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THE RELATIONSHIP BETWEEN SPIRITUALITY AND PAIN RESILIENCY IN GERIATRIC INDIVIDUALS WHO ARE 65 YEARS OR OLDER WITH CHRONIC PAIN IN DALLAS, TX

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by

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ABSTRACT

THE RELATIONSHIP BETWEEN SPIRITUALITY AND PAIN RESILIENCY
IN GERIATRIC INDIVIDUALS WHO ARE 65 YEARS
OR OLDER WITH CHRONIC PAIN
IN DALLAS, TX

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Although there have been studies conducted on the relationship between aspects of religiosity and spirituality, and pain perception and management, a gap in research becomes evident when considering the relationship between spirituality and pain resiliency, particularly in the geriatric population. Spirituality has been shown to play a fundamental role in overall pain management of a patient. Understanding the relationship between pain resiliency and spirituality can possibly change how we educate patients on resiliency of pain. Therefore, the purpose of the study is to examine relationships between an individual's spirituality and their resilience to chronic pain. Forty-two subjects from a church in south-central USA participated in this study. A survey was administered to assess

the age, presence of chronic pain lasting 6 or more months, membership at a Protestant church/religious organization, spirituality, and pain resiliency.

Based on survey responses, the majority of the subjects exhibit a relatively high degree of positive spiritual coping beliefs, high pain resiliency, high behavioral perseverance, high Cognitive/Affective Positivity, and low negative spiritual coping beliefs.

This study's findings promote an increased emphasis on the spiritual component of holistic care within medical professions, including the use of spiritual care as a non-pharmacological, noninvasive approach to aide in the treatment of chronic pain.

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CHAPTER 1

INTRODUCTION

The purpose of the study is to examine if a relationship exists between an individual's spirituality and their resilience to pain. The research question can best be stated as: Is there a relationship between spirituality and pain resiliency in geriatric individuals with chronic pain? Understanding the relationship between pain resiliency and spirituality, can result in changes on how we might educate patients on resiliency, which will assist in coping with chronic pain. Spirituality has been shown to play a fundamental role in the overall pain management of a patient and pain resiliency appears to be a result of a patient's overall positive psychology and perception of pain.

CHAPTER 2

LITERATURE REVIEW

2.1 Background

As a result of current research, the relationship between pain experience, resiliency, and positive psychology has become a topic of renewed interest (Slepian, Ankawi, Himawan, & France, 2016). Pain resilience can be defined as the "ability to maintain relatively stable, healthy levels of psychological and physical functioning when exposed to an isolated and potentially highly disruptive event" (Slepian et al., 2016, p. 1). Research studies have shown that the degree of pain resilience may be a strong predictor of pain level in patients (Slepian et al., 2016). While researchers who conduct studies on pain tend to focus on psychological factors including pain related distress and disability (Ramírez-Maestre, Esteve, & López, 2012), an increased number of current research studies focus on positive factors used to improve psychological functioning (Basiński et al., 2013; Glover-Graf, Marini, Baker, & Buck, 2007). These positive factors include nonpharmacologic pain relief, distraction methods, pain relief predictions, and resiliency to pain, to promote positive functioning in those experiencing chronic pain. In the continual studies and analysis of long-term pain psychology and its related physiological effects, pain resilience has been linked to multiple factors of positive psychological functioning (Smith & Zautra, 2008). As a result, the presence of pain resilience is related to improved functioning in affected populations. More specifically, pain resiliency is a reflection of positive affect, which when present, is related to lower future pain intensity and

negative emotions (Sturgeon, & Zautra, 2010). Positive affect is defined as an individual's perceived feeling of positive moods or emotions, such as happiness or joy (Sturgeon, & Zautra, 2010). In a study from 2007 by Kratz, Davis, and Zautra, the results showed that when evaluating the relationship between positive affect with pain severity ($p = .01$), when evaluating the relationship between pain acceptance and pain severity, the results diminished considerably, becoming nonsignificant ($p = 0.35$) (Kratz, Davis, & Zautra, 2007). This suggests that pain acceptance has an indirect impact on negative affect through increasing the level of positive affect. In the case of this study, an increase in positive affect may be influenced by level of pain resiliency in an individual (Kratz, Davis, & Zautra, 2007).

One study focused on observing the relationship between pain resiliency and its implications upon pain management (Ankawi, Slepian, Himawan, & France, 2017). An example of a previously established study that observes the relationship between resilience and chronic pain includes a study conducted in 2012 by Ramirez-Maestrei et al. The study was conducted to assess the relationship between resilience, acceptance, coping, and adjustment to spinal chronic pain. In the study it was found that pain acceptance influenced activity variables, such as functional impairment and functional status. Functional impairment would include a medically related loss in functional capacity that inhibits/hinders an individual's ability to work. There was also a negative association between acceptance and depression, but not on anxiety. Active coping had an impact on patient's reported pain intensity and emotional distress ($r = 0.43$). This shows a moderate association between coping actively and emotional distress. Furthermore, the study's results support the importance of resilience as a measure of improvement in coping with

chronic pain. In this study, resilience was found to have a moderate association with acceptance, active coping, anxiety, functional impairment, anxiety, and depression ($r = 0.42$). Acceptance was also found to be moderately associated with emotional distress with a correlation of $r = 0.48$ (Ramírez-Maestre, Esteve, & López, 2012).

The second key variable shown to play a major role in pain management, is the concept of spirituality. Although this topic is often considered open-ended, spirituality is ultimately "concerned with the transcendent, addressing ultimate questions about life's meaning, with the assumption that there is more to life than what we see or fully understand" (Feltzer Institute, "Multidimensional Measurement," 1999, p. 4). Further, they expound on the difference between spirituality and religion by claiming that religion is aimed to help spiritual life (Feltzer Institute, "Multidimensional Measurement," 1999).

