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Impact of Parental Spirituality on Child Depression, Anxiety, and PTSD After a Surgical Procedure

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IMPACT OF PARENTAL SPIRITUALITY ON CHILD DEPRESSION, ANXIETY, AND PTSD AFTER A SURGICAL PROCEDURE

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Abstract

Impact of Parental Spirituality on Child Depression, Anxiety, And PTSD after a Surgical Procedure

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Higher levels of religiosity and spirituality (R/S) have been associated with lower levels of depressive symptoms (Lucchetti, Koenig, & Lucchetti, 2021; Braam & Koenig, 2019). While it is unknown why the relationship exists, it may be a result of the social support obtained from attending a place of worship (Gwin et al., 2020). The relationship between anxiety and R/S is far more mixed, with studies having found both positive and negative correlations (Lucchetti, Koenig, & Lucchetti, 2021). It is theorized spirituality may be used to cope with anxiety both negatively (e.g., God hates me) and positively (e.g., God wants to challenge me) (Rosmarin and Leidl, 2020). Additionally, little is known about the relationship between post-traumatic stress disorder (PTSD) and spirituality. However, the literature supports a relationship between the two, but whether they are positively or negatively correlated is unclear (Chen & Koenig, 2006). The purpose of this project is to investigate the impact of parent-reported R/S on children's depression, anxiety, and PTSD after a surgical procedure. Participants include parents with children between the ages of 7 and 17 who have undergone a surgical procedure within the past 12 months. Parents who met these eligibility criteria completed an online survey; their children were also invited to participate in the study and complete an online survey. No relationship between parental R/S and child depression, anxiety, and PTSD was found. Further research on these constructs is needed.

Keywords: depression, anxiety, post-traumatic stress disorder, spirituality, religion

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Acknowledgments

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Impact of Parental Spirituality on Child Depression, Anxiety, and PTSD After a Surgical Procedure

CHAPTER ONE

Introduction

Many Americans hold spiritual and religious beliefs. A recent poll conducted in 2020 found that approximately 47% of Americans said they attended a church, synagogue, or mosque (Jones, 2021). The same poll showed that this is a decrease from 50% in 2018 and 70% in 1999. Results from the poll also showed about a 21% increase in people who reported no affiliation with a religion. Furthermore, individuals who did not report a formal affiliation still indicated having a religious preference. It is likely most Americans practice a religion, in or outside of a mosque, church, or synagogue, or have their own beliefs outside of organized religion (Jones, 2021).

For some Americans, the Covid-19 pandemic has changed their relationship with religion, a Pew Research poll found 24% of respondents said their faith had become stronger. However, they also found that 47% of participants said their relationship with their faith has not changed and 26% said it was not applicable as they were never religious (Gecewicz, 2020). However, despite these numbers, clinicians often ignore the religious or spiritual beliefs of their clients. Only 44% of psychiatrists who treated patients with anxiety and depression said they always or often inquire about a patient's religious or spiritual beliefs, despite 76% of psychiatrists saying their patients' belief in religion and spirituality have a generally positive impact on health (Curlin et al., 2007).

Many children suffer from depression and anxiety symptoms and often suffer from PTSD symptoms following a traumatic event. Following the Covid-19 pandemic, clinically elevated

depression symptoms in children are 25% and clinically elevated anxiety symptoms in children are 20% (Racine et al., 2021) One study reported the overall rate of child and adolescent PTSD in trauma-exposed populations was 16% (Alisic et al., 2014). With the high prevalence of mental health disorders in children, it is important to consider how their beliefs may impact their mental health.

The body of research studying the effects of spirituality and religion on mental health has been growing at a fast pace since the mid-1990s (Koenig, 2012). Over the decades, researchers have shown there appears to be a relationship between mental health and religion and spirituality (Lucchetti, Koenig, & Lucchetti, 2021; Koenig, 2009; Chen and Koenig, 2006). However, most of the available literature presents findings on individuals over the age of 18. Therefore, more research is needed to explore the relationship between spirituality and religion and mental health in children.

While spirituality is often considered to have plenty of overlap with religion, it is often considered a broader and more subjective term decided by the individual (Koenig, 2009; Rosmarin et al., 2022; Sherman et al., 2021). Many researchers see religion as more organized than spirituality, while spirituality is individualistic and free from the rules, regulations, and responsibilities associated with a religion. (Koenig, 2009). Religion is thought of as having specific and established rules and beliefs that are followed (Koenig, 2012; Rosmarin et al., 2022; Sherman et al., 2021). For the purpose of this study, this paper will use the terms religion and spirituality (R/S) together.

