, 2015; Currier et

al., 2013; de Castella & Simmonds, 2013; Harris et al., 2010). Researching prayer in informal caregiving represents a key area of study in caregiver health and well-being. An informal caregiver, also known as a family caregiver, offers unpaid, nonprofessional, curative care for a loved one who is unable to independently perform daily tasks (Family Caregiver Alliance, 2015). A caregiver is a woman, man, spouse, partner, parent, child, grandchild, sibling, in-law, other family member, friend, neighbor, or acquaintance who shares a close relationship with the patient (Family Caregiver Alliance, 2015). Although prayer and posttraumatic growth is a significant topic, there are few studies on this issue in informal caregiving. Thus, this study is an exploration of prayer coping functions and posttraumatic growth with a focus on informal hospice caregivers.

The major sections presented in this chapter are the study's background, statement of the problem, purpose of the study, research questions and hypotheses, theoretical basis of the study, definition of terms, and nature of the study. The assumptions of the study, scope and delimitations, limitations, and significance of the study are also covered, followed by implications for positive social change, summary, and transition into Chapter 2.

Background

Scholars and practitioners have long been interested in how people live healthy lives under difficult circumstances. Since the 1990s, researchers have studied the psychology of posttraumatic growth (Armstrong & Shakespeare-Finch, 2011; Calhoun & Tedeschi, 1990; Currier et al., 2013; Denney, Aten, & Leavell, 2011; Hatano, Fujimoto, Hosokawa, & Fukui, 2015; Janoff-Bulman, 1992, 2006; McDonough, Sabiston, &

Wrosch, 2014; Michael & Cooper, 2013; Tedeschi & Calhoun, 1995, 1996). At the beginning of the 21st century, positive psychology emerged with a focus on human strength, resilience, and adaptive human functioning (Seligman & Csikszentmihalyi, 2000; Tedeschi & Kilmer, 2005). Recent research has focused on the processes that empower individuals, communities, and societies to grow in the face of stressful life circumstances (Calhoun, Tedeschi, Cann, & Hanks, 2010; Roepke & Seligman, 2015; Seligman & Csikszentmihalyi, 2000). Within this growing body of empirical research, investigators use various expressions to describe the phenomenon of growth following adversity: stress-related growth (Park, Cohen, & Murch, 1996), adversarial growth (Linley & Joseph, 2004), benefit finding (Affleck & Tennen, 1996), positive emotions (Folkman & Moskowitz, 2000), resilience and thriving (O'Leary & Ickovics, 1995), transformational coping (Aldwin, Levenson, & Spiro, 1994), and positive psychological change (Yalom & Lieberman, 1991). These constructs share a theme that significant challenge, suffering, and loss may be viewed as catalysts for positive growth.

In addition, examiners have studied posttraumatic growth in a range of challenging life events and populations. These include the bereaved (Michael & Cooper, 2013) and persons in prolonged grief (Currier et al., 2013; Prigerson et al., 2009), family caregivers of cancer (Balfe et al., 2016) and stroke patients (Hallam & Morris, 2014), parents of children with severe illnesses (Cadell, Kennedy, & Hemsworth, 2012; Hungerbuehler, Vollrath, & Landolt, 2011), and women with breast cancer (McDonough et al., 2014). Furthermore, posttraumatic growth has been explored among populations exposed to violence such as amputees (Benetato, 2011), refugees (Chan, Young, &

Sharif, 2016), youth subjected to terror (Laufer & Solomon, 2006), survivors of campus shootings (Vieselmeyer, Holguin, & Mezulis, 2017), sexual assault (Shakespeare-Finch & Armstrong, 2010), and among U.S. veterans of the Iraq and Afghanistan conflicts (Park et al., 2017; Tait, Currier, & Harris, 2016).

Posttraumatic growth is not exclusively an American phenomenon; scientists have studied posttraumatic growth across several cultures including Australian (Shakespeare-Finch & Lurie-Beck, 2014), Chinese (Yu et al., 2010), Japanese (Taku, Cann, Calhoun, & Tedeschi, 2008), Latino/a (Wlodarczyk et al., 2016), and Malaysian (Schroevers & Teo, 2008) cultures. The evidence suggests that people from around the world, facing a range of significant stressors, experience important transformations in their lives that they view favorably.

Posttraumatic Growth

Posttraumatic growth represents a process and outcome of transformational growth from an individual's struggle to make meaning of challenging life events (Currier et al., 2013; Harris et al., 2010; Janoff-Bulman, 1992; Tedeschi & Calhoun, 1995, 1996). An individual confronts adversity through a cognitive—emotional task to incorporate the stressful event into more comprehensible and meaningful assumptive world beliefs (Calhoun & Tedeschi, 2001; Janoff-Bulman, 2006; Janoff-Bulman & Frantz, 1997). The best predictor of posttraumatic growth may be the magnitude with which the trauma shatters a person's core assumptive world beliefs, where the higher the degree of disruption, the greater the potential for growth (Calhoun et al., 2010). Success in reconstructing core guiding principles to include the traumatic event into new assumptive

world beliefs is presumed to be related to cognitive–emotional growth and well-being (Groleau, Calhoun, Cann, & Tedeschi, 2013; Janoff-Bulman & Frantz, 1997).

Posttraumatic growth does not result from an encounter with a stressful life circumstance alone but appears in the context of dealing with stressors, typically with concurrent conditions of psychological distress and hardship (Calhoun & Tedeschi, 2001; Currier et al., 2013; Harris et al., 2010). For instance, displaced flood victims may experience a renewed sense of spirituality and gratitude for being alive, expressing themselves through singing while also feeling despair over the loss of property. Posttraumatic growth does not nullify negative reactions that may accompany the traumatic experience (Harris et al., 2010; Pottie, Burch, Montross Thomas, & Irwin, 2014). In fact, resilient individuals challenged with misfortune may not experience the same degree of growth, if they grow at all (Calhoun et al., 2010). Further research is needed to understand the process that leads to the outcome of posttraumatic growth more fully.

An important aspect of posttraumatic growth is that individuals surpass their prechallenge abilities to experience a greater level of functioning and adaptation, reflecting their acquisition of wisdom and a more complex worldview narrative (Janoff-Bulman, 1992, 2006; Morris, Shakespeare-Finch, & Scott, 2012; O’Leary, Alday, & Ickovics, 1998; Tedeschi & Calhoun, 1995). Calhoun et al. (2010) found that these changes may be observed in posttraumatic growth domains in (a) *relating to others* through an increased sense of empathy, friendship, and consideration of others; (b) *new possibilities* through an increased awareness of new activities and opportunities that were

previously unavailable; (c) *personal strength* through an increased feeling of vulnerability and strength for having experienced and survived the event; (d) *spiritual change* through an increased perception of the truth or validity of religious and/or spiritual beliefs; and (e) *appreciation of life* through an increased respect and appreciation for life and identification of significant priorities.

Through an increased awareness of new possibilities, an informal hospice caregiver may institute a new summer camp program for children who lost their parents to cancer. Moreover, through a new appreciation of life, a mother may redefine life priorities to alter routine Sunday dinner preparations to include her daughter, so they can share precious time and recipes. Thus, posttraumatic growth reflects a process and outcome of transformational change that redefines the individual by incorporating the traumatic experience into new assumptions of the world that can be more meaningful.

Prayer

Religiosity and/or spirituality are prominent aspects in the lives of many Americans, and practices such as prayer may have profound influences on family life and health. Prayer is typically understood as communication and/or conversation with God, a creator, a higher power, and/or a universal spirit (Gallup, 2011; Jors, Bussing, Hvidt, & Baumann, 2015). A USA Today poll reported that approximately 83% of surveyed Americans prayed and believed that God heard and responded to their prayers (Gallup, 2010). A benefit of prayer is that it does not require a specific time investment, skill, or money. Prayer can be practiced in public or private, with others or alone, with or without theistic faith and/or affiliation, and anywhere (Jors et al., 2015; Levine, Aviv, Yoo,

Ewing, & Au, 2009). Furthermore, a person can pray or be prayed for, pray in calm or troubled times, and seek to gain or offer prayer (Levine et al., 2009). Given that prayer can be practiced individually and in any setting, prayer may provide comfort for informal caregivers while allowing them to remain with their loved one.

Prayer has been identified as a mechanism for promoting mental health and well-being. For instance, prayer is recognized as a tool for coping with anxiety (Bade & Cook, 1997), bereavement (Calhoun et al., 2010), trauma (Harris et al., 2008, 2010), chronic illness (Jors et al., 2015), and war (Tait et al., 2016). Thus, Bade and Cook (1997) sought to understand prayer as a coping function for adaptive mental health and theorized that prayer may serve as a framework for promoting growth from adversity. Bade and Cook claimed that prayer functions, or roles that prayer may serve in coping with challenging life events, comprise prayers that (a) *provides acceptance* and acknowledgement of the circumstance; (b) *provides calm and focus* for a positive atmosphere; (c) *provides assistance*, support, and care during adversity; and (d) *defer/avoid* responsibility and seek divine intercession to resolve the challenging event. Prayers that provide acceptance, calm and focus, and assistance are active prayer coping strategies and are associated with better mental health outcomes than prayers to defer/avoid, which represent avoidant prayer coping strategies (Bade & Cook, 1997; Tait et al., 2016). For example, people who have utilized prayers to provide assistance have exhibited lower levels of anxiety, compared to those who used prayers to defer/avoid. Research focused on functions of prayer that may affect psychological responses to adversity may provide information for enhancing patient/caregiver care and subsequent bereavement.

Prayerful people report higher perceptions of posttraumatic growth across a variety of situations. For instance, Currier et al. (2013) revealed that bereaved individuals who endorsed spiritual practices, such as prayer, perceived more posttraumatic growth than those in a nonbereaved group. Denney et al. (2011) also found that prayer played a key role in the posttraumatic spiritual growth of cancer survivors, and Ai, Hall, Pargament, and Tice (2013) showed that preoperative religious coping factors, including prayer, positively influenced cardiac patients' posttraumatic growth following survival of life changing cardiac surgery. Further, Tait et al. (2016) examined prayer functions and posttraumatic growth among military personnel of the Iraq and Afghanistan conflicts and found that personnel using active prayer coping strategies perceived more posttraumatic growth and reported less posttraumatic stress disorder and depressive symptomatology. Though these studies support the significance of prayer and posttraumatic growth, the process of prayer functions remains unclear.

Within a hospice setting, a focus on life and death may stimulate caregiver's interests in religious/spiritual beliefs and practices such as prayer and its role in easing the burdens of informal caregiving and bereavement. Hospice represents a model of healthcare focused on palliative care rather than curative care and on quality of life rather than on quantity of life (National Hospice and Palliative Care Organization [NHPCO], 2014). Thus, informal hospice caregivers can benefit from research aimed at identifying whether their use of active prayer coping functions may promote growth and reduce potential mental health symptomatology.

Informal Hospice Caregiving

Persistent delivery of informal hospice care may affect the biopsychosocial, emotional, cultural, and spiritual well-being of informal caregivers as they face end of life stressors that may expose them to adverse consequences (Kilbourn et al., 2011; Romito, Goldzweig, Cormio, Hagedoorn, & Andersen, 2013). For instance, biological vulnerability to stress exacerbated by the physical burdens of caregiving and the emotional anguish of anticipated loss may amplify the threat to an informal caregiver's well-being, especially if the care is demanding and prolonged (Hughes, Shuman, Wiener, & Gould, 2017). At the same time, informal caregivers have acknowledged that they gain intrinsic rewards and experience growth in perceptions of self, relationships with others, and philosophy of life (Balfe et al., 2016; Cormio et al., 2014; Hatano et al., 2015). However, at the end of their loved one's life, informal caregivers may encounter elevated biopsychosocial distress associated with anticipatory grief, final decisions, and saying farewell. Blum and Sherman (2010) advised that future research is needed to pinpoint risk and protective elements for informal hospice caregivers to support the need to implement interventions for informal hospice caregivers.

Age. In informal hospice caregiving, the age and gender of the informal caregiver may impact caregiving experiences. Caregiver age may impact the ability of the informal caregiver to deliver quality end of life care while maintaining their own health and well-being. For example, older informal hospice caregivers are known to encounter natural endocrine and immune system dysregulations, increased social isolation, and/or decreased mobility as a result of their advancing age (Stephens, Alpass, Towers, &

Stevenson, 2011). In addition, middle-aged informal hospice caregivers may find themselves responsible for providing care to a dying loved one while also performing tasks associated with their employment and/or care of their spouse and children (Rubin & White-Means, 2009). Furthermore, young informal hospice caregivers may not possess experience in end of life caregiving. This may result in immediate caregiver distress and burden that lessens over time following caregiver education and experience. Thus, the age of the informal hospice caregiver may impact patient quality of care and caregiver health and well-being and represents a major area of caregiver research inquiry.

Gender. Gender is another important informal caregiver demographic characteristic in caregiver research. The role of the informal caregiver has customarily been a female one, and most research study participants have been female informal caregivers who typically reported significantly greater negative biopsychosocial distress (Washington et al., 2015). For example, Brazil, Thabane, Foster, and Bedard (2009) remarked that women's health tended to be more negatively influenced by informal caregiving; female informal caregivers conveyed greater stress, depression, anxiety, and burden.

Although informal caregiving continues to be a traditionally female role, changes in gender roles in recent years have provided a justification for investigating whether these gender disparities are shifting (Brazil et al., 2009). For example, an increasing number of men are taking on more responsibility for caregiving, and this trend may likely continue as family life is restructured with the modification of gender roles and

expectations (Pinquart & Sörensen, 2006). This study statistically controlled for the potential effects of age and gender.

Caregiving Environment

The hospice caregiving environment may also impact informal caregiver bereavement outcomes. In the home hospice setting, a dying loved one receives palliative care in the patient's or caregiver's home with informal caregivers assuming the primary role of care with guidance and instruction from an interdisciplinary hospice team (Chung & Burke, 2013; Phongtankuel et al., 2017; Woodman, Baillie, & Sivell, 2016). Hospital hospice (main hospital/intensive care unit inpatient) is an environment where a dying patient receives general inpatient care provided by healthcare professionals and, if permitted, assistance is given by the family (Pottie et al., 2014). The presence of family caregivers accompanying adult relatives hospitalized in acute care facilities is an increasingly common phenomenon, yet it is not widely researched (Cohen et al., 2010; Hudson & Aranda, 2014). In the hospital, the level of care provided by the caregiver differs from the home caregiver. The state of terminal illness may be different for patients in the hospital as compared to those at home.

Place of death may influence the development of psychiatric disorders among bereaved caregivers (Wright et al., 2010). At 6 months post loss follow-up, bereaved caregivers of loved ones who died in a main hospital or intensive care unit had increased risk of developing posttraumatic stress disorder or persistent complex bereavement disorder compared to bereaved home hospice caregivers who were adjusting to bereavement and not considered diagnosable (Prigerson et al., 2009; Wright et al., 2010).

On the other hand, Kapari, Addington-Hall, and Hotopf (2010) claimed that at 10 months post bereavement, bereaved caregivers of cancer patients who died at home reported higher amounts of psychological stress than caregivers of loved ones that died elsewhere. These mixed findings highlight the need to further explore hospice caregiver bereavement.

The emotional and physical experiences of informal caregivers who deliver home hospice care are complex (Hughes et al., 2017), but there is a lack of research exploring why some people grow while others decline. Home hospice care involves private and subjective experiences, inspired by an attachment to a close, personal, and possibly fragile relationship (Hughes et al., 2017). Home hospice informal caregivers are constant companions and primary providers of care to their loved ones and may feel more accomplished or helpful in their duties than caregivers who visit their loved ones in the hospital environment. Moreover, the home hospice informal caregiver is more a part of the decision making and provision of care for their loved one, which may lead to posttraumatic growth. Home hospice informal caregivers may experience the positive changes associated with posttraumatic growth from making meaning of the burdens of caring, loss of life, and bereavement (Balfe et al., 2016). In addition, adjusting to bereavement or the resumption of life without their loved one may be harder for informal caregivers who have had difficulty finding meaning after a loss.

With an aging U.S. population characterized by increasing numbers of older adults, more older adults will require informal care. For informal caregiving experiences that conclude in bereavement, it is imperative for scholars, practitioners, and informal

caregivers to gain a comprehensive understanding of coping methods that may promote biopsychosocial, emotional, and spiritual posttraumatic growth in caregiving and bereavement. Caring for a terminally ill loved one is a role for which many informal caregivers are ill-equipped and unprepared, particularly when care is delivered in the home setting. To date, there has been little research on the lived experiences of informal caregivers in hospice settings.

Research that explores growth among informal caregivers in hospice settings is needed to advance an understanding of an experience that a sizeable portion of the U.S. population will experience at least once in their lifetime. Research into identifying ways (such as prayer) for alleviating informal hospice caregiver distress is warranted to resist the potential negative impact of hospice caregiving in all hospice settings (Pottie et al., 2014). The aim of this study was to explore prayer functions and posttraumatic growth among informal caregivers who cared for their terminally ill loved ones in home or hospital hospice settings.