In another study, spirituality was found to display a noticeable relationship with pain management (Büssing et al., 2009). A study was conducted in 2009 by Büssing et al., (2009) to evaluate the relationship between spirituality, religiosity, and pain management, adaptive coping styles, life satisfaction, and disease interpretation. The study reported that approximately 50% of the patients experiencing chronic pain did not identify as being religious. Approximately 50% of the subjects strongly believed that God would help them with their pain, and participated in prayer to help them become healthy (Büssing, 2009). These findings suggest a possible association between spirituality and pain management/coping methods. Furthermore, this study showed that spiritual/religious views may play a strong role on an individual's pain understanding and pain management decisions. Spirituality can be considered an important factor in pain management and pain coping (Büssing, 2009).

A study by Basiński et al. (2013) examined the relationship between spirituality and chronic pain in patients with pancreatitis known to be suffering from chronic pain. The purpose of this study was to observe the impact of religiosity on these patients' quality of life and pain levels. The study was conducted by following the Neurolytic Celiac Plexus Block (NCPB) procedure; patients who reported having higher religiosity and higher church attendance scored higher on overall quality of life (79.88 out of 100) than individuals who reported as having no/sporadic contact with church (44.21 out of 100; $p < 0.05$). The NCPB as a whole reduced pain and increased quality of life in both groups of participants with chronic pain. Findings suggest that religious practices, spirituality, and religiosity may influence and improve the quality of life for patients with chronic pain. Furthermore, this study identifies a relationship between religiosity and chronic pain levels in adults after they received a pain reduction procedure (Basiński et al., 2013). Similarly, another study conducted by Kawi in 2014 assessed the relationship between spirituality and chronic pain in relationship to pain management. This study shows the relationship between several variables and self-management of chronic lower back pain. This study yielded results that showed that those who reported that spirituality/religion was of "a great deal ($M = 61.099$, $SE = 1.941$)" of importance, reported a greater mean self-management of pain score (Self-management scores differed significantly, $p = .007$), when compared to participants who reported that spirituality/religion was of "a little ($M = 51.249$, $SE = 3.140$)" importance (Kawi, 2014).

Bovero et al. (2016) assessed a study looking at the relationship between components of spirituality and the quality of life (including pain, emotional distress and psychological adjustment). The study concluded that pain and spirituality (specifically the

subscale of faith) are important components of an individual's quality of life. This study indicates the presence of an association between pain and quality of life ($p = 0.015$) and between faith and quality of life ($p < 0.001$) (Bovero et al., 2016). Further, the study identified marital status ($p = 0.001$), occupational status ($p = 0.001$), education ($p = 0.052$), anxiety ($p = 0.003$), pain ($p < 0.001$), use of instrumental support ($p = 0.013$), and faith as being significant indicators of quality of life. The extremely strong correlation between pain ($p < 0.001$), occupational status, and anxiety with quality of life, suggests a strong relationship between these variables (Bovero et al., 2016).

Glover-Graf et al. (2007) conducted a related study that assessed the role of religious/spiritual practices, beliefs, and attitudes in patients with chronic pain. The purpose of this study was to assess for significant associations between religious/spiritual practices, beliefs, and attitudes in patients with chronic pain. The study concluded that 46% of the participants had a strong opinion (agreement or disagreement) concerning there being a spiritual reason for their chronic pain. Fifty-five percent of the participants expressed feeling closer to a greater spiritual power since the inception of their condition, which caused chronic pain. Coinciding with prior literature discussed in this article, this significant finding shows the impact of chronic pain on an individual's spiritual or religious experience. Following the use of pain medication, prayer was reported as being a perceived means in coping and managing pain. The use of prayer was often used in conjunction with pain medication. The study found that 16% of the participants reported using prayer (indicative of spirituality/religiosity) in adjunct with pain medication for pain relief. The study suggested a perceived positive impact of chronic pain on spirituality. Additionally, this study also suggested a relationship between pain coping/perception with higher levels

of spirituality (Glover-Graf et al., 2007). Furthermore, in another study conducted in 2005, it was concluded that individuals experiencing chronic pain may be more likely to express higher spirituality and religiosity (Rippentrop, 2005).

Further searching was done to better understand the relationship of resiliency and spirituality; however, no studies were found. Therefore, the purpose of this study is to examine suggested relationships of resilience and spirituality using the created scale indicating relationships by the previous researchers who created the tool.

2.2 Conclusion

Based on the various studies cited above, spirituality has shown to play a fundamental role in overall pain management in individuals suffering from chronic pain. Similarly, pain resiliency shows to play a role in an individual's overall positive psychology and pain management. Although both of these variables have been explored in relationship to pain management, these variables have not been assessed in relationship with each other. Additionally, these variables have not always been explored in both men and women as some studies focused on men only. This study will observe the relationship between spirituality and pain resiliency. Hopefully, it will further contribute to the overall understanding of pain management and associated pain management factors. Understanding this relationship may help to determine whether the development of psychological pain management interventions, including teaching points, should in fact be geared towards spirituality and resiliency to effectively treat pain.

CHAPTER 3

METHODOLOGY

This research study design is a quantitative study. The desired sample for this study is geriatric individuals, 65 years of age and older. Participants must either currently have or have in the past experienced chronic pain that lasted six months or more, and be able to give verbal consent to participate.

The demographic portion of the survey was created to assess the age, presence of chronic pain lasting 6 or more months, and membership at a Protestant church/religious organization. The exact demographic questions can be found in Appendix A. Spirituality and pain resiliency of individuals were measured by using previously established surveys. The survey for this study included three questions from the positive spiritual coping subscale section (assesses positive spiritual coping) adapted from the Religious/spiritual coping short form portion Brief Multidimensional Measurement of Religiousness/ Spirituality for Use in Health Research (BMMRS). Additionally, there were three more questions included, which were from the negative spiritual coping subscale section (assesses negative spiritual coping) adapted from the Religious/spiritual coping short form portion of the Brief Multidimensional Measurement of Religiousness/ Spirituality for Use in Health Research, and 14 Questions from the Pain Resilience Scale (see Appendix A).

Written support was obtained from the participating church (see Appendix B). After providing an overview of the study to the church's pastor, the support letter was written. Upon approval from the church and the University of Texas at Arlington Institutional

Review Board (Appendix C), a time was set up with the pastor of the church to present the study and survey the church's attendees.