Impact of Religion and Spirituality on Mental Health

Impact of Religion and Spirituality on Depression

Lower levels of depression have been associated with higher levels of R/S (Lucchetti, Koenig, & Lucchetti, 2021; Braam & Koenig, 2019). A meta-analysis of 93 longitudinal studies showed that two-thirds of studies found a significantly lower rate of depressive symptoms among those with higher levels of religiosity (Koenig, 2009). Researchers believe this connection is due to patients using their faith to cope with their symptoms. Another study reported that patients with cystic fibrosis who rated higher levels of general religiousness at baseline and used positive R/S coping strategies to manage their disease were less likely to develop depression (Sherman et al., 2021). In the same study, patients were asked if their spirituality impacted their coping and 64% of them said yes. Furthermore, a study by Koenig (2009) found that 1,000 patients with congestive heart failure or chronic pulmonary disease who reported being depressed were significantly more likely to report no religious affiliation.

The differences in levels of depressive symptoms may be associated with worship attendance. Fitchett et al. (2004) reported individuals who reported attending worship once a week or more had the lowest levels of depression. They reported approximately 15% of participants reported experiencing high to moderate negative religious coping and 52% reported no negative religious coping. This may be due to the social support and community that results from attending a religious service since having a social network has been shown to decrease depressive symptoms (Gwin et al., 2020). Koenig (2012) conducted a meta-analysis of 74 qualitative peer-reviewed studies on religion, spirituality, and social support that showed 82% of studies showed a positive relationship between R/S and social support. Results from the study also found that none of the studies had a negative relationship. Gwin and colleagues (2020) theorized that those with depressive symptoms may be coping in unhealthy ways such as isolating themselves, which inhibits social interaction and does not allow for a stable social

network. Having a sense of belonging has been shown to decrease depressive symptoms in participants (Choenarom et al., 2005). Social support, especially familial social support, was shown to be a protective factor against depression (Roohafza et al., 2014). Researchers believe that higher levels of R/S result in lower levels of depression because one gains social support by attending a place of worship while those who don't are using an unhealthy coping mechanism, such as isolation, instead of R/S.

Impact of Religion and Spirituality on Anxiety

While some literature suggests religion and spirituality appear to buffer anxiety symptoms, there is some disagreement about these results (Lucchetti, Koenig, & Lucchetti, 2021; Koenig, 2009). Koenig (2009) reviewed 69 observational studies that examined the relationship between anxiety and religious involvement. The results showed that 24 studies found no association between anxiety and religious involvement while 35 studies found significantly less anxiety or fear in individuals with higher levels of religiosity. One reason why many studies may have received results indicating an inverse correlation between anxiety and R/S may be due to the sense of protection given by a higher power (Flannelly et al., 2009). For example, this same study found that a belief in a close and loving God produced a statistically significant beneficial association, such as a sense of security.

Another reason may be the result of cognitive appraisal. Cognitive appraisal is when one determines whether a stimulus in their environment is relevant to their well-being (Folkman et al., 1986). When an event is appraised, it will either be positive (e.g., "God wants to challenge me to be a better person") or negative (e.g., "God doesn't care about me"). A positive appraisal is a way a person can end their distressed emotional state (Lazarus, 1991). Someone may appraise an event, such as surviving a bad car accident, positively, and may believe God caused

them to get into a car accident to challenge them to become spiritually stronger during recovery ending their emotional distress. In contrast, someone who appraises the same event negatively may instead believe God no longer loves them and abandoned them, thus allowing them to be in a bad car accident.

At the same time, cognitive appraisal may also contribute to why some people experience a positive correlation between R/S and anxiety if the event is appraised negatively. During a traumatic experience, one may find the appraisal of their belief conflicts with the appraisal of their traumatic situation which can lead to distress. The conflict in the appraisal can result in R/S struggles (McCormick et al., 2017). Additionally, religious doubt may be associated with general anxiety, which can contradict the positive effects of R/S coping by undermining one's worldview (Galek et al., 2007). While R/S may be useful for positive coping, such as an individual believing "God is trying to help me be a better person", which can lead to positive effects like a sense of security or protection. It can also result in negative copings, such as the belief "God is punishing me", which often leads to negative effects like anxiety.