Statement of the Problem

Informal hospice caregiving can have both negative (stress, distress, and reduced quality of life) consequences for caregivers. Despite this risk, informal hospice caregivers have been found to also experience posttraumatic growth as a result of their caretaking (Cormio et al., 2014; Hamama & Sharon, 2013; Hatano et al., 2015). In hospice, a focus on life and death may stimulate topics involving religious/spiritual devotion. Religion is a key component in the lives of Americans, and religious devotion and involvement in

religious activities positively correlates with posttraumatic growth (Currier et al., 2013; Harris et al., 2008; Michael & Cooper, 2013; Tait et al., 2016).

Among people of faith, prayer is regarded as an important activity for coping with pain and suffering. Moreover, in comparison to conventional medicine, prayer is a commonly applied complementary and alternative technique for promoting posttraumatic growth (Jors et al., 2015). Research on the role of prayer in coping has been focused on prayer as unidimensional (i.e., whether it occurred), which does not account for functions that prayer may serve in coping (Currier et al., 2013). Thus, this study addressed a gap in knowledge regarding whether and how prayer functions influenced posttraumatic growth among informal hospice caregivers. This research is important in understanding that informal hospice caregivers have the potential for posttraumatic growth and in identifying the prayer functions that are associated with posttraumatic growth.

Purpose of the Study

Informal hospice caregivers represent an understudied subset of the informal caregiver population. The purpose of this quantitative study was to address the gap in the research by exploring the relationship between prayer functions and domains of posttraumatic growth among informal caregivers while considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or did not pray). This study has a positive psychology focus in exploring the interplay between prayer functions and posttraumatic growth. The findings of this study may provide an understanding of posttraumatic growth and how prayer

functions may provide support in the informal hospice caregiving experience to achieve an improved overall sense of well-being.

The way that informal hospice caregivers cope with the caregiving and bereavement experiences is unclear. Thus, an understanding of influences that promote a positive caregiving environment within a hospice setting is necessary for the promotion of interventions for hospice caregiver health and well-being. This study was focused on prayer functions, or the roles that prayer may serve in coping with the hospice caregiving experience, and its potential relationship with perceptions of posttraumatic growth.

Research Questions and Hypotheses

This research study utilized a quantitative, correlational, cross-sectional, survey research design to answer the research questions.

Research Question 1: Among informal hospice caregivers, is there a relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender?

H₀1: Among informal hospice caregivers, there is no relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender.

H₁1: Among informal hospice caregivers, there is a relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and

focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender.

Research Question 2: Do home and hospital informal hospice caregivers differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life)?

H₀2: Home and hospital informal hospice caregivers do not differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

H₁2: Home and hospital informal hospice caregivers do differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

Research Question 3: Do informal hospice caregivers who pray and informal hospice caregivers who do not pray differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life)?

H₀3: Informal hospice caregivers who pray and informal hospice caregivers who do not pray do not differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

H₁3: Informal hospice caregivers who pray and informal hospice caregivers who do not pray do differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

Theoretical Basis of the Study

Janoff-Bulman's (1992) shattered assumptions theory and Calhoun et al.'s (2010) model of growth in grief served as the theoretical basis of the study.

Shattered Assumptions Theory

Janoff-Bulman (1992) stipulated that an individual maintains an inner environment that holds important assumptive world beliefs of a safe and secure world. When a challenging life event takes place, such as the dying and death of a loved one, the individual's core assumptive world beliefs may become challenged and shattered, necessitating the restructuring of beliefs as informal caregivers struggle to make meaning of their loved one's death (Calhoun et al., 2010; Cann et al., 2010; Janoff-Bulman, 1989, 1992; Michael & Cooper, 2013). Their perceptions of safety and security are shattered (Currier et al., 2013; Harris et al., 2010; Tedeschi & Calhoun, 1995). The informal caregiver must then contemplate the heightened emotional distress stemming from the death at the same time as how the assumed world should be reorganized to fit the meaning of the experience. An informal hospice caregiver who watched his or her father die and was unable to ease his suffering may experience a disconnect with assumptive world beliefs that life is fair (or a lack of disconnect if the father had been distant or abusive). Consequently, a caregiver may feel that he or she is vulnerable to other losses such as an increased cognizance of mortality (Calhoun et al., 2010). These events present a challenge to caregivers' level of adaptability and awareness of their place in the world. Thus, an informal caregiver may struggle to confront the bereavement that accompanies the many memories of the dying and death experience.

Model of Growth from Grief

Calhoun et al. (2010) postulated that posttraumatic growth is cultivated from the cognitive—emotional process and outcome of a person’s struggle to understand, restructure, and assimilate challenging life events into new world adaptations. If they are to move toward integration, informal hospice caregivers must *process* their experience into an internal cognitive—emotional reflection to understand and restructure the event followed by an *outcome* of successfully assimilating the encounter into new, nonthreatening schemas (or schemata), meanings, goals, and life narratives (Calhoun et al., 2010; Janoff-Bulman, 1992, 2006; Tedeschi & Calhoun, 1995, 1996).

The model of growth in grief (Calhoun et al., 2010; Taku et al., 2008) explains that meaningful positive change can arise among individuals confronted with substantial adversity. For example, through their caregiving experience, informal hospice caregivers may become aware of their strengths, recognize the value of their relationships, and acquire new spiritual perceptions (Calhoun et al., 2010; Currier et al., 2013). Informal hospice caregivers of terminally ill loved ones may experience their time as an opportunity to come together for emotional and spiritual healing with expressions of affection and love through acts of caregiving so that when the end of life finally comes, their loved one was comfortable and surrounded by loved ones in the place they called home.

Definition of Terms

Terminology identified and defined in the research literature relative to posttraumatic growth, prayer functions, caregiving, and bereavement is often diverse and

may lead to confusion. Therefore, the following terms are elucidated for their use and purpose in this paper.

Bereavement: State of loss of a significant person in life (NHPCO, 2014).

Caregiver: A woman, man, spouse, partner, parent, child, grandchild, sibling, in-law, other family member, friend, neighbor, or acquaintance that shares a close relationship with the patient (Family Caregiver Alliance, 2015).

Hospice: Exemplifies the philosophical principle that dying is a natural process and every person has the right to die with dignity and free of pain. Hospice represents a model of healthcare focused on palliative care rather than curative care and on quality of care rather than on quantity of life (NHPCO, 2014).

Informal caregiver: Also known as a family caregiver—a caregiver who provides unpaid, nonprofessional, curative care to a loved one who is unable to independently perform daily tasks (Family Caregiver Alliance, 2015).

Informal hospice caregiver: A caregiver who provides unpaid, nonprofessional, palliative end of life care to a terminally ill loved one (Empeno, Raming, Irwin, Nelesen, & Lloyd, 2011).

Posttraumatic growth: A positive psychological (cognitive-emotional) transformation resulting from the struggle to process a challenging life event; it may be measured by the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1995).

Posttraumatic growth domains: Realms of a person's life that are typically extensions of the struggle to grasp the traumatic event and make meaning of it (Tedeschi & Calhoun, 1996).

Prayer: A conscious action of initiating a conversation and relationship to God, a higher power, and/or a universal spirit (Jors et al., 2015).

Prayer functions: Roles that prayer may serve in coping with challenging life events; they may be measured by the Prayer Functions Scale (Bade & Cook, 1997).

Terminally ill: Describes someone with a life expectancy of 6 months or less to live if the illness proceeds along its standard trajectory (NHPCO, 2014).

Nature of the Study

I used a quantitative, correlational, cross-sectional, survey research design to explore prayer coping functions and posttraumatic growth. The target population was female and male informal caregivers who cared for their terminally ill loved ones in home or hospital hospice settings. The informal caregivers were recruited from the resource website, Family Caregiver Alliance, National Center on Caregiving, and from Amazon Mechanical Turk. Potential participants were directed to an electronic version of the survey packet generated on SurveyMonkey, a service provider for online survey and research projects. I stored and exported data to the IBM Statistical Product and Service Solutions (IBM SPSS), version 23, for data analysis (see George & Mallery, 2016; IBM Corporation, 2015). I employed a hierarchical linear regression and Hotelling's T^2 inferential tests to address the research questions. Chapter 3 provides more details on the research design and rationale, methodology, sampling procedure, instrumentation, data analysis, threats to validity, and ethical procedures.

Assumptions of the Study

I designed this study to examine the relationship between prayer functions and posttraumatic growth following a home or hospital informal hospice caregiving experience. It was assumed that (a) caregivers had sufficient self-awareness to truthfully answer the online questionnaire, including sections assessing demographics, prayer functions, and posttraumatic growth; (b) caregivers only referred to the experience of informal hospice caregiving when answering the online questionnaire; (c) caregivers were knowledgeable in using the technology required to complete the online questionnaire; (d) caregivers were representative of the hospice caregiving population; and (e) the study measures, the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) and Prayer Functions Scale (Cook & Bade, 1998), effectively measured posttraumatic growth and prayer functions because the scales were demonstrated to be both reliable and valid.

Scope and Delimitations

The scope of this research was to study functions of prayer and perceptions of posttraumatic growth among female and male informal caregivers who cared for their terminally ill loved ones in one of two environmental settings: home or hospital hospice. Delimiters of the scope of the study were that caregivers must be willing to explore their hospice caregiving experience and answer questions regarding prayer and posttraumatic growth during their experience. Additionally, only fully completed surveys were used in the study. The target population was limited to a convenience sample of informal caregivers who elected to complete an online demographic questionnaire and two self-

report surveys found on a family caregiver resource website and on Amazon Mechanical Turk. In addition, informal caregivers had to reside in the United States, be at least 18 years old, and read and understand the English language.

Limitations

There were several limitations in this study. The target population was limited to informal hospice caregivers who resided in the United States or its territories, so generalizability to caregivers outside the United States was unattainable. In addition, the target population was limited to a sample of convenience who elected to complete an online demographic questionnaire and two self-report surveys, which may not be representative of the target population. Additionally, most informal caregivers were White males who were 20-29 years old, so consideration of the study findings to other ethnicity, gender, and age group caregiver demographics was restricted. Further, given that most of the responses were taken from a single group of paid informal caregivers, the generalizability of this study's survey takers is limited and may not be representative of the informal hospice caregiving population. In addition, due to the anonymous and confidential aspects of the study, no follow-up consultations were possible, so I was unable to determine the accuracy of responses.

Significance of the Study

Based on data collected in 2014, the National Alliance for Caregiving and American Association for Retired Persons (2015) reported that nearly 43.5 million U.S. adults served as an informal caregiver to a loved one; about 85% cared for a relative, and roughly 60% of care was provided by an adult female. Furthermore, approximately 48%

of surveyed caregivers reported that their loved one remained in their own home, and more than 35% reported that their loved one lived in the caregiver's home (National Alliance for Caregiving and American Association for Retired Persons, 2015). Taken together, nearly 83% of delivered care was in a home setting. These statistics indicate the need for informal hospice caregivers, especially those in a home setting. This study is significant in promoting informal caregiver health and well-being, both of which represent a national public health priority (Family Caregiver Alliance, 2015). The aim of this study was to explore prayer functions as a means of coping with and promoting posttraumatic growth among informal hospice caregivers. This study was intended to add to the current literature on prayer and posttraumatic growth and to expand this area of research to include informal hospice caregiving.

Implications for Positive Social Change

In 2014, approximately 1.65 million Americans were enrolled in hospice, and roughly 58.9% of hospice patients received informal care and died at home (NHPCO, 2014). The segment of the U.S. population who are 65 years or older is projected to increase from 35.1 million in the year 2000 to 71.5 million in the year 2030 (Collins & Swartz, 2011). By 2030, one in five baby-boomers will be 65 years or older, and the demand for home healthcare will grow (Collins & Swartz, 2011; Pottie et al., 2014). Research has indicated that most U.S. adults identify as religious, and more than nine out of 10 specified that if terminally ill with 6 months or less to live, they would choose to die at home surrounded by family; about 90% of those surveyed remarked that they would be interested in pursuing hospice care (Gallup, 2010, 2011). Many identify home

as a place that is familiar, safe, and calming. Further, in a review of 210 studies, 75% identified home as the preferred place to die, and four out of five patients did not alter this decision as their illness progressed (Gomes, Calanzani, Gysels, Hall, & Higginson, 2013).

Informal caregivers are major contributors to the U.S. healthcare system. These caregivers devote roughly 43 to 120 unpaid hours per week—an estimated yearly unpaid economic value of nearly \$450 billion (Baider & Surbone, 2014; Coughlin, 2010; Reinhard, Feinberg, Choula, & Houser, 2015). In the future, the need for informal care is projected to rise by 85% from 2000 to 2050 (Baider & Surbone, 2014). Informal hospice caregivers typically provide about 80% of care for their terminally ill loved ones (Empeno et al., 2011). Home informal hospice caregivers are significant in permitting terminally ill loved ones to remain in their homes and circumvent hospitalizations (Albright, Oliver, & Demiris, 2014). Without home informal hospice caregivers, many of the terminally ill would likely increase their visits to emergency rooms and need to be placed into long-term care facilities, nursing homes, and/or hospitals (Pottie et al., 2014). In those instances, the terminally ill may spend their last moments in an unfamiliar and uncomfortable place with busy hospital staff making end of life decisions, perhaps without their loved ones present.

Governmental policymakers who are concerned with transforming an overburdened U.S. healthcare system have advocated for the use of an integrated, interdisciplinary home healthcare plan (Terry, Gordon, Steadman-Wood, & Karel, 2017). Their proposed strategy focuses on treating the person's biopsychosocial needs as the

preferred method of care for an aging America with complex chronic or life limiting illnesses (Hudson et al., 2012; Terry et al., 2017; Wachterman et al., 2016).

Governmental health agencies support numerous programs in preparation for the birth of a baby, yet seldom offer services with a focused attention on end of life care (Hudson et al., 2012). These results may afford healthcare providers, researchers, and policy makers a deeper awareness of prayer functions that encourage posttraumatic growth and contribute to positive social change.

An investment in caregiver research is essential for highlighting social support programs and in educating informal hospice caregivers as they begin their journey on an unfamiliar path (Empeno et al., 2011). In the quest for positive social change, this study can offer awareness of the coping functions of prayer that encourage posttraumatic growth and relieve the distressing aspects of informal hospice caregiving. Moreover, this study may show that informal hospice caregivers who are struggling with their experiences find that prayer is a strategy to help their suffering. Such increased awareness may advance the development of an efficient and suitable social support intervention that boosts posttraumatic growth among informal hospice caregivers.

Summary

A goal of informal hospice caregiver research is to explore methods that enhance patient/caregiver health and well-being, lengthen the amount of time patient/caregiver dyads remain at home, enrich bereavement outcomes, and provide less burden on the healthcare system (Collins & Swartz, 2011). Even though many informal hospice caregivers are not in need of intervention, others need support, and it is often a challenge

to recognize the people that do (Terry et al., 2017). Furthermore, the current average length of time that a patient receives hospice care is relatively short, a fact that necessitates the designing of instantly ready, available, and deliverable interventions (Hudson et al., 2013; McMillan et al., 2006). This study was designed to identify prayer functions that may be associated with perceptions of growth or inhibit posttraumatic growth among informal hospice caregivers. The study's results may be informative as to the development of a prayer-based intervention that specifies how informal hospice caregivers can pray in such a way as to promote posttraumatic growth. Chapter 2 discusses the literature review and offers a comprehensive examination of posttraumatic growth, prayer functions, and informal hospice caregiving.

Chapter 2: Literature Review

Introduction

Researchers have studied posttraumatic growth in several populations who have experienced a range of adverse events, including cancer patients (Chan, Ho, Tedeschi, & Leung, 2011; Denney et al., 2011; Williams & McCorkle, 2011), combat veterans (Tedeschi, 2011), amputees (Benetato, 2011), parents of children with severe illnesses (Cadell et al., 2012; Hungerbuehler et al., 2011), individuals experiencing bereavement (Armstrong & Shakespeare-Finch, 2011), and in U.S. Veterans of the Iraq and Afghanistan conflicts (Tait et al., 2016). Prayer can help people cope with traumatic events (Currier et al., 2013). Although researchers have investigated the role of prayer in posttraumatic growth, there is a gap in the research on its role in the hospice care community. The purpose of this quantitative study was to address the gap in the research by exploring the relationship between prayer functions and domains of posttraumatic growth among informal caregivers while considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or did not pray). This research is important because informal hospice caregivers represent an integral part of the U.S. healthcare industry; therefore, promoting informal hospice caregiver health and well-being has emerged as a national public health priority (Family Caregiver Alliance, 2015). Information garnered from this study may help in identifying functions of prayer that may aid informal caregivers through their hospice experience and bereavement.

Chapter 2 describes the literature search strategy used for this study as well as its theoretical framework. Chapter 2 also contains a review of the current, peer-reviewed literature pertaining to posttraumatic growth, prayer, prayer functions, bereavement, coping, informal caregiving, and hospice care. The chapter ends with a summary and a transition to Chapter 3.

Literature Search Strategy

Literature published on posttraumatic growth, bereavement, informal caregiving, prayer functions, and hospice care was identified using Walden University's online library electronic databases to search for relevant publications. These databases included Academic Search Complete, EBSCO, PsycINFO, PsycARTICLES, Psychology: A SAGE Full Text-Collection, Psychiatry Online, and SocINDEX and Medline. The literature search included key terms and combinations of key terms, such as *posttraumatic growth, post-traumatic growth, pray, prayer, prayer functions, bereavement, bereaved, coping, informal caregiving, caregiver, hospice, palliative, religion, religiousness, spirituality, and health*. A circular strategy was employed, and reading articles presented new reference lists. Only English language materials were used. The articles chosen for the review are no more than 5 years old, except for those that represent seminal research. Scholarly, peer-reviewed articles covering the concepts and variables related to this study were selected for the review.