After presentation of the study and allowing all subjects to ask questions about the study, verbal consent was obtained from each subject. Several copies of the composed survey were printed and prepared to pass out to the participants once verbal consent was obtained. All of this was done prior to the beginning of the church service. Participants were given approximately 10 minutes to complete and submit the survey (Appendix A). Prior to passing out the survey, verbal consent was read to the subjects along with a copy of the verbal consent being provided (see Appendix E). A sealed box was placed in the front of the room, and subjects were directed to place the survey in the box. If subjects waited for the survey to be collected when finished it was placed in the sealed box for them at the completion of the survey.

Once all of the surveys were collected, data was entered into SPSS Statistic Analysis Software, and then a statistical analysis was performed utilizing the acquired data. The association between these two concepts (resiliency and spirituality) within the surveys were analyzed to see if there was indeed any correlation.

3.1 Confidentiality and Ethical Considerations

All responses of the participants ensured anonymity, as names were not recorded or reported. There were no risks noted regarding the survey related activities; however, subjects may have become tired of answering the survey questions. Confidentiality of results were upheld, as all surveys were collected and placed in a locked cabinet in a locked office at the University of Texas at Arlington.

CHAPTER 4

RESULTS

The sampled population contained 42 subjects. All 42 (100%) of the submitted surveys were completed. Indicated by Question 1 of the survey, the sample reported the age range spanned 65-91 years of age. This is confirmation that this study outlines the "geriatric" subject population because they are age 65 and above. This study sought to evaluate factors relating to individuals who were 65+. The age of 65+ served as an inclusion criterion. Let it be noted that participants ages 65-70, encompassed 33.3% of the sample; ages 71-80, 42.9% of the population; ages 81-90, 21.4% of the population; and ages 91-100, encompassed 2.4% of the population. The last category of age included only one subject within this age range. One hundred percent of the surveys were valid, complete, and met the first inclusion criteria of classification as a geriatric individual.

One hundred percent of the surveyed sample answered "Yes" to the second demographic question of "Do you currently have or have experienced chronic pain lasting 6 or more months?" This demographic question also served as an inclusion criterion, addressing that the surveyed individual currently has or had experienced chronic pain lasting 6 or more months. This sample serves as an accurate representation of the desired analyzed population consisting of individuals who had (or are currently experiencing) chronic pain.

In response to the third demographic question of the survey, 95.2% of the sample said that they belonged to a Protestant church/religious organization. This third

demographic question also served as inclusion criteria, ensuring that 95.2% of the surveyed population corresponds to this demographic question. See Table 4.1 for distribution of age, experience with chronic pain, and belonging to a Protestant church/religious organization.

A Spearman's Rho was conducted on the acquired data to observe a relationship. The Spearman's Rho was specifically utilized since the distribution of data values were not symmetrical. The Spearman's Rho indicated that there was no statistical significance found when correlating the data set.

Table 4.1: Distribution of Age, Experience with Chronic Pain, and Protestant Church/Religious Organization Membership

		n	%
Age	65-70	14	33.3
	71-80	18	42.9
	81-90	9	21.4
	91-100	1	2.4
Experienced Chronic Pain lasting 6 or more months	Yes	42	100
	No	0	0
Member of a Protestant church/religious organization	Yes	41	95.2
	No	0	4.8

4.1 BMMRS Positive Spiritual Coping

The majority of the subjects (97.6%) answered in definitive agreement to question 1 of the BMMRS positive spiritual coping subscale (answering as "1- A Great Deal" and "2 - Quite A Bit"), stating that they do think about how their life is part of a larger spiritual force, either a great deal, or quite a bit. This question seeks to define an individual's search for spiritual connection. The majority of the subjects (90.5%) answered in agreement to question 2 of the BMMRS positive spiritual coping subscale (answering as "1- A Great Deal" and "2 - Quite A Bit"), stating that they work together with God as partners to get through hard times, either a great deal, or quite a bit. This question seeks to define an

individual's collaborative religious coping. The subject (92.8%) majority again answered in agreement to question 3 of the BMMRS positive spiritual coping subscale (answering as "1- A Great Deal" and "2 - Quite A Bit"), stating that they look to God for strength, support, and guidance in crises, either a great deal, or quite a bit. This question seeks to define an individual seeking spiritual support.

4.2 BMMRS Negative Spiritual Coping

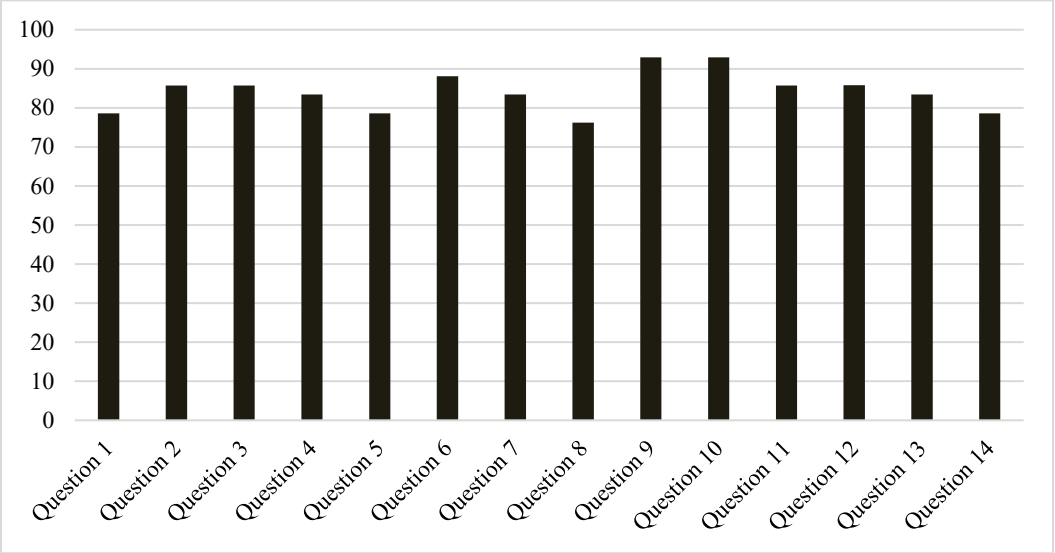
The majority of subjects (78.6%) answered in relative disagreement by choosing "somewhat" or "not at all" to question 1 of the BMMRS negative spiritual coping subscale. Additionally, they answered in disagreement by choosing "3 - Somewhat" and "4 - Not at all", which states that they feel that stressful situations are God's way of punishing them for their sins or lack of spirituality, either somewhat, or not at all. This question seeks to define an individual's punishing God reappraisal. The subject (78.6%) majority were in relative disagreement when they were asked if they wonder whether God has abandoned them. By choosing "somewhat" or "not at all" to question 2 of the BMMRS negative spiritual coping subscale (answering as "3 - Somewhat" and "4 - Not at all") they answered saying they did not wonder whether God has abandoned them, either somewhat, or not at all. This question seeks to define an individual's spiritual discontentment. The majority of subjects (83.3%) answered in relative disagreement by choosing "somewhat" or "not at all" to question 3 of the BMMRS negative spiritual coping subscale (answering as "3 - Somewhat" and "4 - Not at all"), stating that they try to make sense of the situation and decide what to do without relying on God, either somewhat, or not at all. This question seeks to define an individual's self-directed religious coping.