Some studies that examine participants who use negative and positive coping simultaneously show no association. One such study examined religious attendance and religious importance on depression and anxiety, which reported no association between depression and anxiety and religious attendance and religious importance (Lerman et al., 2018). Rosmarin and Leidl (2020) hypothesized that the positive and negative effects of R/S behaviors cancel each other out. Positive cognition and emotional aspects (e.g., optimism and hope) of religion result in lower anxiety symptoms while negative cognition (e.g., hopelessness) of religion results in higher anxiety symptoms. The lack of studies that clearly define the relationship between R/S

and anxiety makes it difficult to conclude whether individuals use R/S coping negatively or positively. Therefore, it is difficult to determine if R/S is a good predictor of anxiety symptoms.

Impact of Religion and Spirituality Post-Traumatic Stress Disorder (PTSD)

Religion and spirituality may protect individuals from developing post-traumatic stress disorder symptoms (Lucchetti, Koenig, & Lucchetti, 2021). One study looked at civilian military security coordinators in Israel following terror incidents in 2018 and found a negative correlation between PTSD and spirituality (Weinberg & Elimellech, 2022). While most studies seem to support a negative correlation between PTSD and R/S, Chen and Koenig's (2006) review examined 11 cross-sectional surveys from 2004 and earlier to determine whether there is a relationship between religion and stress. Ten of the 11 surveys reported either significant positive or negative correlations between PTSD and R/S. Conversely, three surveys found a mixed relationship and three found a negative relationship.

It is unknown whether the belief, "God is protecting me", or the ritual, prayer, or attending a place of worship is the reason why lower levels of PTSD are associated with higher levels of R/S. One study found those who attended church every week were 60% less likely to have PTSD compared to those who did not attend church (Mathew et al., 2020). This may support the theory that social support may be a contributing factor in why many studies have found negative correlations between R/S and PTSD.

Furthermore, not all studies have found a higher levels of R/S result in lower levels of PTSD symptoms. Leo et al.'s (2021) meta-analysis found that most who experienced a traumatic event did not change their religious beliefs. However, those who had PTSD were more likely to increase or decrease their religious beliefs than those who didn't develop PTSD. Another study found that only 18% of veterans with trauma drastically changed their R/S beliefs (Sherman et

al., 2018). Furthermore, a study looking at those who had a higher number of adverse childhood experiences (ACEs) was found to have a higher degree of meaning struggles, which are struggles with one's beliefs or values, and mental health symptoms (McCormick et al., 2017). Additionally, meaning struggles have been associated with emotional distress (Exline et al., 2013).

While some research shows a relationship between R/S and PTSD, this relationship is significantly less researched than the relationship between R/S and other variables such as anxiety or depression. Therefore, not enough research may exist to determine if the benefits are mostly positive or negative. The effects of R/S on PTSD may change depending on how one uses it, such as how one uses it to cope with PTSD symptoms. Negative coping has been associated with higher levels of PTSD, while higher levels of positive coping have been associated with higher levels of post-traumatic growth (Gerber, Boals, & Schuettler, 2011).

Impact of Parental Religion and Spirituality on Children

Parental religiousness has many effects on children and research has shown parental R/S to have a positive impact on a child's psychological health. Research has shown there is a positive effect if one or both parents are religious, such that children are more likely to attend a place of worship (Bartkowski et al., 2008). Attending a place of worship has been shown to have positive effects on mental health. One study reported those who attended a place of worship at least once a week had the lowest levels of depressive symptoms (Fitchett et al., 2004). Chiswick and Mirtcheva (2012) found that 82% of participants who attended church at least once a week were psychologically healthier compared to 74% who did not. Psychological health was determined based on whether the child had been hospitalized for a mental health reason, if the last doctor's visit was mental health-related, or if they had been diagnosed with a mental health

disorder. The same trend was similarly reported when participants were asked if their religion was important to them. The same study found about 81% of participants who reported their religion was important to them were psychologically healthy while only 65% of those whose religion wasn't important.

Parental R/S may also impact children's physical health. Researchers also wanted to determine if child religion had a positive or negative impact on overall health and physical health, which was determined by the child's primary caregiver (PCG). If the PCG reported excellent or very good health the child was classified as healthy compared to less healthy for fair or poor health. It was reported that of participants for whom religion was important to them, 85% were healthy overall compared to 81% for those for whom religion wasn't important to them (Chiswick & Mirteva, 2012).