Theoretical Foundation

Shattered Assumptions Theory

Janoff-Bulman (1992) asserted that prior to a challenging life event, an individual maintains an established and broad set of core assumptive beliefs in a world that is safe, secure, predictable, and meaningful (Calhoun et al., 2010; Janoff-Bulman, 1992, 2006; Tedeschi & Calhoun, 1995, 1996). An assumptive world consists of every assumed cognition and knowledge of the world. An individual's assumptive world guides an individual's perspectives and paradigms of cause and effect, right or wrong, and a common sense of meaning and purpose in life (Calhoun, Cann, Tedeschi, & McMillian, 1998; Tedeschi & Calhoun, 2004).

Following a challenging life event, some people experience the context of the challenge as in accord with existing assumptive world beliefs. In time, the individuals mitigate their emotional distress and return to a state of well-being and adjustment (Calhoun et al., 2010). For example, the death of an 80-year-old neighbor following an illness may evoke feelings of sadness with no challenge to established beliefs about life and death, meaning less posttraumatic growth. In other circumstances, the context of the challenge may be in discord with existing assumptive world beliefs (Calhoun & Tedeschi, 2004). Thus, the dying and death of a loved one may shatter core assumptions, and this disruption may require a substantial effort to rebuild. For example, witnessing the suffering of a dying loved one who lived an exemplary life can impact an individual's established assumptive belief that the world is fair (Cann et al., 2010; Janoff-Bulman & Frantz, 1997; Michael & Cooper, 2013; Taku et al., 2008).

Janoff-Bulman's (1992) shattered assumptions theory posits that if the caregiver is unable to mitigate emotional distress following trauma to the point that his or her core beliefs are significantly disrupted, then the death has shattered assumptions, and the individual's anguish reflects the degree to which the assumptions were shattered (Janoff-Bulman, 2006; Tedeschi & Calhoun, 2004). The caregiver now struggles to confront not only the bereavement that accompanies the death but also the need to restructure guiding principles as to adaptability and awareness of her or his place in the world (Calhoun & Tedeschi, 2006; Currier et al., 2013; Taku et al., 2008). Furthermore, the caregiver may feel, from the illness and death of their loved one, that they are now vulnerable to additional losses that may be unpredictable such as their own mortality (Currier et al., 2013; Michael & Cooper, 2013).

A failure to rebuild functional assumptive world beliefs may be associated with continued elevated levels of intrusive reflection and, potentially continued distress (Taku et al., 2008). Individuals who remain stagnant and find themselves unable to progress through the grief process are susceptible to grief-related illnesses including persistent complex bereavement disorder (American Psychiatric Association, 2013; Prigerson et al., 2009). Even though distressing events can trigger posttraumatic symptoms, they can also foster posttraumatic growth (Cann et al., 2011), which is the positive psychological (cognitive-emotional) transformation resulting from a struggle to process a challenging life event (Calhoun & Tedeschi, 1999).

Model of Growth from Grief

The model of growth from grief (Calhoun et al., 2010) illustrates that meaningful positive cognitive—emotional change can arise among individuals confronted with substantial adversity (Taku et al., 2008). Following the shattering of beliefs, an individual must partake in cognitive—emotional reflection, also known as *ruminatio*n, with two types: *intrusive* and *deliberate* ruminations (Cann et al., 2011). When automatic and unwelcome thoughts and images of a traumatic event plague an individual's cognitive—emotional world, ruminations are characterized as intrusive (Lindstrom, Cann, Calhoun, & Tedeschi, 2013; Taku et al., 2008). Watkins (2008) referred to intrusive ruminations as unconstructive due to the ineffective practice of repetitively thinking (ruminating) about only the negative aspects of the event. When an individual's thoughts are intentionally reflective with a purpose of reexamining the challenging event for meaning renewal, ruminations are characterized as deliberate (Calhoun, Cann, Tedeschi, & McMillan, 2000). Watkins referred to deliberate ruminations as constructive due to the purposeful reassessment of the event in finding meaning and solutions to problems.

Calhoun et al. (2010) surmised that negative intrusive thoughts are more prevalent soon after the trauma and will serve as an incentive to engage in deliberate ruminations geared toward restructuring core beliefs and attaining meaning from the experience. Tedeschi and Calhoun (1995) found that the best predictor of posttraumatic growth is the magnitude with which the challenging life event shattered core assumptive world beliefs (Currier et al., 2013; Janoff-Bulman, 1992, 2006; Tedeschi & Calhoun, 1995, 1996). Pottie et al. (2014) similarly concluded that the higher the degree of disruption, the higher

the potential for posttraumatic growth. It is possible that more severe threats lead to more deliberate ruminations in search of renewed meanings which then lead to higher levels of reported posttraumatic growth.

Thus, posttraumatic growth is a consequence of the *process* and *outcome* of a person's *struggle* to restructure and assimilate a challenging life event into new meaningful schemas and goals (Currier et al., 2013; Harris et al., 2010; Tedeschi & Calhoun, 1995). The new, nonthreatening assumptive world beliefs are obtained through internal cognitive—emotional rumination. In fact, according to the model of growth from grief, an individual may become so affected by the challenging life event that, through a cognitive—emotional transformation, they use their new life narrative to surpass prechallenge status, often exceeding and realizing an elevated level of positive growth and functioning (Calhoun et al., 2010; Janoff-Bulman, 2006). Therefore, posttraumatic growth is not fostered from the challenging life event itself; it is cultivated from the cognitive—emotional process and outcome of restructuring and assimilating new world adaptations (Calhoun et al., 2010).

Through growth from grief, there is a cognitive—emotional restructuring of assumed world beliefs that personify the totality of the adverse life event with the addition of new wisdom about self, others, and the world (Cryder, Kilmer, Tedeschi, & Calhoun, 2006). For example, the mother of a 10-year-old deceased cancer patient processes her loss and finds her daily ruminations are less about thoughts that recall the dying and death of her child and more about the benefits to the community with the opening of a community center dedicated in her daughter's honor and geared toward

finding a cure for cancer. Thus, an informal hospice caregiver may not only recover from the dying and death of a beloved parent but may transcend their caregiver role to volunteer at a hospice summer camp for bereaved children, develop a program to support caregiver bereavement, become a home hospice volunteer, and/or develop an awareness campaign that educates the public about the value of hospice care.

Posttraumatic Growth

Negative psychological consequences of traumatic experiences are well documented in the literature. However, researchers are now exploring how traumatic experiences may influence individuals in a positive manner. Tedeschi and Calhoun (1995) theorized that, following an adverse or traumatic life event, individuals could grow in three general domains that are typically extensions of the struggle to grasp the traumatic event and make meaning of it: changes in self-perception, changes in interpersonal relationships, and changes in life philosophy.

Changes in Self-Perception

Individuals coping with challenging life events may experience positive changes in their self-perception of others. Changes in self-perception involve psycho-emotional growth and refer to individuals gaining a positive perception of self because of dealing with the challenges and difficulties posed by adverse or traumatic life situations (Tedeschi & Calhoun, 1995). Individuals gain experience by coping with traumatic events that can lead to their feeling stronger, more self-assured, more self-reliant, more competent, and more confident than before (Tedeschi & Calhoun, 1995).

Individuals coping with traumatic life events often conclude that they are better individuals as a result of their experience with trauma (Tedeschi & Calhoun, 1995). These positive changes in self-perception can lead to increased confidence in the ability to cope with future traumas and being more assertive rather than reactive in dealing with demanding situations (Tedeschi & Calhoun, 1995). Further, Janoff-Bulman (2004) referred to positive changes in self-perception as “strength through suffering” (p. 31), wherein adverse conditions allow individuals to become aware of previously undetected strengths.

Changes in Interpersonal Relationships

Individuals coping with traumatic situations may experience positive changes in their perceptions of their interrelationships with others (Tedeschi & Calhoun, 1995). Changes in interpersonal relationships involve psycho-emotional growth and refer to an increased appreciation of life for both the self and others, the value of community, and the necessity of social and familial support (Tedeschi & Calhoun, 1995). An increased appreciation of interpersonal relationships can lead to closer and more intimate relations with family and friends (Tedeschi & Calhoun, 1995). Additionally, individuals coping with traumatic experiences may be self-disclosing and willing to recognize their vulnerabilities (Tedeschi & Calhoun, 1995). Such recognition can lead to more emotional expressiveness and create a willingness to accept and utilize options for social support that may have been previously ignored or underappreciated (Tedeschi & Calhoun, 1995). Janoff-Bulman (2004) identified the ability to accept and utilize social support as a critical component in feeling prepared to handle future traumatic events.

Changes in Life Philosophy

Individuals coping with distressing situations may experience positive changes in their philosophy of life (Tedeschi & Calhoun, 1995), which involve psycho-emotional growth and refer to a change in an individual's assumptive world beliefs. Prior to the traumatic experience, individuals generally hold a life philosophy and maintain an inner psychological environment that assumes a safe and secure world (Janoff-Bulman, 1989, 1992). However, trauma and adversity may challenge this worldview and cause individuals to reevaluate and alter their assumptive beliefs so that those views can accommodate the reality of their experienced trauma and potential for future adversity (Tedeschi & Calhoun, 1995). Such an "existential reevaluation" (Janoff-Bulman, 2004, p. 32) may involve appreciating life more than before, seeing life as a gift, reevaluating the importance of life priorities, and finding meaning in life (Tedeschi & Calhoun, 1995). This sort of meaning may allow individuals emotional relief to develop a new life philosophy that revises their previous assumptions about life in such a way as to accommodate the existence of future adversity and a perception of their ability to handle it (Janoff-Bulman, 2004; Tedeschi & Calhoun, 1995).

Posttraumatic Growth in the Literature

Posttraumatic growth is a positive psychological (cognitive—emotional) transformation that individuals may experience because of their struggle with challenging life circumstances (Benetato, 2011; Cho & Park, 2013; Rajandram, Jenewein, McGrath, & Zwahlen, 2011). Posttraumatic growth begins when a traumatic event challenges an individual's cognitive schema of the world and they use coping mechanisms to adapt to

and understand the event (understood as a process) and create a more positive worldview (understood as an outcome; Rajandram et al., 2011). Posttraumatic growth involves positive psychological movement/growth from previous levels of understanding and functioning (Rajandram et al., 2011). Current research shows that posttraumatic growth is a way for understanding positive personal transformation in the wake of traumatic life experiences (Benetato, 2011; Calhoun & Tedeschi, 1998; Chan et al., 2016; Hungerbuehler et al., 2011; Rajandram et al., 2011; Tedeschi, 2011).

Tedeschi and Calhoun (1996) identified five domains that accurately reflect posttraumatic growth, which are shown in Table 1.

Table 1

Operational Definitions of Posttraumatic Growth

Domains	Posttraumatic Growth: Operational Definitions
Relating to Others	An increased sense of empathy, friendship, and consideration of others.
New Possibilities	An increased awareness of new choices, opportunities, and activities that were previously unavailable.
Personal Strength	An increased feeling of vulnerability and strength for having experienced and survived the event.
Spiritual Change	An increased perception of the truth or validity of religious and/or spiritual beliefs.
Appreciation of Life	An increased respect and appreciation for life and identification of significant priorities.
Posttraumatic Growth	A positive psychological transformation resulting from the struggle to make meaning of a challenging life event.

Note. Posttraumatic Growth (Tedeschi & Calhoun, 1996).

Posttraumatic Growth and Bereavement

The number of empirical studies on posttraumatic growth is increasing, and researchers have identified the presence of posttraumatic growth among people coping

with bereavement. For example, in an early study of the factors contributing to posttraumatic growth, Cadell, Regehr, and Hemsworth (2003) found a significant positive relationship among posttraumatic growth, social support, stressors, and spirituality in bereaved informal caregivers of loved ones dying of HIV/AIDS. Individuals who experienced the highest level of distress had the most social support from friends and family, and had the strongest spirituality (i.e., adherence to spiritual beliefs and practices) were more likely to experience posttraumatic growth (Cadell et al., 2003). Although the researchers did not focus on prayer, the findings suggest that prayer, as an aspect of spirituality, may be positively related to posttraumatic growth in informal caregivers, and that individuals facing traumatic events may attempt to find meaning through spirituality.

In a study of 111 parents grieving the loss of a child under the age of 25 and living at home at the time of death, Engelkemeyer and Marwit (2008) found that grief intensity was negatively related to posttraumatic growth and that self-worth was a strong predictor of posttraumatic growth. The researchers suggested that parents who have a sense of self-worth beyond their parental identities may experience more posttraumatic growth than parents whose self-worth is perceived only in their parental role (Engelkemeyer & Marwit, 2008).

Posttraumatic growth among bereaved individuals may be influenced by the type of trauma experienced and by the relationship of bereaved individuals to deceased individuals. Shakespeare-Finch and Armstrong (2010) found that bereaved participants, when compared to participants who experienced other challenging life events, such as sexual assault and motor vehicle accidents, reported greater posttraumatic growth — a

finding suggesting that trauma type influences posttraumatic adjustment. In a subsequent 2011 study, the same researchers found that a bereaved person's relationship to the deceased individual and their perception of the severity of trauma, rated on a Likert-based scale from 1 (mild) to 5 (very severe), also influenced posttraumatic growth. First-degree bereaved relatives (i.e., parents, siblings, partners, or children) reported higher levels of posttraumatic growth than did second-degree bereaved relatives (i.e., friends, aunts, uncles, cousins, or grandparents). Furthermore, relatives who perceived higher severity of trauma reported higher levels of posttraumatic growth (Armstrong & Shakespeare-Finch, 2011).

Researchers have also studied factors that moderated posttraumatic growth in bereaved individuals. For example, Xu, Fu, He, Schoebi, and Wang (2015) examined whether anxious and avoidant attachment moderated posttraumatic growth in bereaved adults after losing a family member to cancer. According to attachment theory, anxious attachment refers to a negative view of the self and a positive view of others. Consequently, these individuals tended to be dependent upon and anxious about their relationships with others. Conversely, avoidant attachment refers to a positive view of the self and a negative view of others. These individuals tended to mistrust others and attempted to maintain an emotional distance from others. Among the 240 adults surveyed, Xu et al. found a positive relationship between grief and posttraumatic growth among anxiously attached bereaved adults and no significant relationship among avoidantly attached bereaved adults. Thus, the former group may have the potential to benefit from adapting to the loss, whereas the latter group may not (Xu et al., 2015).

Research on posttraumatic growth and bereavement also includes qualitative studies. Smith, Joseph, and Das Nair (2011) explored posttraumatic growth in adults bereaved by the suicide of loved ones. The researchers conducted semistructured interviews of six participants, and through interpretive phenomenological analysis, identified two themes relevant to posttraumatic growth: positive growth and social context. Positive growth included gaining a change in life view involving a greater awareness of participants' place in the world and their relation to others. The theme of social context involved participants' concerns with how others perceived them. Smith et al.'s findings largely supported Calhoun et al.'s (2010) model of growth from grief, which holds that posttraumatic growth involves changes in self-perception, changes in interpersonal relationships, and changes in life philosophy.

In another qualitative study, Sanderson et al. (2013) focused on posttraumatic stress and growth in caregivers following the expected death of a loved one from cancer. From semistructured phone interviews of 36 participants occurring 6 months after the death of a loved one, the researchers found that all participants suffered some degree of traumatization and shock, suggesting that survivors still experience shock over the death of a loved one even when the death is expected and no matter how prepared survivors are (Sanderson et al., 2013). However, posttraumatic growth was also indicated by participants' language of resolution and resilience, which led the researchers to conclude that positive self-appraisal may assist in the transformation of trauma into personal growth. Although studies have confirmed that posttraumatic growth can occur in

bereaved individuals, no research has yet been conducted specifically on the relationship of posttraumatic growth to prayer functions among informal hospice caregivers.

Posttraumatic Growth and Spirituality

Researchers (Currier et al., 2013; Harris et al., 2010; Laufer & Solomon, 2006; Park et al., 2017; Shaw, Joseph, & Linley, 2005) have explored the connections between posttraumatic growth and spirituality, and recent studies have confirmed the findings of earlier studies that spirituality is a key component of posttraumatic growth (Dyer & Hagedorn, 2013; Torskenaes et al., 2015). For example, in an early study, Park et al. (1996) found that among a sample of college students, intrinsic religiousness (religion is the primary motive in life), was positively correlated with posttraumatic growth. Park et al. (1996) surmised that intrinsic religiousness fostered growth because religion aided the person to realize meaning in their distress.

Shaw et al. (2005) reviewed eleven empirical studies linking spirituality, religion, and posttraumatic growth and revealed that most studies identified spirituality and religion as helpful to people in crisis. Traumatic experiences led to a strengthening of spiritual and religious bonds in individuals, and posttraumatic growth was associated with positive religious coping, religious participation, and religious openness (Shaw et al., 2005). Laufer and Solomon (2006) found that Jewish adolescents deeply attached to their faith and subjected to terror strikes expressed higher incidences of posttraumatic growth, and Kira et al. (2006) observed that Muslim torture survivors who increased their faith by attending mosques more frequently displayed greater levels of posttraumatic growth.