4.3 Pain Resilience Scale

Additionally, the third component of the survey sought to address and assess the different ways that people respond to intense or prolonged pain (toothache, muscle strain, headache, etc.) Since 100% of the surveyed population stated that they have experienced or currently are experiencing chronic pain for a minimum of 6 months they were included in the study. Therefore, the subjects fit the criteria of "intense or prolonged pain" referenced in the Pain Resilience Scale portion of this survey, described as chronic pain lasting 6 months or greater.

The majority of all subjects reported confirmation with a minimum of 76.2% or greater of the subjects answering, "To a great degree (4)" or "All the Time (5)." The majority of subjects (92.9%) answered in agreement to question 9 of the Pain Resilience Scale by stating that when faced with intense or prolonged pain, they still find joy in their life "To a great degree" or "All the Time." The subject (92.9%) majority answered in agreement to question 10 of the Pain Resilience Scale by stating that when faced with intense or prolonged pain, they keep a hopeful attitude "To a great degree" or "All the Time." A graphical distribution of the percentage of subjects who answered for each question in the Pain Resilience Scale can be observed in Figure 4.1.

Figure 4.1: Percentage of Individuals Who Answered "To a great degree (4)" or "All the Time (5)" versus Question Number asked from the Pain Resilience Scale



Let it be noted that the sum of the values 1 through 5 of the Pain Resilience Scale comprises the sub-score indicating Behavioral Perseverance. The total sum of percentages of the sample that answered "To a great degree" or "All the time," in regard to Questions 1 to 5 of the Pain Resilience Scale is an average value of 82.4%.

The sum of the values 6 through 14 of the Pain Resilience Scale comprises the sub-score indicating Cognitive/Affective Positivity. The total sum of percentages of the sample that answered "To a great degree" or "All the time," in regard to Questions 1 to 5 of the Pain Resilience Scale is an average value of 85.2%. The sum of the values 1 through 14 of the Pain Resilience Scale comprises the total Pain Resilience Score. The total sum of percentages of the sample that answered "To a great degree" or "All the time," in regard to Questions 1 to 5 of the Pain Resilience Scale is an average value of 84.2%.

CHAPTER 5

DISCUSSION

The aim of this study was to observe and analyze the spirituality and pain resiliency of geriatric individuals who had or are currently experiencing chronic pain lasting 6 months or more. Furthermore, this study sought to analyze any relationships found between spirituality and pain resiliency in this sample. For example, this experiment sought to observe that if there is an increase in positive spiritual coping, is there an increase in pain resiliency? Additionally, if there is a decrease in negative spiritual coping, is there an increase in pain resiliency? Upon conducting a Spearman's Rho to compare the variables in each tool against each other, no statistically significant relationship could be established.

Although a statistical direct relationship between positive spiritual coping with pain resiliency and negative spiritual coping with pain resiliency could not be ascertained based on the lack of statistically significant correlations upon conducting a Spearman's Rho, there were several unique findings observed from the analyzed results.

5.1 BMMRS Positive Spiritual Coping and Geriatric Individuals

This specific group sample produced an overwhelming majority that scored high on the BMMRS positive spiritual coping questionnaires. The average percentage of subjects within this group that answered "1- A Great Deal" and "2 - Quite A Bit," to questions related to BMMRS positive spiritual coping (composed of the sum of 3 questions), is 93.6%. This indicates that as a whole, the overwhelming majority of the

sampled group of geriatric individuals who are members of a Protestant church/religious organization exhibit positive spiritual coping patterns according to the BMMRS.

In regard to positive spiritual coping, this study's findings correspond with the previous findings of a relatively high average positive religious sub-score. According to a study by Callen, Mefford, and Groer in 2011, the average sub-score for positive spiritual coping in older adults/geriatric individuals was a value of 9.15 (possible score range = 3 to 12). This study utilized a standard Likert scale scoring system, meaning that the higher the value scored, the stronger the affiliation the individual has with the variable. In the case of their study, the high average score of 9.15 out of a possible 12 points, indicates that this group of geriatric individuals display a high tendency to engage in positive spiritual coping practices. Similarly, utilizing the same BMMRS positive spiritual coping questionnaire, this study utilized a reverse Likert scale (the higher the value scored, the stronger the affiliation the subject has with the variable) and reported a positive spiritual coping score of 4.33 (possible score range = 3 to 12). Comparing the results to that of the literature by Callen, Mefford, and Groer in 2011, a similarity in findings is observed. This is seen when this study's reported values are standardized by utilizing the same standard Likert scale as used in the Callen, Mefford, and Groer (2011) study. Using the standard Likert scale, the reported score is 7.63 out of a possible 12. This value coincides with the value reported in the study conducted by Callen, Mefford, and Groer (2011), both of which show a high positive spiritual coping sub score in regard to geriatric individuals who have/had experienced chronic pain lasting 6 or more months.