R/S may have other positive impacts on children, such as their cognitive development. Bartkowski et al., (2008) reported family arguments about religion have negative effects on children, while child-parent discussions about R/S have a positive effect. For example, the same study found the frequency of religious discussions significantly increased a child's cognitive development in the household. Mothers and fathers who attend a place of worship frequently also have a positive effect on the child's social skills. King (2003) theorized some of the benefits may be due to the active role of parents with high R/S levels. King reported fathers, whether they are married or single, who are religious are more involved in their children's lives. Another study found this was also found to be true of mother-child relationships (Pearce & Axinn, 1998). Additionally, research has found that parents who attended a place of worship more often had more parental supervision than parents who attended less (Smith, 2003).

In addition to the impact of parental R/S on their child's cognitive development and mental and physical health, more religious parents have more moral expectations of their children regarding risky behaviors. Eighty-six percent of parents who attend church weekly would be very upset if they discovered their adolescent child was having sex compared to 73% who never attended church. Parents who attend church more often would be more upset if their child engaged in sex, used drugs, drank alcohol, got into fights, and skipped school than those who attended less (Smith, 2003). One study found a negative correlation between R/S and drug use, but once they controlled for school attachment and volunteering, they found the correlation decreased by more than 5% level (Neymotin &. Downing-Matibag, 2013).

One reason behind the benefits of parental R/S on children may be due to their parents being role models. Adolescents named their male and female role models as primarily family members, mostly parental figures, mothers/stepmothers (56%), and fathers/stepfathers (37%) (Hurd et al., 2009). Those who had positive role models, whether peer or non-peer role models were found to use alcohol less and engage in less risky behaviors (Hurd et al., 2009, Oman et al., 2004). Since parents who score higher on R/S are more involved (King et al., 2003; Pearce & Axinn, 1998), children may be more likely to not engage in risky behavior because they are reaping the benefits of positive role models.

Religion has a moderate, negative association with the use of marijuana, alcohol, amphetamines, and depressants. Peer drug use is known to be a strong predictor of underage drug use, but those who had higher levels of religiosity also had a negative correlation with peer drug use. R/S may provide a good social network, church, and friends who did not use drugs (Bahr et al., 1998). Parents and other members of their R/S group may provide good role models who do not use drugs, therefore decreasing drug use in those with higher levels of religiosity. It

is also possible the increased supervision of children with parents with higher levels of R/S leads them to find friends their parents will approve of.

Impact of Surgical Procedures on Child Depression, Anxiety, and PTSD

Undergoing a surgical procedure can be an overwhelming experience. Children who undergo a surgical procedure may see frightening medical technology, be separated from their caregiver(s), or experience intense pain and discomfort (Forgey & Bursch, 2013). These experiences may result in psychologically negative experiences such as depression, anxiety, and PTSD. Following an accident, the prevalence rate of self-reported PTSD was 11.6% three months post-accident in children aged 8-18 years of age. Furthermore, in the same sample of children, the prevalence rate of PTSD was similar at the second follow-up two to four years after the accident at 11.4% (van Meijel, 2019). Stanzel & Sierau (2022) found similar results in their systematic review, up to 13% of children between the ages of 1 to 21 years had symptoms consistent with PTSD.

One study found that 17% of children who underwent a tonsillectomy fulfilled the criteria for a minor depressive episode according to ICD-10 criteria persisting three months later (Papakostas et al., 2002). One systematic review reported the average and weighted prevalence rate across three studies on post-operative depressive symptoms was 6%. The same study found an 8% prevalence of anxiety symptoms (Stanzel & Sierau, 2022). Most of the current literature on child depression and child anxiety examines symptoms before a surgical procedure, therefore more research is needed to examine the relationship between child depression and anxiety post-surgery to better understand depression and anxiety following a surgical procedure. The prevalence of depression and anxiety increases following a surgical procedure compared to depression and anxiety before surgery (Park et al., 2016). Therefore, it is important to further

investigate postoperative mental health disorders such as depression, anxiety, and PTSD to better aid those following a surgical procedure by identifying effective coping mechanisms. Furthermore, R/S may be used to help cope after a surgical procedure and should be investigated to determine if it can be used to improve mental health outcomes after surgery in children.

Specific Aims and Hypotheses

The purpose of this study was to investigate how the parental level of R/S impacts a child's mental health after a surgical procedure. We accomplished this by assessing how parental religion and spirituality are related to child depression, anxiety, and post-traumatic stress disorder in children ages 7 to 17 years old.