In a theoretical article, McGrath (2011) argued that spirituality may represent a key component in posttraumatic growth and that a better understanding of the relationship between the two can have implications for the recovery of individuals for whom spirituality is important. For patients who have acquired brain injury, McGrath argued the necessity of comprehending the role that spirituality may play in growth beyond previous levels of functioning. In patients for whom spirituality is important, McGrath suggested that rehabilitation programs ought to include meaning-making frameworks for spiritually driven posttraumatic growth.

Currier et al. (2013) supported the associations between posttraumatic growth, religion, and bereavement. The researchers surveyed 369 young adults, divided into three groups: bereaved by a violent death (i.e. homicide), bereaved by a nonviolent death (i.e. illness); and nonbereaved. Findings of this study revealed that individuals in the two bereaved groups expressed greater religiousness, as measured by daily spiritual practices, such as prayer, and more posttraumatic growth than individuals in the nonbereaved group. Currier et al. concluded that religiousness can influence posttraumatic growth and healing in bereavement.

In their longitudinal study of posttraumatic growth in patients who survived cardiac surgery, Ai et al. (2013) found that preoperative religious coping factors, including prayer, positively influenced cardiac patients' posttraumatic growth following survival of life changing cardiac surgery. Findings from this study supported the researchers' hypothesis that cardiac patients' preoperative use of positive religious coping methods would foster posttraumatic growth after surgery (Ai et al., 2013). Findings also

suggested that engaging in positive religious coping could enrich individuals' bond with what they hold sacred. It is possible that enhancing this bond with the sacred, in conjunction with participating in the practice of faith-based coping strategies, such as prayer, can impact informal hospice caregivers' posttraumatic growth.

Denney et al. (2011) studied posttraumatic growth and spirituality in cancer survivors. The researchers were specifically interested in how individuals grew across spiritual domains after surviving cancer, which they referred to as posttraumatic spiritual growth. Through interviews with 13 participants, Denney et al. found that prayer played a vital role in the posttraumatic spiritual growth of cancer survivors. Most of the participants reported that dealing with cancer enhanced their prayer experiences, although it did not necessarily increase the duration or frequency of prayer. Also, survivors reported on the increased vigor of the prayer experiences, including increased concentration, intensity, and energy. Denney et al. also found that prayer became less ritualized and more integrated into the participants' daily lives, and that prayer was the primary way that many coped with cancer. Denney et al.'s findings support earlier research on the importance of prayer for individuals enduring adverse life events and of prayer's connection to growth after traumatic events.

Researchers have also examined religious coping as evident in written prayers in coping and posttraumatic growth. For example, Grosseohme et al. (2011) examined the prayers of adults written on behalf of their children in a pediatric hospital chapel. Analysis of prayer content showed that it was more common for individuals to write prayers seeking to gain a feeling of control over a situation and less common for seeking

comfort from God. The researchers also found that parents with the least amount of personal control over their child's situation wrote prayers more often, leading the researchers to conclude that although these individuals were appealing to a higher power, the act of writing prayers gave them some sense of personal agency and control. Grossoehme et al. recommended more research on the role of self-written prayer in helping individuals to gain a sense of control over adverse situations, thus aiding their coping and growth.

Prayer Functions

A USA Today/Gallup (2010) poll revealed that approximately 83% of surveyed Americans prayed, and believed that their prayers were heard and responded to by God. More than half (55%) of surveyed Americans said they prayed every day, while 23% said they prayed weekly or monthly, and 21% said they seldom or never prayed. Among people who were religiously unaffiliated, 21% said they prayed daily. Women (65%) were more likely than men (46%) to pray every day and older people (60%) were more likely than younger adults (45%) to pray daily (USA Today/Gallup, 2010). Typically, previous research has examined prayer as primarily in terms of the frequency with which a person prays.

Prayer is a vital aspect of religions worldwide, and is a commonly employed spiritual coping strategy, yet its role in the coping process is unclear (Park, Cohen, & Herb, 1990; Wachholtz & Sambamoorthi, 2011). Bade and Cook (1997, 2008) investigated prayer as a coping method to better comprehend its relationship with

adaptive mental health and identified four functions that prayer may serve in coping with challenging life events (see Table 2).

Table 2

Operational Definitions of Prayer Functions

Prayer Functions: Operational Definitions	
Provides Acceptance	Acknowledgement that the death is imminent.
Provides Calm and Focus	A positive atmosphere for their dying loved one.
Provides Assistance	Support in caring for their loved one.
Defer/Avoid	An adjournment for the forthcoming death and awaiting God's intervention.
Prayer Functions	Roles that prayer may serve in coping with challenge.

Note. Prayer Functions (Bade & Cook, 1997).

The functions that prayer may serve in the coping process are to provide acceptance, calm and focus, assistance, and defer/avoid. Bade and Cook (1997) remarked that prayers that function to provide acceptance, provide calm and focus, and provide assistance functions represent active coping strategies that promote adaptive psychological functioning; and prayers that defer/avoid promote a more deleterious coping strategy. Thus, for people who pray, using prayer for active coping and not for avoidant purposes may result in adaptive rather than maladaptive mental health outcomes. Harris, Schoneman, and Carrera (2005) measured anxiety control and trait anxiety among college students. Students who believed that prayer was providing assistance showed more control over their anxiety than students utilizing prayer to defer/avoid.

As prayer functions relate to this study, an informal hospice caregiver may utilize prayer so God provides acceptance and acknowledgement that the patient's death is

imminent, provides calm and focus to foster a positive atmosphere for their dying loved one, provides assistance and support in caring for the loved one, and/or to defer and avoid the forthcoming death in hope of God's intervention. Thus, Bade and Cook (1997, 2008) concluded that religious activities, such as prayer, can provide a sense of comfort and support in the face of challenging life events while shielding from the potentially maladaptive effects of those events. Partaking in prayer may be advantageous during the struggles associated with informal hospice caregiving. For religious individuals, prayer may provide an experience of connection with God on a personal level that helps them to feel less alone in their struggle (Denney et al., 2011; Harris et al., 2010).

Pursuit of much needed research focusing on identifying strategies, in particular, coping functions of prayer that may thwart informal caregiver distress and lead to posttraumatic growth, would greatly benefit the understudied subset of the informal caregiver population of home and hospital hospice informal caregivers. Moreover, an awareness of adaptive and maladaptive coping among informal hospice caregivers may lead to timely proactive clinical interventions that could prevent bereavement complications, such as persistent complex bereavement disorder (Boelen & Prigerson, 2007).

Prayer Functions and Posttraumatic Growth

Harris et al. (2010) attempted to distinguish prayer functions that may be associated with posttraumatic growth among 327 interpersonal (trauma deliberately perpetrated by another person, i.e., sexual assault) and noninterpersonal (trauma experienced without an intent to harm, i.e., terminal illness) trauma survivors from

various midwestern Christian churches. Harris et al. (2010) confirmed their hypothesis that praying for calm and focus was significantly related to higher levels of posttraumatic growth among survivors with a history of noninterpersonal trauma. Thus, survivors of noninterpersonal trauma, such as informal hospice caregiving, may effectively employ prayers for calm and focus to foster posttraumatic growth.

Tait et al. (2016) examined the connections between prayer, posttraumatic stress disorder, and depression in U.S. veterans of the Iraq and Afghanistan conflicts. The researchers surveyed 110 veterans and found that two prayer functions, praying for calm and focus and praying for assistance, were associated with decreases in depressive and posttraumatic stress disorder symptomatology (Tait et al., 2016). The findings showed that prayer might be an effective tactic for coping with and growing from adverse conditions, as well as for readjusting to civilian life.

As reported, research on prayer functions has suggested that prayer may play a significant role in the posttraumatic growth of individuals undergoing adverse circumstances. No known studies have explored the relationship between prayer functions and posttraumatic growth in the context of hospice care. This study intended to explore if prayer functions were associated with posttraumatic growth in the specific context of informal hospice care.

Informal Caregivers

Informal caregivers are unpaid, nonprofessional family or friends who care for loved ones that are unable to function independently (Kilbourn et al., 2011; Muraco & Fredriksen-Goldsen, 2011). An informal caregiver may be a woman, man, spouse,

partner, parent, child, friend, neighbor, other family member, or acquaintance who shares a close relationship with the ill individual (Muraco & Fredriksen-Goldsen, 2011).

According to Reinhard et al. (2015), the number of unpaid informal caregivers in 2009 was approximately 65.7 million or 28.5% of the U.S. population. Of this amount, approximately 80% of provided care was by an adult female family member (Rokach, Miller, Schick, & Bercovitch, 2014). The economic value of unpaid informal caregiving services was estimated at nearly \$450 billion per year (Baider & Surbone, 2014). This economic value is expected to rise since the aging U.S. population of 65+ years of age is projected to escalate from roughly 35 million in the year 2000 to roughly 71 million in the year 2030. By that year, it is projected that one in five adults will be 65 years or older (Rokach et al., 2014).

In their qualitative study of friends acting as informal caregivers of chronically ill lesbian, gay, and bisexual adults, Muraco and Fredriksen-Goldsen (2011) found that caregivers received benefits from the caregiving experience, suggesting a mutually beneficial relationship between care recipient and caregiver, and that the caregiving altered the relationship. Although the caregiving experience presented challenges for caregivers, it also provided them benefits, including an increased sense of personal satisfaction and appreciation, seeing themselves as a giving person, enjoying their bond with the care recipient, and seeing caregiving as aligning with their altruistic religious beliefs (Muraco & Fredriksen-Goldsen, 2011). Additionally, participants reported that the caregiving experience deepened and altered the relationship to the extent that friendship was more of a fictive kinship, fulfilling the role of chosen family. Muraco and

Fredriksen-Goldsen's (2011) study suggested that informal caregiving might have positive and religious implications for informal caregivers.

Informal Hospice Caregiving

Hospice

Hospice is a model for quality palliative rather than curative care for terminally ill patients and is characterized by the philosophical principles that dying is a natural process and that every person has the right to die with dignity and free of pain (Albright et al., 2014; Blum & Sherman, 2010; NHPCO, 2014). In 2014, approximately 1.6 to 1.7 million terminally ill Americans were enrolled in hospice (NHPCO, 2014).

Hospice care embraces a team-oriented approach to medical care that includes customized pain and symptom management along with emotional and spiritual assistance. Terminally ill patients, informal and professional hospice caregivers, and family members are all viewed holistically as components of an integrated unit of care in which each member contributes to patient care.

Hospice Caregiving Research

With an aging U.S. population, the number of informal caregivers utilizing home hospice services will grow. Soon it will no longer be a rare occurrence for patients to be cared for and die at home surrounded by loved ones (Blum & Sherman, 2010; Spilka & Ladd, 2012). Unpaid informal hospice caregivers, who are often family members and friends, provide approximately 80% of hospice patient care (Empeno et al., 2011).

Informal hospice caregiving can affect the biopsychosocial, emotional, and spiritual well-being of caregivers as they face end of life stressors (Kilbourn et al., 2011;

Pottie et al., 2014). For informal hospice caregivers, the anguish of the anticipated death, the physical burdens of caregiving, and the biological vulnerability to stress may combine to intensify emotional distress, especially if the care and bereavement periods are demanding and prolonged (Albright et al., 2014; Sanderson et al., 2013). While health care professionals are trained to handle extended care scenarios and the eventuality of patient death, informal hospice caregivers are not, even if they have recourse to counseling and other resources (Sanderson et al., 2013).

Many informal caregivers who have provided end of life care attest that despite their shattering losses, their bereavement experiences were also filled with joy, celebration, and opportunities for growth (Muraco & Fredriksen-Goldsen, 2011; Pottie et al., 2014). For example, Kilbourn et al. (2011) studied the effectiveness of the Caregiver Life Line, a telephone-based counseling program designed to help enhance the coping strategies of informal caregivers in home hospice situations. The program was aimed at integrating a sense of meaning into caregiving situations and enhancing coping skills. The researchers deemed a telephone-delivered intervention appropriate for home informal caregivers of hospice patients because of caregivers' reluctance to leave home for prolonged periods of time. In their single-group (25 caregivers) program, Kilbourn et al. (2011) found that informal hospice caregivers reported an elevated level of satisfaction and improved coping skills from the program.

Empeno et al. (2011) studied the effectiveness of an intervention program for informal caregivers of hospice patients—namely, the Hospice Caregiver Support Project, a program designed to provide in-home support and reduce stress among informal

caregivers of hospice patients in home settings. The researchers surveyed 123 informal caregivers before and after the intervention and found that the program reduced caregivers stress, the use of respite services, and the number of respite days taken by caregivers.

In their synthesis of articles on informal hospice caregiving, Pottie et al. (2014) identified several themes regarding coping among informal caregiving of hospice caregivers. The researchers found that such caregivers experienced significantly elevated levels of stress, anxiety, and depression when compared to noncaregivers (Pottie et al., 2014). In addition, religiosity and positive self-perception about the meaning of caregiving activities were shown to have protective and positive effects. Caregiver interventions were also found to help informal caregivers with coping strategies and improve caregivers' quality of life, supporting Kilbourn et al.'s (2011) findings on the effectiveness of a telephone-based counseling program for informal caregivers of hospice patients. Despite this research, the impact of informal caregiving of hospice patients on caregivers remains uncertain and research into enriching the informal hospice caregiving and bereavement experiences are needed.

Place of Death

There are several hospice settings that offer services to terminally ill persons. The home hospice setting allows for palliative care to be provided to the hospice patient in their home with family members assuming the role of primary, informal caregivers (Chung & Burke, 2013). The goal of home hospice is for an interdisciplinary team of healthcare professionals to support the family unit in attaining a desired degree of quality

of life for their loved one's passing (NHPCO, 2014). In doing so, a representative from the hospice team, typically the hospice nurse, provides abundant, expert, and compassionate aid to the informal caregiver by visiting regularly to assess the patient, provide medications, and offer further care and recommendations as needed (Candy, Holman, Leurent, Davis, & Jones, 2011; Sanderson et al., 2013). Following death, hospice care then focuses on caregiver bereavement.

Another hospice option is an inpatient/residential facility, which offers 24-hour care in a home-like environment for patients wishing to die at home but who cannot (Chung & Burke, 2013). Should the hospice patient dwell in an assisted living or nursing home facility, hospice care is delivered in that facility, and healthcare professionals accept the position of primary caregivers (Chung & Burke, 2013). A freestanding hospice facility is not part of a hospital or skilled nursing facility. Hospice facilities are typically located in suburban areas and offer private, family-oriented rooms in a home-like setting that permits 24-hour visitation. Such facilities deliver care similar to inpatient and residential care, with healthcare professionals in the role of primary caregivers (Chung & Burke, 2013). In contrast, a general inpatient facility leases one floor in a hospital building and generally provides acute level care. Typically, hospital healthcare professionals make the determination to move the hospice patient to this floor to remain until death or discharged to another setting best suited to their needs.

Wright et al. (2010) interviewed terminally ill patients using the Structured Clinical Interview from the Diagnostic and Statistical Manual of Mental Disorders, (4th ed.). Results indicated that terminally ill patients in a hospital or Intensive Care Unit had

poorer quality of life compared to terminally ill patients with or without hospice. Wright et al. (2010) reported that place of death can impact the quality of life at the end of life; it can also influence the development of psychiatric disorders among bereaved informal caregivers. At the six-month post loss follow-up, the caregivers were adjusting normally and were not considered diagnosable per the persistent complex bereavement disorder set of guidelines (Prigerson et al., 2009; Wright et al., 2010). This study provides evidence that home hospice may promote an adaptive rather than maladaptive experience with dying, death, and bereavement. Research that explores growth among informal hospice caregivers is needed to advance an understanding of an experience that a sizeable portion of the U.S. population will experience at least once in their lifetime.

Summary

Informal hospice caregiving can have both negative (stress, distress, and reduced quality of life) and positive (posttraumatic growth) consequences for caregivers. With an aging U.S. population, the number of informal hospice caregivers will increase, and, consequently, more research is needed to provide insight into how this rapidly growing yet understudied subset of caregiver's care for their terminally ill loved ones.

Promoting informal hospice caregiver well-being has emerged as a national public health priority (Family Caregiver Alliance, 2015). Caregivers may utilize prayer that provides assistance, provides calm and focus, and provides acceptance to actively cope with their experience. Research has demonstrated that adversity can enhance prayer experiences, leading to posttraumatic spiritual growth (Denney et al., 2011; Dixon & Cook, 2011); that writing prayers pertaining to adverse situations can afford individuals a

sense of control over them (Grossoehme et al., 2011); and that prayer can reduce the incidence of depression and posttraumatic stress disorder in combat veterans (Tait et al., 2016). Prayer may also be connected to posttraumatic growth in informal caregivers of hospice patients.

It is unclear how informal caregivers cope with the hospice experience and subsequent bereavement. An understanding of factors that promote posttraumatic growth and a positive caregiving experience within a hospice setting is necessary for the promotion of effective interventions. Scant research exists assessing the impact of informal hospice caregiving on bereavement, and even less examining the role of prayer in creating a positive caregiving experience and bereavement for informal caregivers of hospice patients. Bade and Cook (1997, 2008) proposed that people make use of prayer when confronting challenging life circumstances for numerous functions. Research connecting prayer coping functions and posttraumatic growth is important for identifying the potential positive impact of prayer in motivating positive psychological change and ameliorating the potential negative effects of the informal caregiver experience.