5.2 BMMRS Negative Spiritual Coping and Geriatric Individuals

The average percentage of individuals within this group that answered "1- A Great Deal" and "2 - Quite A Bit," to questions related to BMMRS negative spiritual coping (composed of the sum of 3 questions), is 80.2%. This indicates that as a whole, the overwhelming majority of the sampled group of geriatric individuals who are members of a Protestant church/religious organization exhibit minimal negative spiritual coping patterns according to the BMMRS.

In regard to negative spiritual coping, this study's findings correspond with the literature's finding of a relatively low average negative religious sub-score. According to a study by Callen, Mefford, and Groer in 2011, the average sub-score for negative spiritual coping in older adults/geriatric individuals was a value of 4.53 (possible score range = 3 to 12). This study utilized a standard Likert scale scoring system, meaning that the higher the value scored, the stronger the affiliation the individual has with the variable. In the case of their study, the low average score of 4.53 out of a possible 12 points, indicates that this group of geriatric individuals display a low tendency to engage in negative spiritual coping practices. Similarly, utilizing the same BMMRS negative spiritual coping questionnaire, this study utilized a reverse Likert scale (the higher the value scored, the stronger the affiliation the individual has with the variable) and reported a negative spiritual coping score of 9.40 (possible score range= 3 to 12). Comparing the results to that of the literature by Callen, Mefford, and Groer in 2011, a similarity in findings is observed. This is seen when this study's reported values are standardized by utilizing the same standard Likert scale as used in the Callen, Mefford, and Groer (2011) study. Using the standard Likert scale, the reported score is 2.60 out of a possible 12. This value coincides with the value

reported by Callen, Mefford, and Groer (2011), both of which show a low negative spiritual coping sub score in regard to geriatric individuals who have/had experienced chronic pain lasting 6 or more months.

5.3 General Observations

Based on the majority of subject answers, it can be suggested that the sampled group of subjects exhibit a 1) relatively high degree of positive spiritual coping beliefs, 2) high pain resiliency, 3) high behavioral perseverance, 4) high Cognitive/Affective Positivity, and 5) low negative spiritual coping beliefs. This study's findings in regards to high levels of positive spiritual coping, high pain resiliency, and low negative spiritual coping, coincide with the findings found in a study that observed that higher resilience levels are associated with higher pain acceptance levels and active coping strategies (Ramírez-Maestre, Esteve, & López, 2012).

When evaluating the current study's BMMRS positive spiritual coping score and the overall pain resiliency scale score, it was noted that there were extremely high levels of positive spiritual coping beliefs and high levels of pain resiliency.

When evaluating the current study's BMMRS negative spiritual coping score to the overall pain resiliency scale score, it was noted that there were extremely low levels of negative spiritual coping beliefs and high levels of pain resiliency. Although a direct relationship was not noted between these two variables, the corresponding degrees of spirituality and pain resiliency coincide with findings in a study conducted by Kawi in 2014. In this study, the produced results showed that those who reported that spirituality/religion was of "a great deal ($M = 61.099$, $SE = 1.941$)" of importance, reported a greater mean self-management of pain score (Kawi, 2014). Although this study does not

explicitly address the component of pain resiliency, it does discuss the positive relationship between spirituality and self-management of pain (Kawi, 2014).

When evaluating the current study's BMMRS positive spiritual coping score and the pain resiliency scale's behavioral perseverance sub-score, it was noted that there were extremely high levels of positive spiritual coping beliefs and high levels of behavioral perseverance. When evaluating the current study's BMMRS negative spiritual coping score and the pain resiliency scale's behavioral perseverance sub-score, it was noted that there were low levels of negative spiritual coping beliefs and high levels of behavioral perseverance.

When evaluating the current study's BMMRS positive spiritual coping score and the pain resiliency scale's Cognitive/Affective Positivity sub-score, it was noted that there were high levels of positive spiritual coping beliefs and high levels of Cognitive/Affective Positivity. When evaluating the current study's BMMRS negative spiritual coping score to the pain resiliency scale's Cognitive/Affective Positivity sub-score, it was noted that there were low levels of negative spiritual coping beliefs and high levels of Cognitive/Affective Positivity.

5.4 Limitations

The primary limitation of this study was the location where the sample was obtained. The study yielded a non-symmetrical distribution of data, with the overwhelming majority of participants stating a high degree of positive spiritual coping practices, low degree of negative spiritual coping practices, and a high average level of pain resiliency. The overwhelmingly high level of positive spirituality may be attributed to the Hawthorne effect. The Hawthorne effect is defined as a change in subjects' behaviors, as a result of

being aware of being observed (McCambridge, Witton, & Elbourne, 2014). In the case of this study, subjects may have reported as being "spiritual," as a result of being in a church and being observed by clergy and leaders within the church. Although anonymity of surveys were used in order to prevent this phenomena from happening, the Hawthorne effect may help in explaining the asymmetrical results observed.

Furthermore, the sample for this study was acquired from one church. Due to the difficulty in initiating and maintaining a constant flow of communication with other DFW area churches, limited resources, and limited willingness of other local churches to participate in this study, the sample for this study was limited. This sample is only representative of the population at that one location. Additionally, this sample may be representative of geriatric individuals who have religious/spiritual identification only in the immediate area of the church. Let it be noted that solely based upon visible observation, it was noted that the majority of participants could be described as destitute or impoverished. Although speculative, this lack of financial stability and resources may attribute to the comparative increase in self-reported pain resiliency, as the participants may have to rely upon an increased level of pain resiliency to compensate for the inability to utilize other chronic pain adaptation measures.