Aim 1: Investigate how parental R/S impacts child depression after a surgical procedure.

Hypothesis 1*:* Higher levels of parental R/S will be associated with lower child depression symptoms.

Aim 2: Investigate how parental R/S impacts child anxiety after a surgical procedure.

Hypothesis 2*:* There will be no relationship between parental R/S and child anxiety.

Aim 3: Investigate how parental R/S impacts child PTSD after a surgical procedure.

Hypothesis 3*:* Higher levels of parental R/S will be associated with lower child PTSD symptoms.

CHAPTER 2

Methods

Participants

Participants included 18 parents who had a child between the ages of 7 and 17 who had a surgical procedure within 12 months of completing the survey. The sample of parent participants were 88% female, 6% male, and 6% other gender. As for race, 94% of parents identified as

White with only 6% identifying as Black. Additionally, 89% of parent participants reported their ethnicity was non-Hispanic and 11% reported they were Hispanic. The average age of parents was 42.22 years of age with a standard deviation of 7.41.

Child-report data was obtained from 14 children from the ages of 7 to 17 years of age. Demographic information about the child was obtained from the parent report. The average age was 11.17 with a standard deviation of 2.94 for child participants. 44% were female and 56% were male. Additionally, 83% identified as white, 6% identified as black, and the remaining 11% identified as multiracial. 89% of parents reported their child was non-Hispanic and 11% reported their child was Hispanic in ethnicity. As for surgery type, 16% of child participants had emergency surgery, 6% had urgent surgery, 72% had scheduled surgery, and 6% had elective surgery.

Procedure

The University of South Dakota Institutional Review Board approved all measures and procedures for this study. Participants were recruited via flyers at community events (e.g., community events for families and children's library clubs), non-profits and organizations that serve pediatric patients (e.g., United Way and Ronald McDonald House), and clinics (e.g., dentist offices and pediatric hospitals) that serve pediatric patients. Participants were also recruited using an online research registry, Research Match.

To participate in the study, parents needed to have a child who was between 7 and 17 years of age and their child also needed to have undergone a surgical procedure within 12 months of completing the survey. Parents who were recruited via distributed flyers used the flyers to sign up for the study by scanning a QR code that prompted them to provide their contact information. Afterward, an email was sent to participants who expressed interest in completing

the survey that contained a personalized Qualtrics link which included the consent form. Parents were asked to complete a survey that asked about their child's experiences following their child's surgery. To ensure their child could independently complete the survey, they were also asked if their child could read. At the end of the survey, they were asked if their child had an email address. If their child had an email address, the parent or caregiver was asked to provide their child's email and a survey was sent to the child to complete. If not, the child's survey link was sent to the parent to give to their child. The child also must consent to participate in the study. The child then completed a survey that asked about their experiences following their surgical procedure. After both the child and parent completed the survey, participants were given one $25 Amazon gift card and a workbook that helps children cope after a medical procedure.

Participants recruited via Research Match received a contact message asking if they were interested in participating in the study and clicked yes or no. Individuals who indicated they were interested in participating in the study were sent an individualized link to the survey. After completing the survey, participants received a workbook that helps children cope after a medical procedure. Participants recruited via Research Match did not receive a monetary incentive (e.g. $25 Amazon gift card) to help reduce the likelihood of invalid data completed by bots. 12 of the participants were recruited via distributed flyers while the remaining 6 were recruited via Research Match.

Measures

Demographics. Participants were given a self-report questionnaire asking about their gender, age, ethnicity, race, level of education, income, marital status, and how many children they have. Participants were also asked to provide information about their child including their age, gender, ethnicity, and race.

Parental Religion/Spirituality. To measure parental religion/spirituality parent participants were asked, "*I am a religious/spiritual person*." The item was measured on a five-point Likert scale that used a unidirectional scale (0 = Not at all, 1 = Slightly= 2, Moderately, 3 = Very, 4 = Extremely). Participants were also asked, "*What religion does your family most closely adhere to*?". This item aimed to measure whether a participant's family adhering to a specific religion had any impact on child depression, anxiety, or PTSD symptoms.