In this study, home and hospital hospice settings were examined to determine if prayer functions were associated with posttraumatic growth among informal hospice caregivers. The objective of this literature review was to survey and discuss literature on posttraumatic growth, prayer functions, and informal hospice caregiving. A review of the literature confirms that there is a gap in research as to the connections between prayer coping functions and posttraumatic growth among informal caregivers in hospice settings. Chapter 3 covers the methodology used in this study, including the research

design, sample, and data analysis strategy. Chapter 3 will also include consideration of the role of the researchers and ethical issues pertaining to the study.

Chapter 3: Research Method

Introduction

Posttraumatic growth has been associated with perceived benefits and a positive psychological (cognitive-emotional) transformation in response to a variety of adverse life circumstances. Furthermore, a growing body of research has linked posttraumatic growth and prayer in bereavement (Cadell, et al., 2003; Michael & Cooper, 2013; Pottie et al., 2014; Tait et al., 2016). However, no known studies have been conducted on functions of prayer with domains of posttraumatic growth in a hospice care setting. Hospice care is associated with better quality of life at the end of a patient's life (ap Siôn & Nash, 2013; Pottie et al., 2014; Wright et al., 2010), so it is significant to examine the impact of prayer functions on posttraumatic growth and bereavement among informal caregivers in hospice care. The aim of this study was to investigate the relationship between prayer coping functions and domains of posttraumatic growth among a sample of home and hospital informal hospice caregivers. This research can provide information on the coping functions of prayer that may promote growth following a challenging life event.

In this chapter, the research design is outlined and justified. The population of interest and sampling procedures are also identified. Additionally, data collection procedures and instrumentation are presented. Further, I discuss the data analysis plan that determined the methods to address the research questions. The chapter concludes with a discussion of threats to validity, ethical procedures, and a summary.

Research Design and Rationale

This study had a quantitative, correlational, cross-sectional, survey research design to answer the research questions. The following research questions and hypotheses were examined:

Research Question 1: Among informal hospice caregivers, is there a relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender?

H₀1: Among informal hospice caregivers, there is no relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender.

H₁1: Among informal hospice caregivers, there is a relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender.

Research Question 2: Do home and hospital informal hospice caregivers differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life)?

H₀2: Home and hospital informal hospice caregivers do not differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

H₁₂: Home and hospital informal hospice caregivers do differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

Research Question 3: Do informal hospice caregivers who pray and informal hospice caregivers who do not pray differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life)?

H₀₃: Informal hospice caregivers who pray and informal hospice caregivers who do not pray do not differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

H₁₃: Informal hospice caregivers who pray and informal hospice caregivers who do not pray do differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

Rationale

Quantitative research studies involve an examination of numerically measurable constructs (Creswell, 2014; Howell, 2013). This study involved a nonexperimental design because there was no random assignment to treatment and control groups. The study's research questions were operationalized by an online questionnaire that included sections assessing demographics, prayer functions, and posttraumatic growth. The demographic questionnaire (Appendix A) served to characterize the informal hospice caregiver and measure the covariates. Informal hospice caregivers completed an online questionnaire and their responses were coded for statistical analysis (see Meadows, 2003). The covariates that were controlled were age group and gender.

To address Research Question 1, a hierarchical linear regression was conducted to evaluate the relationship between the predictor variables (frequency of prayer and prayer functions—provides acceptance, provides calm and focus, provides assistance, and defer/avoid), as measured by the Prayer Functions Scale (Bade & Cook, 1997), and the continuous criterion variable (overall posttraumatic growth), as measured by the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), while controlling for the effects of age and gender.

The Hotelling T^2 inferential test was utilized to address Research Question 2 (Wiesner, 2006). The independent variable was place of hospice care with two levels: home and hospital hospice care. The multiple continuous dependent variables included the Posttraumatic Growth Inventory subscales (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life; Tedeschi & Calhoun, 1996).

The Hotelling T^2 inferential test was utilized to address Research Question 3 (Wiesner, 2006). The independent variable was prayer group with two levels: informal hospice caregivers who practice prayer and informal hospice caregivers who do not practice prayer. The multiple continuous dependent variables included the Posttraumatic Growth Inventory subscales (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life; Tedeschi & Calhoun, 1996).

Instrumentation

Posttraumatic Growth Inventory

Posttraumatic growth is defined in the current study as the positive psychological (cognitive—emotional) transformation experienced as a result of the struggle to process a

challenging life event, which was measured by the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). Tedeschi and Calhoun (1996) observed that in confronting an adverse circumstance, people may experience posttraumatic growth in (a) relating to others, (b) new possibilities, (c) personal strength, (d) spiritual change, and (e) appreciation of life (Tedeschi & Calhoun, 1995).

The Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) is a 21-item self-report survey measuring facets of positive change. Using principal component analysis, Tedeschi and Calhoun (1996) pinpointed five empirically derived subscales in which posttraumatic growth could be measured. For each item on the survey, informal caregivers were invited to indicate the degree to which change occurred in their lives because of their informal hospice caregiving. The items of the Posttraumatic Growth Inventory are based on a 5-point Likert-type scale: 1 = *I did not experience this change as a result of my crisis*, 2 = *I experienced this change to a small degree as a result of my crisis*, 3 = *I experienced this change to a moderate degree as a result of my crisis*, 4 = *I experienced this change to a great degree as a result of my crisis*, and 5 = *I experienced this change to a very great degree as a result of my crisis* (Tedeschi & Calhoun, 1996). Item scores were averaged to form scale scores ranging from 0 to 105, with higher scores signifying higher perceptions of positive change following distress. Table 3 displays sample items and reliability values for each Posttraumatic Growth Inventory subscale.

Table 3

Sample Items of the Posttraumatic Growth Inventory

Variable	Sample Items	Number of Items	α
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Relating to Others	“I have a greater sense of closeness with others.”	7	.85
New Possibilities	“I established a new path for my life.”	5	.84
Personal Strength	“I discovered that I’m stronger than I thought.”	4	.72
Spiritual Change	“I have a stronger religious faith.”	2	.85
Appreciation of Life	“I changed my priorities about what is important in life.”	3	.67

Note. Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

The full scale of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) revealed acceptable internal reliability (21 items; $\alpha = .90$). Moreover, each of the five subscales displayed acceptable internal consistency: relating to others ($\alpha = .85$), new possibilities ($\alpha = .84$), personal strength ($\alpha = .72$), spiritual change ($\alpha = .85$), and appreciation of life ($\alpha = .67$). The test—retest reliability of the Posttraumatic Growth Inventory over a 2-month period was adequate (.71; Tedeschi & Calhoun, 1996). The discriminant validity of the Posttraumatic Growth Inventory subscales was substantiated through their separate associations with additional constructs (Tedeschi & Calhoun, 1996).

Prayer Functions Scale

Prayer functions are defined as the roles that prayer may serve in coping with challenging life events, which were measured by the Prayer Functions Scale (Bade & Cook, 1997). Bade and Cook (1997) proposed that people make use of prayer when confronting challenging life events that (a) *provides acceptance* and acknowledgement of the difficult situation; (b) *provides calm and focus* for nurturing a positive atmosphere to contend with the hardship; (c) *provides assistance*, support, and care during adversity;

and (d) *defer/avoid* responsibility and seek divine intercession to resolve the challenging event.

The Prayer Functions Scale (Bade & Cook, 1997) is a 58-item self-report survey with four empirically derived subscales measuring facets of prayer. For each item on the survey, informal caregivers who pray were invited to indicate when they used prayer to deal with their informal hospice caregiving. The items of the Prayer Functions Scale (Bade & Cook, 1997) are based on a 5-point Likert-type scale: 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *regularly*, and 5 = *frequently*. Overall scores range from 1 to 290, with item scores averaged to form scale scores and higher scores signifying more use of a particular prayer. Moreover, the four subscales were determined to have established internal consistencies corresponding to the following criteria: provides acceptance ($\alpha = .94$), provides calm and focus ($\alpha = .89$), provides assistance ($\alpha = .92$), and defer/avoid ($\alpha = .86$). Table 4 displays sample items and reliability values for each Prayer Functions Scale subscale (Bade & Cook, 1997).

Table 4

Sample Items of the Prayer Functions Scale

Variable	Sample Items	Number of Items	α
Provides Acceptance	“Give me understanding to accept God’s will.”	17	.94
Provides Calm and Focus	“Find peace within myself.”	11	.89
Provides Assistance	“Pray for God to change the situation.”	14	.92
Defer/Avoid	“Let God take care of it for me.”	4	.86

Note. Prayer Functions Scale (Bade & Cook, 1997).

Methodology

Population

The target population were female and male informal caregivers who cared for their terminally ill loved ones in home or hospital hospice settings.

Sampling

A sample of convenience was employed to collect data from informal hospice caregivers. Engaging this sample entailed inviting informal hospice caregivers that were available, willing, and assumed to be representative of the qualities of the target population to complete an online questionnaire that included sections assessing demographics, prayer functions, and posttraumatic growth. Thus, to meet eligibility, caregivers met the following inclusion criteria: they (a) resided in the United States/territories, (b) were 18 years or older, (c) possessed a proficient reading knowledge of English, (d) provided home or hospital hospice care to a loved one until the death of the latter, (e) were willing to explore their hospice caregiving experience, and (f) were willing to answer questions regarding prayer practices and posttraumatic growth

experiences. Potential participants were excluded from the data collection process if they did not meet the inclusion criteria.

This study utilized a hierarchical linear regression and Hotelling T^2 inferential tests. A generally accepted *alpha* level of .05 together with a power of .80 were employed (Cohen, 1988, 1992). The statistical software G*Power 3.1.7 was used to input the above parameters utilizing a hierarchical linear regression with seven predictor variables, a sample of 103 participants was sufficient (Faul, Erdfelder, Buchner, & Lang, 2014).

Sampling Procedure

Informal hospice caregivers were recruited for online study participation through the following resource websites: Family Caregiver Alliance, National Center on Caregiving (<https://www.caregiver.org>), and Amazon Mechanical Turk (<https://www.mturk.com>). These organizations were chosen because they offered an effective way to recruit a sample of informal caregivers that met the requirements for participation. The caregivers willing to participate in this research study were directed from the resource websites to an electronic version of the survey packet generated on SurveyMonkey.

By following the link to participate in the research study, informal hospice caregivers were directed to the informed consent page which provided the necessary details about the research study. A copy of the informed consent was available for saving and/or printing. Informal caregivers who clicked *Proceed* on the Informed Consent page were directed and instructed to fill out an online questionnaire that included sections assessing demographics, prayer functions, and posttraumatic growth.

Once the participants finished completing the online questionnaire, the data were saved in electronic form on the secure servers of SurveyMonkey and the researcher's private computer on a password-protected flash drive. When enough informal caregivers completed the online questionnaire, scoring of all test data and correlational data analyses was completed using IBM SPSS (see George & Mallery, 2016; IBM Corporation, 2015).

Data Analysis Plan

The data collected from the online questionnaire that included sections assessing demographics, prayer functions, and posttraumatic growth, were entered and analyzed using IBM SPSS (see George & Mallery, 2016; IBM Corporation, 2015). Descriptive statistical analyses presented, illustrated, and summarized the data. Frequencies and percentages described the trends of the demographic and nominal/ordinal-level variables. Measures of central tendency described the continuous variables. Visual inspections of the descriptive data were depicted through histograms. Cronbach's alpha test of reliability was utilized to evaluate the internal consistency of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) and Prayer Functions Scale (Bade & Cook, 1997) scale and subscales. A Pearson's correlation matrix examined two-way relationships between the scales and subscales. The *alpha* values were revealed utilizing the parameters in which $\alpha > .9$ is excellent, $\alpha > .8$ is good, $\alpha > .7$ is acceptable, $\alpha > .6$ is questionable, $\alpha > .5$ is poor, and $\alpha < .5$ is unacceptable (see George & Mallery, 2016).

Hierarchical Linear Regression

To address Research Question 1, a hierarchical linear regression was conducted to evaluate the relationship between the predictor variables (frequency of prayer and prayer

functions) and the continuous criterion variable (overall posttraumatic growth) while controlling for the effects of age and gender. Prayer functions (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) were measured using the Prayer Functions Scale (Bade & Cook, 1997) and overall posttraumatic growth was measured using the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Within the hierarchical linear regression model, the control variables were entered into the first block and the predictor variables were entered into the second block. Using this method, the regression model first calculated how much variance in the criterion variable was accounted for by the covariates. Then the model measured how much additional variance was explained by including the predictor variables. The change in the coefficient of determination, or R^2 , was interpreted as the amount of additional variance explained by the predictor.

Prior to analysis, the assumptions of normality, homoscedasticity, and absence of multicollinearity were measured for the sample. Normality was checked by a P-P scatterplot and assessed whether the residuals resembled a normal-distribution. Homoscedasticity was examined with a residuals scatterplot and checked that the variability in scores were similar for all values of the dependent variable (Pallant, 2013). An absence of multicollinearity verified that the predictor variables were not too closely related. Variance Inflation Factors were examined to substantiate the assumption. Any Variance Inflation Factors values greater than 10 suggested a relationship between the predictors, and the assumption was therefore not met (Stevens, 2009).

Hotelling's T^2 Test

To examine Research Question 2, a Hotelling's T^2 test for independent samples was conducted. A Hotelling's T^2 is appropriate when examining differences in multiple continuous dependent variables between two groups (Tabachnick & Fidell, 2013). The independent grouping variable was place of hospice care (home or hospital). The dependent variables were the scores on the Posttraumatic Growth Inventory subscales (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life; Tedeschi & Calhoun, 1996).

The Hotelling T^2 inferential test was also utilized to address Research Question 3 (Wiesner, 2006). The independent grouping variable was prayer practices (informal caregivers who prayed or did not pray). The dependent variables were scores on the Posttraumatic Growth Inventory subscales (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life; Tedeschi & Calhoun, 1996).

Prior to analysis, the assumptions of normality, homogeneity of variance, and homogeneity of covariance were assessed. The normality assumption was tested by Kolmogorov-Smirnov tests, which compare the research data to a theoretical bell-shaped distribution. Homogeneity of variance was tested by Levene's tests, which examined that the spread of data was approximately equal between the groups. Nonsignificance for the assumption analyses indicated that the assumptions were met.

Threats to Validity

Threats to External Validity

Use of a convenience sampling method can produce selection bias in the choice of participants (Lohr, 2010). There is also the potential threat for response bias in which participants do not provide truthful responses. Additional caution was used when interpreting the statistical findings of the data results, and caution was taken to not presume that the results can be automatically linked to the population of interest.

Threats to Internal Validity

All research methodologies contain inherent flaws, and the selected method will regulate the conclusions that can be drawn (Scandura & Williams, 2000). Quantitative research allows for statistical examination of hypotheses. However, quantitative studies and surveys are limited in their usefulness for examining the multiplicity of underlying beliefs and perceptions among participants. Additionally, unidentified confounding variables may alter the relationship examined between the variables of interest (Howell, 2013). The potential effects of all unmeasured covariates will be recognized in the interpretation of statistical findings.

Threats to Construct Validity

To limit threats to construct validity, acceptable definitions, based on those in the literature, were used to provide an explanation of the variables. Each variable was operationalized using scales that have been previously evaluated for construct validity. Standardized measures that have been validated through previous research were employed.

Ethical Considerations

Researchers have an ethical and moral responsibility to inform and protect all participants involved in the sampling process (Bloomberg & Volpe, 2012). Ethical guidelines identified by an Institutional Review Board, and by federal regulations, were strictly followed. Prior to conducting the research, permission to proceed was obtained from the Institutional Review Board (approval # 04-23-18-0243329). Moreover, considerations for this research include confidentiality and informed consent for informal caregivers recruited from Family Caregiver Alliance and Amazon Mechanical Turk. Permission to use the Posttraumatic Growth Inventory was granted by Dr. Richard G. Tedeschi, PhD (see Appendix B). Permission to use the Prayer Functions Scale was granted by Dr. Stephen W. Cook, PhD (see Appendix C). Extraneous data, such as names, phone numbers, and e-mail addresses were deidentified to ensure anonymity. Instead, participants were assigned a unique numeric identifier. Research data were securely stored on a flash drive and hard drive. Data were locked in a file, as is standard practice, within my dwelling. Furthermore, the data will be securely maintained for a duration of 5 years following the completion of research, at which point all relevant files will be permanently destroyed.

Summary

The purpose of this quantitative study was to address the gap in the research by exploring the relationship between prayer functions and domains of posttraumatic growth among informal caregivers while considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or

did not pray). This methodology chapter described the study's quantitative research design and rationale. The population of interest and inclusion criteria were identified for sampling. A convenience sample was used to draw potential participants, who were given an online questionnaire that included sections assessing demographics, prayer functions, and posttraumatic growth, during the data collection process. The data analysis plan was discussed, identifying hierarchical linear regression and the Hotelling's T^2 inferential tests as the key statistical analyses to address the research questions. The chapter concluded with threats to validity and ethical considerations. Chapter 4 discusses the findings of the data analyses. Each research question was statistically analyzed and the hypotheses rejected or supported.