Another limitation of this study is the survey's limitation of scope in accounting for all extraneous variables. The initial three demographic questions in the created sample account for age, presence of chronic pain, and membership to a Protestant church/religious organization. These demographic questions were included to ensure that the population sampled qualified for the assessed variable. For example, the first demographic question on the survey that asked, "What is your current age?" was included to evaluate if

participants met the inclusion criteria associated with desired geriatric participants (age 65 and older). This demographic question ensures exclusion of any individual who is 64 years of age or younger. Similarly, the second demographic question on the survey that asked, "Do you currently have or have experienced chronic pain lasting 6 or more months," serves to assess the inclusion criteria of the subject having or currently experiencing chronic pain lasting 6 or more months. This exclusion serves as a limitation, as it does not assess the population of individuals who may have undergone short term pain lasting less than 6 months. Lastly, the third demographic question, asked "Are you currently a member of a Protestant church/religious organization?" This question served as the last inclusion criteria, assessing if the surveyed individuals were members of a Protestant church/religious organization. This inclusion criteria were included to maintain the study's desired goal of focusing on members who were in a religious/spiritual environment, such as a church. The nature of the study prevented an opportunity to compare result findings to a control population. Since the survey was conducted at an actual church (a religious institution), the overwhelming majority of the population identified as being a member of a Protestant church/religious organization. This limits the ability to compare this study's findings to a control group of individuals who are geriatric patients with chronic pain who do not attend a Protestant church or are not members of a particular religious organization.

Other unaccounted for variables include gender of participants, and type of chronic pain. Specificity of location and classification of chronic pain was intentionally chosen to not be assessed, as it allowed for the overarching analysis between relationships of observed variables in geriatric patients with chronic pain. Identification of type and location of pain would further allow for relationships between assessed variables and

observe if there is a relationship between type and location of chronic pain; however, this was intentionally left out as it allowed for broader generalizations to be made concerning assessed variables.

Another limitation is the nature of the study being a cross-sectional study and focused on representing the sample at one point in time. This study does not account for variance or change over time. Implications of this limitation include not being able to assess any changes in individual geriatric pain resilience, changes in spirituality, changes in severity of pain, or changes associated with the availability of medical care and caregiving. Lastly, the nature of the survey, in regard to it being a self-assessment or self-report survey, limits the insight into the acquired data. Some parishioners may not want to say how they actually feel because they would feel that a certain expectation is required for them as church goers. The nature of this type of study allows for the subjective interpretation of assessed variable by the surveyed individuals. This introduction of subjectivity through the nature of the survey does not account for any possible differentiation between individuals' perceived condition and actual medical condition. Additionally, the study was conducted on a volunteer basis and was not necessarily representative of the entire population of spiritually identifying geriatric individuals who report having chronic pain lasting more than 6 months.

5.5 Implications

5.5.1 Future Research

Understanding the relationship between pain resiliency and spirituality can influence how we educate patients, health care personnel, and students desiring to pursue a career in healthcare, on resiliency of pain. Spirituality has been shown to play a

fundamental role in overall pain management of a patient. Similarly, pain resiliency shows to play a role in an individual's overall positive psychology and pain management.

Although preliminary, and not entirely representative of all geriatric individuals, the potential impact of this study may prove to be pivotal. The desire of this study is to encourage future research that can seek to address and overcome the limitations previously discussed and proposed. Further studies can aid in establishing and assessing the relationship and impact between a patient's spirituality and pain resiliency. Future research could also include a larger and broader population sample, promoting a sustainable usage level of generalizations and observed relationships between pain resiliency and spirituality. Some such ways include the potential use of the entire BMMRS for use in health research. Such inclusion would allow further assessment of different sub scores of this survey in relationship to religion/spirituality. Future research can also incorporate assessment between demographic differences and specifics into spirituality/religiosity, such as differences between genders, race/ethnicity, differing religious affiliation and spiritual affiliation, and other such pertinent factors.

5.5.2 Education/Academia

Implications related to this study's findings include encouraging an increased emphasis on the spiritual component of the holistic care within medical professions. Such efforts can encourage education on multidisciplinary integrative approaches amongst members in academia. For example, individuals within the medical profession may be educated to assess spirituality of patients earlier on and seek out spiritual treatment/care as implemented through a chaplain, parishioner, or clergy.

Additionally, presumptive findings within this study and hopeful future studies, can aid in the academic realm as related to mental health. Although the indicators of this study are initially rooted in implications directly related to the realm of Nursing, and other associated medical professions, mental health issues as defined by spiritual well-being and pain resilience are vast.

5.5.3 Bedside Influence

Findings from this study also have several implications for bedside care. These implications influence and impact many healthcare professionals.

Practical examples of said implications include the use of spiritual care as a non-pharmacological, noninvasive, approach to aide in the treatment of chronic pain. This practice can lead to a reduction in the use of pharmacological pain treatment measures. Initiating such practice begins with the acknowledgement and increased awareness of the spiritual state of the patient. Additionally, it can lead to a deliberate and concerted effort in increasing spiritual interaction and strength for an individual, leading to the respect and understanding of why many individuals prefer to utilize spiritual resources to cope with the issue of chronic pain.

Furthermore, this study has extended implications for the unique role of a Parish nurse. As proposed by the results of this study and additional supplementary studies, spirituality may play a significant role on the degree, resiliency, and management of chronic pain, in a diverse range of patients. The traditional role of a Parish nurse is to care for the physical/medical well-being of an individual while introducing holistic healing and faith/spirituality into patient care. Supported by this study, a Parish nurse is encouraged to integrate and reinforce the significance of care for spiritual well-being, along with physical

healing. A Parish nurse may be encouraged to incorporate unique spiritual and non-pharmacological pain control practices such as meditation, guided imagery, and counseling if indicated, all aimed at complete and permanent healing.

APPENDIX A

SPIRITUALITY AND PAIN RESILIENCY IN GERIATRIC INDIVIDUALS WITH CHRONIC PAIN

1. What is your current age? _____
2. Do you currently have or have experienced chronic pain lasting 6 or more months?
   Yes or No (Please Circle One)
3. Are you currently a member of a Protestant church/religious organization?
   Yes or No (Please Circle One)

Instructions (Dispositional): Think about how you try to understand and deal with major problems in your life. To what extent is each involved in the way you cope?