Revised Children's Anxiety and Depression Scale (RCADS-25) Parent Report. The Revised Children's Anxiety and Depression Scale (RCADS-25) Parent Report was taken by parent participants. It is a 25-item self-report survey that measures anxiety and depressive symptoms in children by asking parents to rate their child's mental health symptoms. It is scored using a 4-point Likert scale, (0 = never, 1 = sometimes, 2 = often, and 3 = always). Fifteen of the 25 items measure anxiety symptoms in children. The other 10 items are used to measure depression scores in children. Scores from the anxiety items can range from 0-45 while the depression items' scores can range from 0-30.

The RCADS-P has demonstrated good internal consistency with a Cronbach alpha value with a Cronbach alpha value of .96 in anxiety and .80 in depression. As for the school-based sample, the RCADS-P also demonstrated good internal consistency in anxiety with a Cronbach alpha value of .94 and depression with a Cronbach alpha value of .79. Additionally, the same study reported the RCADS-P had good retest-test reliability in both clinical and school populations for children aged 7 to 17 years of age (Ebesutani et al., 2017).

PTSD Reaction Index (PTSD-RI) Parent Report. Parent participants completed the UCLA PTSD Reaction Index for Children/Adolescents Parent Report (UCLA-RI), which is a 31-item self-report questionnaire that measures posttraumatic stress symptoms in children by asking

parents about their child's mental health symptoms. The UCLA-RI Parent Report is based on DSM-V criteria. All 31 items use a five-point Likert scale ranging from 0 - 4 (0 = None, 1 = Little, 2 = Some, 3 = Much, and 4 = Most) asking the parent to rate the frequency of their child's PTSD symptoms during the past month. This measure has been validated for use with children ages 7 to 18 years old. When scoring, a cutoff value of 35 is used to diagnose PTSD (Department of Veteran Affairs). The PTSD-RI parent report has good internal consistency with a Cronbach alpha of 0.96 (Ramos et al., 2022).

Revised Children's Anxiety and Depression Scale (RCADS-25) Child Report. Child participants completed the Revised Children's Anxiety and Depression Scale (RCADS-25), which is a 25-item self-report survey that measures anxiety and depression in children. It is scored using a 4-point Likert scale, (never = 0, sometimes = 1, often = 2, and always = 3). 15 items measure anxiety symptoms in children and 10 items are used to measure depression scores in children. The score from the anxiety items can range from 0-45 while the depression items' score can range from 0-30. The RCADS-25 was reported to be an effective method of assessing anxiety and depression in children as young as 7 years of age (Carlander et al., 2023).

The structural validity, internal consistency, test-retest reliability, and criterion validity of the RCADS-25 for anxiety symptoms have been reported as sufficient and researchers consider it a reliable and valid screening measure for children and adolescents. As for the depression items, they were demonstrated to have good test-retest reliability (Klaufus et al., 2020). Both the anxiety and depression items are reported as a reliable and valid method of measuring anxiety and depression in children in a variety of populations (Lisøy et al., 2022; Young et al., 2021). The RCADS-25 broad anxiety has demonstrated good internal consistency with a Cronbach alpha value of 0.82 (Klaufus et al., 2020).

PTSD Reaction Index (PTSD-RI) Child Report. Child participants completed the UCLA PTSD Reaction Index for Children/Adolescents (UCLA-RI), which is a 31-item self-report questionnaire that measures PTSD symptoms in children as young as 7 years of age based on DSM-5 criteria. All 31 items use a five-point Likert scale ranging from 0-4 (0=None, 1=Little, 2=Some, 3= Much, and 4= Most) to ask children the frequency of PTSD symptoms.

The UCLA-RI has been shown to have good internal consistency in many different countries throughout the world, including the United States (Doric et al., 2019; Kaplow, 2020). The UCLA-RI total score has demonstrated good internal consistency with a Cronbach alpha value of 0.92 (Doric et al., 2019). The UCLA-RI has also demonstrated criterion-related, convergent, and discriminant validity (Kaplow, 2020).

Statistical Analyses

The data were analyzed using the Statistical Package for Social Sciences (SPSS). The data were analyzed with a correlation coefficient to determine if there was a relationship between parental responses on the R/S item and the child's scores on depression, anxiety, and PTSD. Specifically, three Pearson's correlation analyses were run: 1) to determine if higher R/S was negatively associated with child depression (Hypothesis 1); 2) to determine if there was an association between R/S and anxiety (Hypothesis 2); and 3) to determine if there was a negative association between R/S and PTSD (Hypothesis 3).

Analysis of variance was used to compare child depressive, anxiety, and PTSD symptoms between parents with low spirituality (reported "Not at all" or "Slightly" spiritual) compared to parents with high spirituality (reported "Moderately" spiritual or higher). Analyses were conducted first for parent-report of child mental health symptoms. Then, analyses were replicated for child-report of child mental health symptoms.