Chapter 4: Results

Introduction

The aim of this study was to investigate the relationship between prayer functions and domains, or realms of an individual's life, as they pertain to posttraumatic growth among a sample of home and hospital informal hospice caregivers. In this chapter, the findings of the data analysis are presented. The sample was first reduced for nonresponses and outlying responses. The trends of the nominal- and ordinal-level variables are presented through frequencies and percentages. Means and standard deviations were used to examine the descriptive level data. Hierarchical linear regression and Hotelling's T^2 tests were the primary inferential analyses that were used to address the research questions. The initial significance for all inferential analyses were at the generally accepted level of $\alpha = .05$.

Descriptive Statistics

A total of 255 informal hospice caregivers were recruited from the Family Caregiver Alliance ($n = 10$) and Amazon Mechanical Turk ($n = 245$) websites and consented to participate in this research study. Among these cases, 90 caregivers indicated that they did not pray. These 90 caregivers did not respond to the Prayer Functions Scale. However, both samples ($n = 255$) responded to the Posttraumatic Growth Inventory.

All caregivers resided in the United States or U.S. territory, and the sample was distributed between 172 males (67.5%) and 83 females (32.5%). Most of the sample consisted of caregivers who were 20 to 29 years old ($n = 120$, 47.1%) and 30 to 39 years

old ($n = 84$, 32.9%). Most of the sample was White/Caucasian ($n = 148$, 58.0%) and Asian/Pacific Islander ($n = 49$, 19.2%). The primary relationships to the patients consisted of spouses/partners ($n = 56$, 22.0%), parents ($n = 72$, 28.2%), children ($n = 42$, 16.5%), and friends ($n = 32$, 12.5%). Most of the caregivers identified as Catholic ($n = 64$, 25.1%), Protestant/ Christian ($n = 66$, 25.9%), Atheist/Agnostic ($n = 49$, 19.2%), Hindu ($n = 33$, 12.9%), or as having no religion ($n = 22$, 8.6%). Location of hospice care was distributed among home ($n = 165$, 64.7%), hospital ($n = 80$, 31.4%), and intensive care unit ($n = 10$, 3.9%) environments. Length of care was heavily distributed toward the shorter time frames: < 3 months ($n = 67$, 26.3%) and 3 to 6 months ($n = 96$, 37.6%). Time since death was evenly distributed among all the time frames. Of the caregivers, a total of 165 prayed (64.7%), and 90 did not (35.3%). Prayer frequency ranged from rarely ($n = 15$, 5.9%), sometimes ($n = 45$, 17.6%), regularly ($n = 65$, 25.5%), and frequently ($n = 40$, 15.7%). Table 5 presents the frequencies and percentages of the nominal- and ordinal-level variables.

Table 5

Frequency Table for Nominal- and Ordinal-Level Variables

Variable	<i>n</i>	%
Gender		
Female	83	32.5
Male	172	67.5
Age Group (years)		
18 to 19	1	0.4
20 to 29	120	47.1
30 to 39	84	32.9
40 to 49	25	9.8
50 to 59	18	7.1
60 to 69	6	2.4
70 and older	1	0.4
Ethnicity		
White/Caucasian	148	58.0
Asian/Pacific Islander	49	19.2
Black/African American	23	9.0
Hispanic/Latino	17	6.7
American Indian/Alaskan Native	16	6.3
No response	2	0.8
Relationship to Patient		
Parent	72	28.2
Spouse/Partner	56	22.0
Child	42	16.5
Friend	32	12.5
Sibling	17	6.7
Grandparent	16	6.3
Aunt/Uncle/Niece, Nephew/Cousin/In-Law	9	3.5
Grandchild	8	3.1
Other (“Doula,” “family”)	2	0.8
No response	1	0.4
Religion		
Atheist/Agnostic	49	19.2
Buddhist	1	0.4
Catholic	64	25.1
Christian/Protestant	66	25.9
Greek/Russian Orthodox	1	0.4
Hindu	33	12.9
Jewish	2	0.8
Muslim	9	3.5
None	22	8.6
Other (“Unitarian/Universalist,” “spiritual”)	2	0.8
Prefer not to answer	6	2.4

(table continues)

Variable	<i>n</i>	%
Location of Hospice Care		
Home	165	64.7
Hospital	80	31.4
Intensive Care Unit	10	3.9
Length of Care		
< 3 months	67	26.3
3 to 6 months	96	37.6
6 to 9 months	24	9.4
9 months to 1 year	21	8.2
1 to 2 years	32	12.5
> 2 years	15	5.9
Time Since Death		
< 3 months	47	18.4
3 to 6 months	52	20.4
6 to 9 months	23	9.0
9 months to 1 year	24	9.4
1 to 2 years	53	20.8
> 2 years	55	21.6
No response	1	0.4
Prayer Practices		
Informal caregivers who prayed	165	64.7
Informal caregivers who did not pray	90	35.3
Prayer Frequency		
Rarely	15	5.9
Sometimes	45	17.6
Regularly	65	25.5
Frequently	40	15.7
No response	90	35.3

Note. Due to rounding errors, percentages may not equal 100%.

The scales from the Posttraumatic Growth Inventory and Prayer Functions Scale were calculated through averages of the respective survey items. The reliability of all the scales met the acceptable threshold ($\alpha > .70$). The descriptive statistics of the variables are presented in Table 6.

Table 6

Summary Statistics for Variables of Interest

Variable	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>	α	# of Items
Posttraumatic Growth Inventory							
Relating to Others	255	0.00	5.00	3.22	0.95	0.86	7
New Possibilities	255	0.00	5.00	3.00	1.02	0.80	5
Personal Strength	255	0.25	5.00	3.43	0.95	0.75	4
Spiritual Change	255	0.00	5.00	2.71	1.51	0.73	2
Appreciation of Life	255	0.67	5.00	3.45	0.93	0.74	3
Overall Posttraumatic Growth	255	0.43	5.00	3.19	0.82	0.92	21
Prayer Functions Scale							
Provides Acceptance	165	0.24	4.00	2.57	0.69	0.92	17
Provides Calm and Focus	165	0.18	4.00	2.67	0.67	0.88	11
Provides Assistance	165	0.57	4.00	2.71	0.65	0.91	14
Defer/Avoid	165	0.00	4.00	2.58	0.85	0.80	4

Tests of Hypotheses**Research Question 1**

Research Question 1: Among informal hospice caregivers, is there a relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender?

H_01 : Among informal hospice caregivers, there is no relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and

focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender.

*H*₁1: Among informal hospice caregivers, there is a relationship between frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and in overall posttraumatic growth, while controlling for age group and gender.

To address Research Question 1, a hierarchical linear regression was conducted to evaluate the relationship between the predictor variables (frequency of prayer and prayer functions subscales) and the continuous criterion variable (overall posttraumatic growth) while controlling for the effects of age group and gender. Age group was an ordinal variable and was dummy coded with 18 to 29 years old being treated as the reference group. Gender was a nominal variable with female caregivers treated as the reference group.

Assumptions. The assumptions of normality of residuals, homoscedasticity of residuals, and absence of multicollinearity were first tested. The normality assumption was tested using a normal P-P plot. The residuals closely followed the normality trend line, suggesting that the assumption of normality was met (see Figure 1). The assumption of homoscedasticity was met due to random scatter in the distribution of the residuals (see Figure 2).

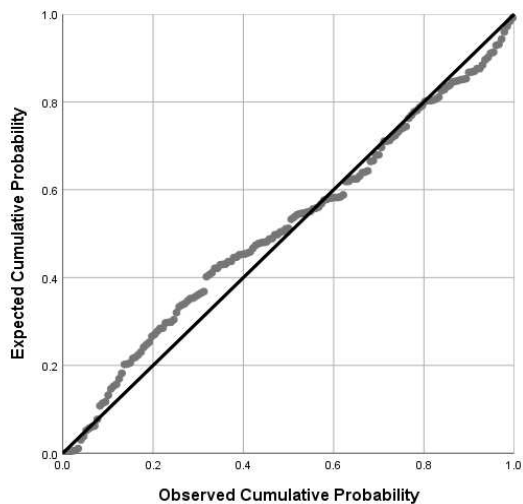


Figure 1. P-P scatterplot testing normality.

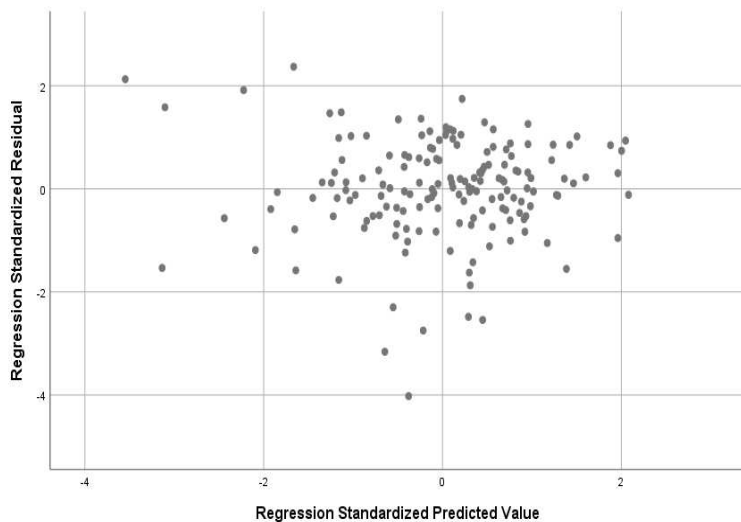


Figure 2. Residuals scatterplot testing homoscedasticity.

Variance inflation factors were used to test the assumption of absence of multicollinearity between the variables. Variance inflation factors of 10 are typically considered the maximum upper limit and a violation of the absence of multicollinearity assumption (Menard, 2009). All predictors in the regression model had variance inflation

factors lower than 10, suggesting that the assumption of absence of multicollinearity was met. Table 7 presents the variance inflation factors for each predictor in the model.

Table 7

Variance Inflation Factors for Predictor Variables

Variable	Variance Inflation Factors
Age Group (reference: 18 to 29 years)	
30 to 39	1.24
40 to 49	1.31
50 to 59	1.26
60 to 69	1.16
Gender (reference: female)	1.28
Prayer Frequency	1.29
Prayer Functions	
Provides Acceptance	5.50
Provides Calm and Focus	3.38
Provides Assistance	4.75
Defer/Avoid	1.89

Hierarchical regression. The results of the first step of the linear regression model were statistically significant, $F(5, 159) = 2.36, p = .042, R^2 = .069$, suggesting that there is a collectively significant relationship between age group, gender, and posttraumatic growth. Age group (50 to 59 years) was a statistically significant predictor in the model, $t = -2.10, p = .037$, suggesting that informal caregivers aged 50 to 59 years old scored approximately 0.53 units less on posttraumatic growth than informal caregivers aged 18 to 29 years old.

The results of the second step of the linear regression model were statistically significant, $F(10, 154) = 12.51, p < .001, R^2 = 0.448$, suggesting that there is a collectively significant relationship between frequency of prayer and prayer functions

subscales of provides acceptance, provides calm and focus, provides assistance, and defer/avoid, while controlling for age group and gender. The coefficient of determination, R^2 , increased by 37.9 % between Steps 1 and 2, suggesting that 37.9 % additional variance in posttraumatic growth could be accounted for by the predictor variables beyond what is explained by the covariates alone.

Praying for calm and focus was a statistically significant predictor in the model, $t = 3.57, p < .001$, suggesting that with every one-unit increase in calm and focus, posttraumatic growth increased by approximately 0.47 units. The null hypothesis for Research Question 1 was rejected. Table 8 summarizes the results of the regression model.

Table 8

Hierarchical Linear Regression between Frequency of Prayer, Prayer Functions Subscales, and Posttraumatic Growth

Predictor	<i>B</i>	SE	<i>B</i>	<i>t</i>	<i>p</i>
Step 1					
Age Group (reference: 18 to 29 years)					
30 to 39	0.24	0.14	.14	1.73	.086
40 to 49	-0.13	0.21	-.05	-0.63	.531
50 to 59	-0.53	0.25	-.17	-2.10	.037
60 to 69	-0.35	0.41	-.07	-0.84	.403
Gender (reference: female)	0.01	0.14	.01	0.07	.944
Step 2					
Age Group (reference: 18 to 29 years)					
30 to 39	0.15	0.11	.09	1.33	.185
40 to 49	-0.00	0.17	-.00	-0.02	.983
50 to 59	-0.07	0.20	-.02	-0.34	.733
60 to 69	-0.01	0.33	-.00	0.04	.968
Gender (reference: female)	0.09	0.11	.05	0.78	.438
Frequency of prayer	0.00	0.06	.00	0.03	.975
Prayer Functions					
Provides Acceptance	0.18	0.16	.16	1.14	.258
Provides Calm and Focus	0.47	0.13	.39	3.57	<.001
Provides Assistance	0.04	0.16	.03	0.23	.820
Defer/Avoid	0.12	0.08	.12	1.51	.133

Note. Results were controlled for age and gender. Step 1: $F(5, 169) = 2.36$, $p = .042$, $R^2 = .069$; Step 2: $F(10, 154) = 12.51$, $p < .001$, $R^2 = .448$. Significant values are bolded.

Research Question 2

Research Question 2: Do home and hospital informal hospice caregivers differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life)?

H_02 : Home and hospital informal hospice caregivers do not differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

H_12 : Home and hospital informal hospice caregivers do differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

A Hotelling's T^2 test for independent samples was conducted to examine Research Question 2. The independent grouping variable is location of hospice care (home or hospital). The dependent variables are scores on the Posttraumatic Growth Inventory domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life; Tedeschi & Calhoun, 1996).

Assumptions. Prior to running the analysis, the assumptions of normality and homogeneity of variance were assessed through examination of the KS test and Levene's test, respectively. As calculated by the KS tests, the normality assumption was not met (all $p < .05$). However, inferential analyses were robust to violations of normality, especially when the sample size is larger than 50 (Howell, 2013). The assumption for homogeneity of variance was met for personal strength and appreciation of life (both $p > .05$). The assumption was not met for relating to others, new possibilities, or spiritual

change (all $p < .05$). Due to the assumption not being met for these three variables, the statistically significant alpha level in the respective univariate analyses was reduced in half ($\alpha = .025$).

Multivariate f test. The results of the multivariate F test indicated statistical significance for location of hospice care and posttraumatic growth, Hotelling's $T^2 = 32.89$, $F(5, 249) = 6.61$, $p < .001$, partial $\eta^2 = .117$, suggesting that there were significant differences in posttraumatic growth between home and hospital informal hospice caregivers. Univariate analyses were used to examine each variable by location of hospice care.

Univariate tests. The results of the univariate test for new possibilities were statistically significant, $F(1, 253) = 7.84$, $p = .006$, partial $\eta^2 = .030$, suggesting that there were significant differences in new possibilities scores by location of hospice care. Hospital hospice caregivers ($M = 3.24$) scored significantly higher on new possibilities in comparison to home informal hospice caregivers ($M = 2.87$).

The results of the univariate test for spiritual change were statistically significant, $F(1, 253) = 13.40$, $p < .001$, partial $\eta^2 = .050$, suggesting that there were significant differences in spiritual change scores by location of hospice care. Hospital hospice caregivers ($M = 3.17$) scored significantly higher on spiritual change in comparison to home informal hospice caregivers ($M = 2.46$).

The results of the univariate test for appreciation of life were statistically significant, $F(1, 253) = 4.28$, $p = .040$, partial $\eta^2 = .017$, suggesting that there were significant differences in appreciation of life scores by location of hospice care. Home

informal hospice caregivers ($M = 3.54$) scored significantly higher on appreciation of life in comparison to hospital hospice caregivers ($M = 3.29$).

The results of the univariate tests were not statistically significant for relating to others or personal strength by location of hospice care. The null hypothesis for Research Question 2 was rejected. The findings of the Hotelling's T^2 and the univariate tests are presented in Tables 9 and 10. The descriptive statistics are presented in Table 11.

Table 9

Hotelling's T^2 for Posttraumatic Growth by Location of Hospice Care

Term	Hotelling's T^2	$F(5, 249)$	p	partial η^2
Location of Hospice Care	32.89	6.61	<.001	.117

Note. Significant values are bolded.

Table 10

Univariate Tests for Posttraumatic Growth by Location of Hospice Care

Term	Dependent Variable	$F(1, 253)$	p	partial η^2
Location of Hospice Care	Relating to Others	1.52	.220	.006
	New Possibilities	7.84	.006	.030
	Personal Strength	0.36	.549	.001
	Spiritual Change	13.40	<.001	.050
	Appreciation of Life	4.28	.040	.017

Note. Significant values are bolded.

Table 11

Means and Standard Deviations for Posttraumatic Growth by Location of Hospice Care

Variable	Location of Hospice Care	<i>M</i>	<i>SD</i>	<i>N</i>
Relating to Others	Home	3.17	1.03	165
	Hospital	3.32	0.78	90
	Total	3.22	0.95	255
New Possibilities	Home	2.87	1.11	165
	Hospital	3.24	0.81	90
	Total	3.00	1.02	255
Personal Strength	Home	3.46	0.99	165
	Hospital	3.39	0.86	90
	Total	3.43	0.95	255
Spiritual Change	Home	2.46	1.61	165
	Hospital	3.17	1.16	90
	Total	2.71	1.51	255
Appreciation of Life	Home	3.54	0.93	165
	Hospital	3.29	0.91	90
	Total	3.45	0.93	255

Note. Significant values are bolded.