Positive Religious/Spiritual Coping Subscale (factor loadings> .60)

1. I think about how my life is part of a larger spiritual force (Search for Spiritual Connection).
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all
2. I work together with God as partners to get through hard times (Collaborative Religious Coping).
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all
3. I look to God for strength, support, and guidance in crises (Seeking Spiritual Support).
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all

Negative Religious/Spiritual Coping Subscale (factor loadings> .53)

1. I feel that stressful situations are God's way of punishing me for my sins or lack of spirituality (Punishing God Reappraisal).
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all

2. I wonder whether God has abandoned me (Spiritual Discontent).
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all
3. I try to make sense of the situation and decide what to do without relying on God (Self-Directed Religious Coping).
   - 1 - A great deal
   - 2 - Quite a bit
   - 3 - Somewhat
   - 4 - Not at all

Pain Resilience Scale

Directions: We are interested in the different ways that people respond to intense or prolonged pain (toothache, muscle strain, headache). Using a 0 ("Not at all") to 4 ("All the time") scale, please rate how much each of the following items describe how you respond when faced with intense or prolonged pain.

	When faced with intense or prolonged pain…	**Not at all**	**To a slight degree**	**To a moderate degree**	**To a great degree**	**All the time**
1.	I get back out there	⓪	①	②	③	④
2.	I still work to accomplish my goals	⓪	①	②	③	④
3.	I push through it	⓪	①	②	③	④
4.	I try to continue working	⓪	①	②	③	④
5.	I like to stay active	⓪	①	②	③	④
6.	I focus on positive thoughts	⓪	①	②	③	④
7.	I keep a positive attitude	⓪	①	②	③	④
8.	It doesn't affect my happiness	⓪	①	②	③	④
9.	I still find joy in my life	⓪	①	②	③	④
10.	I keep a hopeful attitude	⓪	①	②	③	④
11.	I don't let it get me down	⓪	①	②	③	④
12.	I don't let it upset me	⓪	①	②	③	④
13.	I avoid negative thoughts	⓪	①	②	③	④
14.	I try to stay relaxed	⓪	①	②	③	④

Total Score = sum of all items; Behavioral Perseverance = sum of items 1 through 5; Cognitive/Affective Positivity = sum of items 6 through 14.

APPENDIX B

WRITTEN CONSENT FROM THE PARTICIPATING CHURCH-DALLAS, TEXAS

WEST END | CHURCH

Know God. Know People. Love God. Love People.

Express God. Serve People.

April 10, 2018

To Whom It May Concern,

Jonathan Lall has explained the basic procedures involving the research. I have spoken to Jonathan Lall and have seen his proposal and therefore I know the purpose of this research study.

The student has explained the basic procedure of the research which I clearly do understand.

West End Church has given permission to the student to obtain information from a population sample from the members of West End Church for this project.

Regards,

David Miranda

Pastor at West End Church, Dallas, Tx.

Tel: 903-335-6329

Email: dabidmiranda@gmail.com

APPENDIX C

UNIVERSITY OF TEXAS AT ARLINGTON IRB APPROVAL

Spirituality and Pain Resiliency in Geriatric Individuals with Chronic Pain
Script for Verbal Consent

Principal Investigator: Jonathan Lall 214-907-5164(cell)
Faculty Advisor: Deborah Behan PhD, RN-BC 940-367-4758 (cell)

I am an honors student at UTA conducting a research study on Spirituality and Pain Resiliency in Geriatric Individuals with Chronic Pain for my senior honors thesis. I will be conducting the study in protestant churches and religious organizations in the surrounding Dallas, Texas area.

I would like to ask you several questions about your spirituality and response during periods of chronic pain. This might take approximately 10 minutes of your time.

There are no risks that I am aware of associated with this study. However, if you become fatigued in the 10 minutes it will take to complete the survey you can stop at any time. Your responses will be anonymous, as your name will not be recorded or reported.

The benefits of your participation may include involvement in the provision of insight into the relationship between spirituality and pain resiliency. This study may help by encouraging the use of spiritual/spiritually-sensitive patient care, providing knowledge into alleviating factors for patients with chronic pain, reduction in overall healthcare expenditures towards pharmacologically related chronic pain relief in patients, and a reduction in the utilization of current pharmacological pain reduction protocols/measures.

Participation is purely voluntary, and you may stop at any time. This study has been reviewed and approved by the University of Texas at Arlington Institutional Review Board (IRB). The primary purpose of the IRB is to protect the rights and welfare of human subjects involved in research activities.

The first survey has six questions and the second survey has fourteen questions. There will also be three general demographic questions. Once you receive the survey that is provided at the end of the informational session you are welcome to complete it or put it in the box up front without completing it. Thank you for your participation.

APPENDIX D

UTA IRB MINIMAL RISK APPROVAL

UNIVERSITY OF TEXAS ARLINGTON | OFFICE OF RESEARCH ADMINISTRATION
REGULATORY SERVICES

May 2, 2018

Jonathan Lall
Dr. Deborah Behan
College of Nursing
The University of Texas at Arlington
Box 19407

Protocol Number: 2018-0490
Protocol Title: *Relationship Between Spirituality and Pain Resiliency in People Who are 65 years or Older with Chronic Pain Who Attend Protestant Churches and Religious Organizations in the Surrounding Dallas, Tx Area*

APPROVAL OF MINIMAL RISK HUMAN SUBJECTS RESEARCH WITHOUT FEDERAL FUNDING

The University of Texas Arlington Institutional Review Board (UTA IRB) or designee has reviewed your protocol and made the determination that this research study involving human subjects is approved in accordance with UT Arlington's Standard Operating Procedures (SOPs) for minimal risk research. You are therefore authorized to begin the research as of **May 2, 2018**.

Note that this project is not covered by UTA's Federalwide Assurance (FWA) and the researcher has indicated it will not receive federal funding. You must inform Regulatory Services immediately if the project may or will receive federal funding in the future, as this will require that the protocol be re-reviewed in accordance with the federal regulations for the protection of human subjects.