CHAPTER THREE

Results

Parent spirituality and religion data are presented in Table 1.

Table 1

Parental Religion and Spirituality

Parental Spirituality	Percentage
Not at all	17%
Slightly	28%
Moderately	33%
Very	11%
Extremely	11%
Parental Religion	**Percentage**
Christian	83%
None	11%
Paganism	6%

Note. n = 18

Parent-Report Data

Using parent-report of child mental health, there was no significant correlation between parent spirituality and child depressive symptoms, r = -.308, p = .214. Thus, Hypothesis 1 was not supported. There was no significant correlation between parental spirituality and child anxiety symptoms, r = -.158, p = .531. Thus, this finding supports Hypothesis 2. There was no significant correlation between parental spirituality and child PTSD symptoms, r = -.093, p = .713. Thus, Hypothesis 3 was not supported.

Table 2

Parent-Reported Child Depression, Anxiety, and PTSD

	Low Spirituality		High Spirituality	
	M	*SD*	*M*	*S*
Depression	4.38	2.56	3.20	2.25
Anxiety	6.25	3.92	4.60	4.20
PTSD	10.88	10.20	6.80	7.35

Note. n=18

Table 2 displays means and standard deviations for parent-reported child mental health symptoms (depression, anxiety, and PTSD), comparing low spirituality parents to high spirituality parents. There was no difference between parents who reported high spirituality compared to parents who reported low spirituality for child depressive symptoms, $F(1, 16) = 1.07$, $p = .316$. There was no difference between parents who reported high spirituality compared to parents who reported low spirituality for child anxiety symptoms, $F(1, 16) = .73$, $p = .406$. There was no difference between parents who reported high spirituality compared to parents who reported low spirituality for child PTSD symptoms, $F(1, 16) = .972$, $p = .339$.

Child-Report Data

Using child self-report of their mental health symptoms, there was no correlation between parent spirituality and child depressive symptoms, $r = -.237$, $p = .414$. Thus, Hypothesis 1 was not supported. Additionally, there was no significant correlation between parental spirituality and child anxiety symptoms, $r = .007$, $p = .982$. Thus, Hypothesis 2 was supported. There was no significant correlation between parental spirituality and child PTSD symptoms, $r = -.147$, $p = .617$. Thus, Hypothesis 3 was not supported.

Table 3

Child-Reported Depression, Anxiety, and PTSD

	Low Spirituality		High Spirituality	
	M	*SD*	*M*	*SD*
Depression	6.88	6.06	3.67	1.51
Anxiety	10.38	7.58	6.67	7.58
PTSD	16.50	18.33	7.50	7.12

Note. n=14

When using child self-report of mental health symptoms, there was no difference for high versus low spirituality for child depressive symptoms, $F(1, 12) = 1.58$, $p = .233$. Additionally, there was no difference for high versus low spirituality for child anxiety symptoms, $F(1, 12) = 1.27$, $p = .283$. There was no difference for high versus low spirituality for child PTSD symptoms, $F(1, 12) = 1.28$, $p = .280$.

Table 4 provides a summary of the correlational results found in this study, for parent-report data and for child-report data. No correlations were significant.

Table 4

Correlation between parent-reported and child-reported Depression, Anxiety, and PTSD and R/S

	Parent-Report		Child-Report	
	r	*p*	*r*	*p*
Depression	-.308	.204	-.237	.414
Anxiety	.158	.531	.007	.982
PTSD	-.093	.713	-.147	.617

Note. Parents n = 18. Children n = 14.

CHAPTER FOUR

Discussion

The prevalence of mental health disorders like depression, anxiety, and PTSD makes finding effective ways to cope with or lessen the impact of mental health disorders of high importance. High R/S has been shown to lessen symptoms of depression and anxiety in adults (Lucchetti, Koenig, & Lucchetti, 2021). Undergoing a surgical procedure may be a traumatic event for children, as they may see terrifying equipment, be separated from their caregivers, or experience pain or discomfort (Forgey & Bursch, 2013). After surgery, it was reported that children had elevated levels of depression and anxiety symptoms compared to before their surgery (Park et al., 2016). As for PTSD, 13% of children 1 to 21 years of age had symptoms consistent with PTSD (Stanzel & Sierau, 2022). Therefore, it is important to investigate potential protective factors against mental health disorders such as child depression, anxiety, and PTSD. This study investigated the relationship between parental religion and spirituality and child depression, anxiety, and post-traumatic stress disorder symptoms following a surgical procedure.