Research Question 3

Research Question 3: Do informal hospice caregivers who pray and informal hospice caregivers who do not pray differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life)?

H_03 : Informal hospice caregivers who pray and informal hospice caregivers who do not pray do not differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

H_{13} : Informal hospice caregivers who pray and informal hospice caregivers who do not pray do differ in posttraumatic growth domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life).

A Hotelling's T^2 test for independent samples was conducted to examine Research Question 3. The independent grouping variable was, prayer practices (informal caregivers who prayed or did not pray). The dependent variables were scores on the Posttraumatic Growth Inventory domains (relating to others, new possibilities, personal strength, spiritual change, and appreciation of life; Tedeschi & Calhoun, 1996).

Assumptions. Prior to running the analysis, the assumptions of normality and homogeneity of variance were assessed again through examination of the KS test and Levene's test, respectively. The KS tests mirrored the findings to Research Question 2. The assumption for homogeneity of variance was met as the findings for Levene's tests were not all statistically significant ($p > .05$). The assumption for homogeneity of variance was met for relating to others, new possibilities, and appreciation of life (all $p > .05$). The assumption was not met for personal strength or spiritual change (both $p < .05$). Due to the assumption not being met for these two variables, the statistically significant alpha level in the respective univariate analyses was reduced in half ($\alpha = .025$).

Multivariate f test. The results of the multivariate F test were statistically significant for informal caregivers who prayed, Hotelling's $T^2 = 93.61$, $F(5, 249) = 18.40$, $p < .001$, partial $\eta^2 = .270$, suggesting that there were significant differences in posttraumatic growth between informal caregivers who did and did not pray. Univariate analyses were used to examine each variable by prayer practices.

Univariate tests. The results of the univariate test for relating to others were statistically significant, $F(1, 253) = 4.89, p = .028$, partial $\eta^2 = .019$, suggesting that there were significant differences in relating to other's scores by prayer practices. Informal caregivers who prayed ($M = 3.32$) scored significantly higher on relating to others ($M = 3.05$) in comparison to informal caregivers who did not pray.

The results of the univariate test for new possibilities were statistically significant, $F(1, 253) = 18.17, p < .001$, partial $\eta^2 = .067$, suggesting that there were significant differences in new possibilities scores by prayer practices. Informal caregivers who prayed ($M = 3.20$) scored significantly higher on new possibilities ($M = 2.64$) in comparison to informal caregivers who did not pray.

The results of the univariate test for spiritual change were statistically significant, $F(1, 253) = 87.39, p < .001$, partial $\eta^2 = .257$, suggesting that there were significant differences in spiritual change scores by prayer practices. Informal caregivers who prayed ($M = 3.27$) scored significantly higher on spiritual change ($M = 1.68$) in comparison to informal caregivers who did not pray.

The results of the univariate test for personal strength were not statistically significant at the reduced alpha level ($\alpha = .025$). The results of the univariate test for appreciation of life were not statistically significant. The null hypothesis for Research Question 3 was rejected. The findings of the Hotelling's T^2 and the univariate tests are presented in Tables 12 and 13. The descriptive statistics are presented in Table 14.

Table 12

Hotelling's T^2 for Posttraumatic Growth by Prayer Practices

Term	Hotelling's T^2	$F(5, 249)$	p	partial η^2
Prayer	93.61	18.40	<.001	.270

Table 13

Univariate Tests for Posttraumatic Growth by Prayer Practices

Term	Dependent Variable	$F(1, 253)$	p	partial η^2
Prayer	Relating to Others	4.89	.028	.019
	New Possibilities	18.17	<.001	.067
	Personal Strength	4.08	.045	.016
	Spiritual Change	87.39	<.001	.257
	Appreciation of Life	1.47	.226	.006

Note. Significant values are bolded.

Table 14

Means and Standard Deviations for Posttraumatic Growth by Prayer Practices

Variable	Prayer	M	SD	N
Relating to Others	Yes	3.32	0.96	165
	No	3.05	0.89	90
	Total	3.22	0.95	255
New Possibilities	Yes	3.20	0.95	165
	No	2.64	1.07	90
	Total	3.00	1.02	255
Personal Strength	Yes	3.52	0.87	165
	No	3.27	1.07	90
	Total	3.43	0.95	255
Spiritual Change	Yes	3.28	1.17	165
	No	1.68	1.51	90
	Total	2.71	1.51	255
Appreciation of Life	Yes	3.51	0.90	165
	No	3.36	0.98	90
	Total	3.45	0.93	255

Note. Significant values are bolded.

Summary

The aim of this study was to investigate the relationship between prayer coping functions and domains of posttraumatic growth among a sample of home and hospital informal hospice caregivers. In this chapter, the findings of the data analysis were presented and the descriptive statistics for the sample were examined.

The results for Research Question 1 were statistically significant for frequency of prayer, prayer functions subscales (provides acceptance, provides calm and focus, provides assistance, and defer/avoid) and overall posttraumatic growth, while controlling for age group and gender. Praying for calm and focus was the significant predictor in the model. The null hypothesis for Research Question 1 was rejected.

The results for Research Question 2 were statistically significant for new possibilities, spiritual change, and appreciation of life by location of hospice care. Relating to others and personal strength were not significantly different by location of hospice care. The null hypothesis for Research Question 2 was rejected.

The results for Research Question 3 were statistically significant for relating to others, new possibilities, and spiritual change by prayer practices. Personal strength and appreciation of life were not significantly different by prayer practices. The null hypothesis for Research Question 3 was rejected.

Chapter 5 will further explore the findings. The results will be examined in connection with the literature. Suggestions will be provided for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Caring for a terminally ill loved one represents a stressful life event, and informal caregivers may not merely cope with the loss of a loved one but transform and grow in response to their loss, which is known as posttraumatic growth. Prayerful people report higher levels of posttraumatic growth across a variety of challenging situations (Calhoun et al., 2010; Harris et al., 2010). Although researchers have investigated the role of prayer in posttraumatic growth, there is a gap in the research regarding its role among informal caregivers in the hospice care community. My purpose for conducting this quantitative study was to address this gap in the research by exploring prayer functions that may be associated with posttraumatic growth among informal caregivers while considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or did not pray). In addition, age group and gender were statistically controlled and evaluated for their potential effects. This research is important in understanding that informal caregivers have the propensity for posttraumatic growth and in identifying prayer functions that may be associated with growth. The results of this study may give scholars and practitioners a deeper awareness of prayer functions that encourage posttraumatic growth and contribute to positive social change. This chapter consists of an overview of the study, interpretations of the findings, limitations of the study, and recommendations for further research. I conclude with implications for positive social change.

Interpretation of the Findings

The experience explored in this study was whether and how prayer functions influenced posttraumatic growth among informal caregivers in hospice settings. One aim of this study was to acquire an understanding of coping functions of prayer as they related to overall posttraumatic growth.

Research Question 1

Among informal hospice caregivers, there was a collectively significant relationship found between frequency of prayer, prayer functions subscales—provides acceptance, provides calm and focus, provides assistance, and defer/avoid—and in overall posttraumatic growth, while controlling for age group and gender. Step 1 of the regression controlled for the potential influences of age group and gender.

Age group. A significant negative association was found between age group and posttraumatic growth. In particular, informal caregivers 50 to 59 years old perceived significantly less posttraumatic growth than those 18 to 29 years old. These findings are consistent with theories of posttraumatic growth. Middle-aged informal caregivers, also known as “sandwiched caregivers,” may find themselves responsible for providing care to an older parent while also performing tasks associated with their employment and/or care of their spouse and children (Rubin & White-Means, 2009). For older informal caregivers, the dying and death of a loved one following terminal illness may evoke intense feelings of sadness and despair without challenge to established global beliefs about life and death. In time, the informal caregiver’s grief abates, and they return to a state of adjustment and well-being (Calhoun et al., 2010). Furthermore, this may not be

the first informal caregiving experience and expectations of the trials and tribulations that accompany hospice caregiving may have already been integrated into new meanings. Thus, older informal caregivers should report less posttraumatic growth when compared to younger informal caregivers.

Alternatively, younger informal caregivers may still be in the process of establishing primary belief systems and may not have been exposed to the dying and/or death of a loved one. They may encounter the experience as in discord with existing or incomplete assumptive beliefs that the world is fair, just, and benevolent, which shatters their assumptions (Janoff-Bulman, 1992). Unlike older informal caregivers, younger informal caregivers may associate end of life caregiving as more disruptive to core beliefs and acknowledgement of their mortality, necessitating an effort to make new meanings of the event and through this process potentially achieving greater posttraumatic growth (Tedeschi & Calhoun, 1996).

Gender. Gender was not found to have significantly impacted the predictor variables' relationship with posttraumatic growth. Brazil et al. (2009) claimed that informal caregiving was traditionally a female role. However, with an aging U.S. population and recent changes in gender roles, this has provided a justification for investigating whether these gender disparities are shifting. For example, an increasing number of men are taking on more domestic responsibilities, and this trend may likely continue as family life is restructured with the modification of gender roles and expectations (Brazil et al., 2009; Pinqart & Sörensen, 2006). In this study, informal

caregivers were distributed between 172 males (67.5%) and 83 females (32.5%). Thus, the results of this study may reflect changing gender roles.

Prayer functions scale—praying for calm and focus. Step 2 of the regression ascertained which prayer functions were predictors of posttraumatic growth. Praying for calm and focus was the significant predictor in the model, suggesting that an increase in calm and focus resulted in an increase in posttraumatic growth. Bade and Cook (1997) testified that active coping activities such as prayer can provide a sense of comfort and support in the face of challenge while shielding against potentially maladaptive effects of those events. For religious informal caregivers, prayer may offer an opportunity of connection and/or conversation with their God, creator, higher power, and/or universal spirit on a level that helps them feel less alone in their hospice caregiving. Items on the provides calm and focus subscale highlight meditation and reflection as prayer coping methods (Bade & Cook, 1997). Table 15 lists the nine statements associated with prayer functions—provides calm and focus of the Prayer Functions Scale (Bade & Cook, 1997).

Table 15

Prayer Functions—Provides Calm and Focus

Statements
Allows me to reflect on the issues.
Ask for hope.
Meditate.
Find peace within myself.
Find hope within myself.
Find courage within myself.
Pray that I may be able to alter myself to deal with obstacles.
Decreases my fear.

Note: Prayer Functions Scale (Bade & Cook, 1997).

The findings from the regression analyses are supported by previous research. Prayerful people report higher perceptions of posttraumatic growth across a variety of situations. For example, Harris et al. (2010) surmised that praying for calm and focus was significantly correlated with posttraumatic growth among church-attending survivors of noninterpersonal traumas (trauma without an intent to harm) identified as sudden death of a loved one, life threatening or disabling illness, and natural disasters. Furthermore, Tait et al. (2016) postulated that two prayer functions, provides calm and focus and assistance, were associated with decreased depression and posttraumatic stress disorder symptomatology among U.S. veterans of the Iraq and Afghanistan conflicts.

Whether a person is a trauma survivor, veteran, or informal hospice caregiver, praying for calm and focus may be an effective tactic for coping with and growing from challenging life events. A positive caregiving atmosphere may be nurtured from seeking peace, hope, and courage to care for a dying loved one while knowing it will end in death (Bade & Cook, 1997). Praying for calm and focus may provide informal caregivers with enough emotional relief to advance a new life philosophy and an increased appreciation of life for self and others, value of the community, and necessity of social and familial support (Calhoun et al., 2010). Posttraumatic growth may reflect the process and outcome of transformational change that redefines the informal hospice caregiver by incorporating the caregiving experience into new, more comprehensible and meaningful assumptions of the world.

Research Question 2

Home and hospital informal hospice caregivers differed significantly in posttraumatic growth—relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. Specifically, posttraumatic growth domains of new possibilities, spiritual change, and appreciation of life significantly differed by location of hospice care.

A second aim of this study was to ascertain whether home and hospital informal hospice caregivers differed in domains of posttraumatic growth. The biopsychosocial, emotional, cultural, and spiritual experiences of informal caregivers who deliver end of life care are complex. Hospice care is intense and involves private and subjective experiences, motivated by an attachment to close, personal, and/or fragile relationships (Hughes et al., 2017). The hospice caregiving location may also impact the informal caregiver's experiences and bereavement outcomes. Even though most people may identify home as the preferred place to die, surrounded by family in the place they consider familiar and safe, it may not be feasible due to an absence of support systems, resources, and/or the complexity of care needed to successfully control their loved one's palliative care needs (Hughes et al., 2017). Furthermore, Wright et al. (2010) reported that informal caregivers of loved ones who died in a main hospital/intensive care unit had a heightened risk of developing posttraumatic stress disorder or persistent complex bereavement disorder than home caregivers who were adjusting to bereavement and not considered diagnosable. Conversely, Kapari et al. (2010) claimed that caregivers of cancer patients who died at home reported more psychological stress than caregivers of

loved ones who died elsewhere. In this study, hospital informal caregivers perceived significantly greater posttraumatic growth in realms of new possibilities and spiritual change while home informal caregivers perceived significantly greater posttraumatic growth in the realm of appreciation of life.

The hospital hospice setting (main hospital/intensive care unit inpatient) is an environment where a dying patient receives inpatient care that may be significantly different from the care delivered at home (Hughes et al., 2017; Kilbourn et al., 2011; Romito et al., 2013). The informal caregiver may witness aggressive and/or unwanted care provided by various healthcare personnel who may be unaware of the patients' care preferences (Chung & Burke, 2013; Pottie et al., 2014). These therapies may lessen the patient's quality of life and death; therefore, the hospital informal caregiver may find it more problematic to make sense of their grief (Currier et al., 2013). Thus, the dying and death of their loved one in the hospital setting may shatter their core assumptions, and this distress may necessitate an effort to rebuild core beliefs, especially if the care was difficult and lengthy. In this process, the struggle to make meaning of their burdensome informal hospice caregiving may result in greater posttraumatic growth.

A key characteristic of posttraumatic growth is that individuals can exceed their prechallenge abilities to experience a greater level of functioning and adaptation, revealing their attainment of wisdom and a more complex global narrative (Currier et al., 2013; Harris et al., 2010; Janoff-Bulman, 1992, 2006; Morris et al., 2012). Tedeschi and Calhoun (1995) found that these changes may be observed in posttraumatic growth domains or realms of an individual's life that are typically extensions of the struggle to

grasp the traumatic event and make meaning of it. Further analyses were conducted to identify the posttraumatic growth domains that were significantly different by location of care.

Posttraumatic growth—new possibilities. Hospital informal caregivers scored significantly higher in posttraumatic growth—new possibilities in comparison to home informal caregivers. In the dying and death of their loved one, an informal caregiver may be exposed to new choices, opportunities, and activities that were unknown or unavailable prior to caregiving (Calhoun et al., 2010; Tedeschi & Calhoun, 1996). The surviving family member(s) may be required to assume responsibilities that were previously ascribed to the deceased, which is often observed in spousal bereavement (i.e., household finances). In addition, the hospital informal caregiver may meet and work with hospital personnel and/or other caregivers to create a caregiver group for families of hospice patients. Additionally, new friendships and business opportunities may be acquired through these interactions. Thus, new possibilities may be more available to hospital informal caregivers since they are in the public environment and exposed to more people and situations. Table 16 lists the five statements associated with posttraumatic growth—new possibilities of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Table 16

Posttraumatic Growth—New Possibilities

Statements
I developed new interests.
I established a new path for my life.
I am able to do better things with my life.

New opportunities are available which wouldn't have been otherwise.
I am more likely to try to change things which need changing.

Note: Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Posttraumatic growth—spiritual change. Hospital informal caregivers scored significantly higher in posttraumatic growth—spiritual change in comparison to home informal caregivers. Posttraumatic growth spiritual change represents a heightened awareness of the truth and validity of religious and/or spiritual beliefs in response to challenge (Tedeschi & Calhoun, 1996; Calhoun et al., 2010). Through their experience, the hospital informal caregiver may feel a renewed sense of conviction in religiosity/spirituality and deepening of faith. Due to the nature of the hospital environment, the terminally ill may spend their last moments in an unfamiliar and uncomfortable place with busy hospital staff making end of life decisions (Pottie et al., 2014). This encounter may prompt a process of reevaluation and restructuring of religious/spiritual assumptions. The hospital informal caregiver may experience a positive spiritual change associated with posttraumatic growth, not as a result of the burdens of caring, loss of life, and bereavement, but rather in struggling to make spiritual meaning of them (Balfe et al., 2016; Calhoun & Tedeschi, 2006; Currier et al., 2013; Taku et al., 2008). Therefore, informal caregivers may realize a positive spiritual transformation in how they view their self, place in the world, mortality, and, for many, relationship to the divine (Calhoun et al., 2010). Table 17 lists the two statements associated with posttraumatic growth—spiritual change of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Table 17

Posttraumatic Growth—Spiritual Change

Statements
I have a better understanding of spiritual matters.
I have a stronger religious faith.