As Principal Investigator of this IRB approved study, the following items are your responsibility throughout the life of the study:

UNANTICIPATED ADVERSE EVENTS
Please be advised that as the Principal Investigator, you are required to report local adverse (unanticipated) events to The UT Arlington Office of Research Administration; Regulatory Services within 24 hours of the occurrence or upon acknowledgement of the occurrence.

INFORMED CONSENT DOCUMENT
The IRB approved version of the informed consent document (ICD) must be used when prospectively enrolling volunteer participants into the study. Unless otherwise determined by the IRB, all signed consent forms must be securely maintained on the UT Arlington campus for the duration of the study plus a minimum of three years after the completion of all study procedures (including data analysis). The complete study record is subject to inspection and/or audit during this time period by entities including but not limited to the UT Arlington IRB, Regulatory Services staff, OHRP, FDA, and by study sponsors (as applicable).

MODIFICATIONS TO THE APPROVED PROTOCOL

All proposed changes must be submitted via the electronic submission system and approved prior to implementation, except when necessary to eliminate apparent immediate hazards to the subject. Modifications include but are not limited to: Changes in protocol personnel, changes in proposed study procedures, and/or updates to data collection instruments. Failure to obtain prior approval for modifications is considered an issue of non-compliance and will be subject to review and deliberation by the IRB which could result in the suspension/termination of the protocol.

ANNUAL CHECK-IN EMAIL / STUDY CLOSURE

Although annual continuing review is not required for this study, you will receive an email around the anniversary date of your initial approval date to remind you of these responsibilities. Please notify Regulatory Services once your study is completed to begin the required 3-year research record retention period.

HUMAN SUBJECTS TRAINING

All investigators and personnel identified in the protocol must have documented Human Subjects Protection (HSP) training on file prior to study approval. HSP completion certificates are valid for 3 years from completion date; the PI is responsible for ensuring that study personnel maintain all appropriate training(s) for the duration of the study.

CONTACT FOR QUESTIONS

The UT Arlington Office of Research Administration; Regulatory Services appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Regulatory Services at regulatoryservices@uta.edu or 817-272-3723.

APPENDIX E

SCRIPT FOR VERBAL CONSENT

Spirituality and Pain Resiliency in Geriatric Individuals with Chronic Pain
Script for Verbal Consent

Principal Investigator: Jonathan Lall 214-907-5164(cell)
Faculty Advisor: Deborah Behan PhD, RN-BC 940-367-4758 (cell)

I am an honors student at UTA conducting a research study on Spirituality and Pain Resiliency in Geriatric Individuals with Chronic Pain for my senior honors thesis. I will be conducting the study in protestant churches and religious organizations in the surrounding Dallas, Texas area.

I would like to ask you several questions about your spirituality and response during periods of chronic pain. This might take approximately 10 minutes of your time.

There are no risks that I am aware of associated with this study. However, if you become fatigued in the 10 minutes it will take to complete the survey you can stop at any time. Your responses will be anonymous, as your name will not be recorded or reported.

The benefits of your participation may include involvement in the provision of insight into the relationship between spirituality and pain resiliency. This study may help by encouraging the use of spiritual/spiritually-sensitive patient care, providing knowledge into alleviating factors for patients with chronic pain, reduction in overall healthcare expenditures towards pharmacologically related chronic pain relief in patients, and a reduction in the utilization of current pharmacological pain reduction protocols/measures.

Participation is purely voluntary, and you may stop at any time. This study has been reviewed and approved by the University of Texas at Arlington Institutional Review Board (IRB). The primary purpose of the IRB is to protect the rights and welfare of human subjects involved in research activities.

The first survey has six questions and the second survey has fourteen questions. There will also be three general demographic questions. Once you receive the survey that is provided at the end of the informational session you are welcome to complete it or put it in the box up front without completing it. Thank you for your participation.

APPENDIX F

VERBAL SCRIPT FOR PARISHIONERS

Verbal Script for Parishioners

(Prior to start of Church Service)

Hello, my name is Jonathan Lall. I am an honors student at UTA, and I am here to tell you about a research study that I am conducting, and to provide the survey for you to compete. If you do not want to complete the survey that is handed to you, you are welcome to put it into the box without answering any questions. If you would like to complete the survey, please answer every question and then put the survey into the box. This is an anonymous survey, meaning, no one will have your name or identification on the survey.

The study that I am conducting is about spirituality and pain. We would like this information regarding chronic pain (meaning pain that is constantly there every day) and spirituality to better help those who do have chronic pain but are helped to cope by their spirituality. The survey is in regard to Spirituality and Pain Resiliency in people who are 65 years or older with Chronic Pain who attend protestant churches and religious organizations in the surrounding Dallas, Texas area. If you are 65 or older you can choose to participate in this survey. If you choose to participate in this study, I will give you a survey consisting of twenty-three questions.

Participation is purely voluntary, you may stop at any time. It will take approximately 10 minutes to complete the survey. When finished, you can can put the survey into the secured box with a slit in it, where no one else can see your survey. No names please, that way, nothing will identify the survey as yours.
Thank you for your participation in this survey.

(Collect Box with survey responses once everyone has completed them)

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BIOGRAPHICAL INFORMATION

Jonathan Samuel Lall graduated from the University of Texas at Arlington in December 2018 with an Honors Bachelor of Science in Nursing and a minor in Psychology. Jonathan's post-graduation goals include pursuing a career in nursing in the ICU and Critical Care realm while pursuing advanced studies towards a doctorate in Medicine (MD) or Nurse Anesthesia (DNP CRNA).

The motivation to pursue a career in Nursing and Medicine stems from Jonathan's deep core Christian beliefs of "servant leadership." Jonathan is highly involved in organizations that serve the homeless in downtown Dallas, Texas. Jonathan is part of a positive and progressive group-based effort to serve, and subsequently lead others towards restoration and normalcy of the homeless that are in dire need for both emotional and medical support and healing. Jonathan plans to keep furthering these efforts once he becomes a licensed nurse, with the expanding vision of including other homeless communities in surrounding cities, and eventually national and international Christ-based missions.