Note: Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Posttraumatic growth—appreciation of life. Home informal caregivers scored significantly higher in posttraumatic growth—appreciation of life in comparison to hospital informal caregivers. Posttraumatic growth appreciation of life represents an elevated respect and gratefulness for life and recognition of life’s noteworthy priorities (Tedeschi & Calhoun, 1996). With the intimate nature of the environment, the home informal caregiver is a constant companion and primary provider of care to their loved one and may view their caregiving as more meaningful and harmonious yet burdensome and intense with the continuous day-to-day, moment-by-moment care. Hence, through a new appreciation of life, an informal caregiver may redefine life priorities to “seize the day.” Table 18 lists the three statements associated with posttraumatic growth—appreciation of life of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Table 18

Posttraumatic Growth—Appreciation of Life

Statements
I changed my priorities about what is important in life.
I have a greater appreciation for the value of my own life.
I can better appreciate each day.

Note: Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Research Question 3

Informal hospice caregivers who prayed and did not pray differed significantly in posttraumatic growth—relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. Specifically, posttraumatic growth domains of relating to others, new possibilities, and spiritual change significantly differed by prayer practices.

A third aim of this study was to ascertain whether informal hospice caregivers who prayed and did not pray differed in domains of posttraumatic growth. Within a hospice setting, a focus on life and death may encourage caregiver's interests in religious/spiritual beliefs and practices such as prayer and its role in assuaging the troubles of informal caregiving and bereavement. Prayer is typically understood as communication and/or conversation with God, creator, higher power, and/or universal spirit (Jors et al., 2015). Prayer is a valuable coping tool because it can be practiced individually or with others and may be a source of comfort for informal caregivers while allowing them to remain with their loved one.

The results of this study showed a significant difference between informal hospice caregivers who prayed and did not pray in perceptions of posttraumatic growth. These results are supported in the research literature. For example, Currier et al. (2013) found that bereaved individuals who recognized spiritual practices, such as prayer, perceived more posttraumatic growth than those in a nonbereaved group. Denney et al. (2011) showed that prayer played a vital role in the posttraumatic spiritual growth of cancer survivors. Ai et al. (2013) revealed that preoperative religious coping factors, including prayer, positively affected cardiac patients' posttraumatic growth following survival of

life changing cardiac surgery. Further, Tait et al. (2016) explored prayer functions and posttraumatic growth among military personnel of the Iraq and Afghanistan conflicts and discovered that personnel using active prayer coping strategies perceived more posttraumatic growth and reported less posttraumatic stress disorder and depressive symptomatology. Thus, actively engaging in religious/spiritual faith through prayer may be a particularly helpful way of coping with informal caregiving in both hospice setting (Wachholtz & Sambamoorthi, 2011).

Further analyses were conducted to identify the posttraumatic growth domains that were significantly different by prayer practices.

Posttraumatic growth—relating to others. Informal hospice caregivers who prayed scored significantly higher than those who did not pray in posttraumatic growth—relating to others. Posttraumatic growth relating to others signifies an increased sense of empathy, friendship, and consideration of others. For instance, informal caregivers may experience positive changes in their perceptions of their interrelationships with others (Tedeschi & Calhoun, 1995). Informal caregivers may demonstrate a heightened sense of empathy for others who are coping with grief, stemming from their own experiences of upset and distress (Calhoun & Tedeschi, 2004). Prayer has been identified as a valuable tool for coping with distress and in the promotion of mental health and well-being (Bade & Cook, 1997; Calhoun et al., 2010; Currier et al., 2013; Harris et al., 2010; Jors et al., 2015).

Transformational changes in interpersonal relationships include cognitive-emotional growth denoted by an increase in thankfulness for life, for both self and others,

the value of community, and the necessity of social and familial support (Tedeschi & Calhoun, 1995). Harris et al. (2010) found that an allegiance to religion and partaking in religious events, including prayer, correlated positively with posttraumatic growth. Participating in caregiver prayer groups may engender a willingness to accept and utilize options for social support that may have been previously ignored or underappreciated (Tedeschi & Calhoun, 1995). Furthermore, Janoff-Bulman (2004) identified the ability to accept and utilize social support as a critical component in feeling prepared to handle future traumatic events. Accordingly, informal caregivers may rely on religious/spiritual teachings and traditions, such as prayer, for dealing with the travails associated with dying and death, and through their process of meaning-making, may perceive greater posttraumatic growth. Table 19 lists the three statements associated with posttraumatic growth—relating to others of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Table 19

Posttraumatic Growth—Relating to Others

Statements
I have a greater sense of closeness with others.
I am more willing to express my emotions.
I have more compassion for others.
I put more effort into my relationships.
I learned a great deal about how wonderful people are.
I better accept needing others.

Note: Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Posttraumatic growth—new possibilities. Informal caregivers who prayed scored significantly higher than those who did not pray in posttraumatic growth—new possibilities. Informal caregivers may be exposed to new choices, opportunities, and

activities that were unknown or unavailable prior to caregiving (Calhoun et al., 2010; Tedeschi & Calhoun, 1996). Individuals coping with traumatic life events often conclude that they are better individuals as a result of their experiences with trauma (Tedeschi & Calhoun, 1995). These positive transformations may lead to an increase in self-confidence in the ability to cope with new and future traumas while being more assertive rather than reactive (Tedeschi & Calhoun, 1995). Janoff-Bulman (2004) referred to positive changes of growth as “strength through suffering” (p. 31), wherein difficult circumstances permit individuals to become mindful of previously unknown strengths.

While grieving, a prayerful informal caregiver may maintain a connection with the deceased loved one that may aid them in feeling less alone. This may provide the informal caregiver time to overcome the loss and return to a state of well-being. In time, the passing of a loved one may create opportunities for new relationships to begin. For example, an informal caregiver may create a prayer group at a nearby hospice chapel with a focus on peer support among grieving families. Table 16 lists the five statements associated with posttraumatic growth—new possibilities of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Posttraumatic growth—spiritual change. Informal caregivers who prayed scored significantly higher than those who did not pray in posttraumatic growth—spiritual change. Posttraumatic growth spiritual change represents a heightened awareness of the truth and validity of religious and/or spiritual beliefs in response to challenge (Tedeschi & Calhoun, 1996; Calhoun et al., 2010). The results of this study are in accord with the research literature on sacred contexts and posttraumatic growth. Prayer

is a key characteristic of religions worldwide and is a frequently used spiritual coping strategy (Currier et al., 2013; Harris et al., 2010; Laufer & Solomon, 2006; Park et al., 2017; Wachholtz & Sambamoorthi, 2011). Shaw et al. (2005) remarked that traumatic experiences led to a strengthening of spiritual/religious bonds and posttraumatic growth was associated with positive religious coping, religious participation, and religious openness. Laufer and Solomon (2006) observed that Jewish adolescents deeply attached to their faith and subjected to terror strikes expressed higher incidences of posttraumatic growth. Further, Kira et al. (2006) found that Muslim torture survivors who increased their faith by attending mosques more frequently displayed greater levels of posttraumatic growth. Therefore, religiosity and/or spirituality are prominent aspects in the lives of many people, and practices, such as prayer, may have profound influences on informal hospice caregiver well-being and subsequent posttraumatic growth. Table 17 lists the two statements associated with posttraumatic growth—spiritual change of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996).

Limitations of the Study

There were several limitations in this study that may have influenced the findings and the results ought to be considered with these limitations in mind. The scope of the research was to measure coping functions of prayer and perceptions of posttraumatic growth among female and male informal caregivers who cared for their terminally ill loved ones until the death of the latter while considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or did not pray).

The target population was limited to informal hospice caregivers who resided in the United States or its territories, so generalizability to caregivers outside the United States was unattainable. In addition, the target population was limited to a sample of convenience who elected to complete an online demographic questionnaire and two self-report surveys, which may not be representative of the target population. Additionally, most informal caregivers were White males who were 20-29 years old, so consideration of the study findings to other ethnicity, gender, and age group caregiver demographics was restricted. Further, given that most of the responses were taken from a single group of paid informal caregivers, the generalizability of this study's survey takers is limited and may not be representative of the informal hospice caregiving population. In addition, due to the anonymous and confidential aspects of the study, no follow-up consultations were possible, so I was unable to determine the accuracy of responses.

It was difficult to obtain a sample of informal hospice caregivers from the first resource website, Family Caregiver Alliance. Therefore, I sought and obtained IRB approval to recruit informal caregivers from Amazon Mechanical Turk. Most of the informal caregivers who completed the online questionnaire did so via Amazon Mechanical Turk (n = 245) and were paid (\$1.00); while those recruited from the Family Caregiver Alliance (n = 10) were unpaid. Given that most of the responses were taken from a single group of paid informal caregivers, the generalizability of this study's survey takers is limited and may not be representative of the hospice caregiving population as a whole. In addition, due to the anonymous and confidential aspects of the study, no

follow-up consultations were possible. Thus, it is unknown if informal caregiver's perceptions of prayer and growth adequately reflected their experience.

Self-report surveys were the only method used to collect the data associated with the study variables and the results may be susceptible to response bias. In addition, only fully completed surveys were used in the study so information gleaned from partial survey answers were not considered in answering the research questions. Studies examining coping functions of prayer and posttraumatic growth among prayerful informal hospice caregivers are scarce, therefore, the results from this study ought to be deemed as an initial assessment for future examinations.

Recommendations for Further Research

There remains a great deal of work to be done in exploring the relationship between prayer functions and posttraumatic growth in the hospice community. This study was designed to examine prayer and growth while considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or did not pray). Significant relationships were found, consequently, future research should attempt to replicate these results. Informal caregiver research ought to build on this study's significant findings in investigating informal caregivers from around the world who are facing end of life caregiving. In addition, research utilizing longitudinal data ought to be beneficial in further elucidating the role of prayer functions in posttraumatic growth among prayerful informal hospice caregivers.

An investment in caregiver research is essential for highlighting social support programs and in educating informal hospice caregivers as they begin their journey on an

unfamiliar and challenging path. The current average length of time that a patient receives hospice care is relatively short. Even though many informal hospice caregivers may not need intervention, there are some that may benefit from support, and it is often a challenge to recognize the people that do. Such increased awareness may advance the development of instantly ready, available, and deliverable prayer-based interventions that boost posttraumatic growth among informal caregivers. Moreover, in the pursuit of ameliorating the distressing aspects of informal hospice caregiving, hospice programs should be created to include meaning-making frameworks for religiously/spiritually driven posttraumatic growth.

This study espoused a positive psychological focus in response to tragedy, so future research ought to examine informal hospice caregivers and situations where prayer may not be an advantageous coping strategy, i.e., atheists. In conclusion, with an aging U.S. population, it is important to investigate methods of study that will enhance patient/caregiver health and well-being, lengthen the amount of time patient/caregiver dyads remain at home, enrich bereavement outcomes, and provide less burden on the healthcare system.

Implications for Positive Social Change

This study was conducted on behalf of the many informal hospice caregivers who are trying to provide the best end of life care for their terminally ill loved ones. This research is important because informal hospice caregivers represent an integral part of the U.S. healthcare industry; therefore, promoting informal hospice caregiver health and

well-being has emerged as a national public health priority (Family Caregiver Alliance, 2015).

The segment of the U.S. population that is 65 years or older, is projected to increase from 35.1 million in the year 2000 to 71.5 million in the year 2030 (Collins & Swartz, 2011). By 2030, one in five baby-boomers will be 65 years or older and the demand for home healthcare will need to grow to adapt to this ever-increasing population (Collins & Swartz, 2011; Pottie et al., 2014).

Home informal caregivers are pivotal in permitting terminally ill loved one's to remain in their homes and circumvent hospitalizations (Albright et al., 2014). Empeno et al. (2011) reported that informal caregivers typically assume responsibility for most of the care for their terminally ill loved ones. These caregivers devote roughly 43 to 120 unpaid hours per week; an estimated yearly unpaid economic value of nearly \$450 billion (Baider & Surbone, 2014; Coughlin, 2010; Reinhard et al., 2015). In response, health policy emphasizes the need for palliative care services that focus on both the patient and caregiver so they may obtain enough support throughout the dying and death of their loved ones. Based upon these aforementioned statistics, many informal caregivers will again serve in this vital role. Indeed, in the forthcoming decades, the need for informal home care is projected to rise by 85% from 2000 to 2050 (Baider & Surbone, 2014).

Governmental policymakers who are concerned with transforming an overburdened U.S. healthcare system have advocated for the use of an integrated, interdisciplinary home healthcare plan (Terry et al., 2017). Their proposed strategy focuses on treating the person's biopsychosocial needs as the preferred method of care

for an aging America with complex chronic or life limiting illnesses (Hudson et al., 2012; Terry et al., 2017; Wachterman et al., 2016). The results of this study may afford healthcare providers, researchers, and policy makers a deeper awareness of prayer functions that encourage posttraumatic growth and contribute to positive social change.

If a loved one desired to die at home and did so, in part, because of the care provided by the home informal caregiver, they may view their experiences as daunting yet meaningfully positive and this may contribute to positive caregiver health and well-being. Therefore, in the quest for positive social change, this study offered a deeper awareness of the coping functions of prayer that encouraged posttraumatic growth.

Conclusion

In conclusion, informal caregivers in hospice settings represent an understudied subset of the informal caregiver population. This study represents the first known exploration of prayer coping functions and posttraumatic growth among informal caregivers considering differences due to the hospice caregiving environment (home or hospital) and prayer practices (informal caregivers who prayed or did not pray). This study's findings highlight the necessity for scholars and practitioners to support informal hospice caregivers to recognize the value of prayer in the informal caregiver's lives and reflect on the magnitude of prayer coping functions, such as praying for calm and focus, that may encourage mourners in their struggles to cope with and grow from the dying and death of their loved ones. Informal hospice caregivers of terminally ill loved ones may experience this grim time as an opportunity to come together for emotional and spiritual healing, in peace, with expressions of affection and love, through acts of caregiving so

that when the end of life finally comes, their loved one was at peace and comfortable, in dignity, surrounded by loved ones in the place they called home.

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Appendix A: Demographic Questionnaire

1. In what U.S. state or territory do you live?

2. What is your age?
 - 17 or younger
 - 18-19
 - 20-29
 - 30-39
 - 40-49
 - 50-59
 - 60-69
 - 70 or older
3. What is your gender?
 - Female
 - Male
4. What is your ethnicity?
 - American Indian/Alaskan Native
 - Black/African American
 - Asian/Pacific Islander
 - Hispanic/Latino/Latina
 - White/Caucasian
 - Other (please specify)
 - Prefer not to answer
5. What is your religion, if any?
 - Christian/Protestant
 - Catholic
 - Jewish
 - Greek/Russian Orthodox
 - Hindu
 - Muslim
 - Buddhist
 - Atheist/Agnostic
 - None
 - Other (please specify)
 - Prefer not to answer
6. What is your relationship to the hospice patient?
 - Spouse/Partner
 - Parent
 - Child
 - Sibling
 - Aunt/Uncle
 - Niece/Nephew/Cousin
 - Grandparent
 - Grandchild
 - In-Law
 - Friend
 - Other (please specify)
 - Prefer not to answer
7. Place of hospice care?
 - Home
 - Hospital
 - Intensive Care Unit
8. How long did you provide hospice care?
 - Less than 3 months
 - 9 months to 1 year

- 3 to 6 months
- 6 to 9 months
- 1 to 2 years
- Greater than 2 years

9. Time since death?

- Less than 3 months
- 3 to 6 months
- 6 to 9 months
- 9 months to 1 year
- 1 to 2 years
- Greater than 2 years

Appendix B: Permission to Use the Posttraumatic Growth Inventory

On Mon, Mar 9, 2015 at 10:47 AM, Tedeschi, Rich [REDACTED] wrote:

Dear Nicole—Here are the measures for your dissertation. I am interested in what you are doing, and I hope it goes well.

Richard Tedeschi, Ph.D.
Professor of Psychology
UNC Charlotte

On Sun, Mar 15, 2015 at 1:57 PM, [REDACTED] wrote:

Hello Nicole. Attached you will find all of our measures, including the PTGI, the CBI, and the ERRI. We hope they will be of use to you! Thank you for your interest. Warm regards,

Posttraumatic Growth Research Center
UNC Charlotte, Department of Psychology

Lawrence G. Calhoun [REDACTED]
Richard G. Tedeschi [REDACTED]
Arnie Cann [REDACTED]

www.ptgi.uncc.edu

<http://www.routledgejournal.com/books/details/9780415645300/>

Appendix C: Permission to Use the Prayer Functions Scale

On Mon, Mar 23, 2015 at 1:02 PM, Stephen Cook [REDACTED] wrote:

Nicole - You have our permission to use the Prayer Functions Scale (PFS) in your research. I request that you provide me with a brief summary of your results related to the PFS after you complete the research.

I have attached the following information related to the PFS: Two versions of the measure—one developed for responding on the questionnaire itself, and one developed for responding using a scantron/computer-scored form. Syntax that can be utilized with the SPSS program for scoring the four PFS scales. Two convention papers that describe the development of the PFS, in addition to a journal article related to this line of research.

I wish you the best as you pursue this research. Stephen

Stephen W. Cook, Ph.D.
Department of Psychological Sciences
Texas Tech University