Aim 1 examined whether parental R/S impacted child depression. Contrary to Hypothesis 1, no significant correlation between child depression and R/S was found using both parent-report and child-report measures. While the relationship is not significant, it is consistent with the available literature in that the correlation found was negative for both parent and child reports of child depression. Most of the literature on adults has found that higher levels of spirituality correlate with lower levels of depression (Lucchetti, Koenig, & Lucchetti, 2021; Braam & Koenig, 2019). This may be a result of social support and community one gains from attending a place of worship and social support has been reported to lessen depressive symptoms (Gwin et

al., 2020). Fitchett et al. (2004) found individuals who reported attending a place of worship at least once a week reported the lowest levels of depression in the sample. They also found approximately 15% of participants reported experiencing high to moderate negative religious coping and 52% reported no negative religious coping.

This study only examined whether there was a relationship between parental R/S and child depressive symptoms. As parent participants were not asked if their family attended a place of worship, it is unknown whether parent or child participants attended a place of worship and whether that correlated with parental R/S and depressive symptoms in children. Therefore, more research is needed to examine whether there is a relationship between parental R/S and child depression and differences in R/S coping styles.

Aim 2 investigated the impact of parental spirituality on child anxiety. No relationship between parental R/S and child anxiety was found, for parent-report data nor for child-report data, which supported Hypothesis 2. While the difference in means for child-reported anxiety was larger compared to the difference in means in anxiety for parent-reported child anxiety, no mean differences were significant. This is consistent with some of the literature. Koenig's (2009) review of 69 studies reported 24 studies found no association between R/S and anxiety. Another study examined the impact of attendance of religious services and the importance of religion in participants' lives on depression and anxiety, and they reported no association between anxiety and religious attendance and religious importance (Lerman et al., 2018). Some researchers hypothesize these mixed results are due to the positive and negative effects of spirituality canceling each other out in statistics (Rosmarin & Leidl, 2020). How one cognitively appraises an event, such as surgery, may affect one's mental health. It is possible that some participants appraised their surgery negatively, "God hates me," which resulted in worse anxiety symptoms

and other participants appraised the event positively, (e.g., "It is a challenge God has given me"). Positive cognitive appraisal may end distress (Lazarus, 1991). Conversely, a conflict in the current appraisal with the old one, (e.g., before surgery believes God is kind, but afterward believes God has abandoned them), can lead to distress (McCormick et al., 2017). To summarize, as this was a correlational study, if children used R/S to cope in different manners, no correlation would appear. While parental R/S may not predict child anxiety, this study did not differentiate between children who used positive and negative coping. It is also possible that parental R/S is not a good predictor of child anxiety following a surgical procedure; more research is needed to examine if there is a relationship between R/S and child anxiety.

Finally, aim 3 investigated the relationship between parental R/S and child PTSD. Contrary to Hypothesis 3, there was no relationship between the two constructs. Similarly, no significant differences were found in child PTSD symptoms for high spirituality versus low spirituality parents in the analyses of variance. However, it is noteworthy that for the child-report data, the mean child PTSD score in the low spirituality group was almost double the mean child PTSD score in the high spirituality group. A similar trend was present for the parent-report data of child PTSD symptoms as well. Thus, children with parents with high R/S tended to have lower levels of PTSD, for both parent-report and child-report. Additionally, the child report showed a qualitatively larger difference in means of high and low R/S than the parent report of child PTSD symptoms, although these differences were not significant. Although not definitive, taken together, these findings are indicative that higher parental spirituality in children may result in fewer PTSD symptoms for children.

Chen & Koenig's (2006) review of 11 studies that investigated the relationship between stress and trauma and R/S found 4 studies had a positive relationship and 3 studies had a

negative relationship between stress and trauma and R/S. This may indicate that R/S is only sometimes a protective factor against PTSD following a potentially traumatic event or only for some potentially traumatic events. Whether or not R/S is a protective factor against PTSD following a traumatic event may be dependent on how one uses it to cope. Those who use negative R/S coping tend to have higher PTSD symptoms than those who use positive coping (Gerber, Boals, & Schuettler, 2011). It is also possible attendance at a place of worship impacts whether a correlation between R/S and PTSD symptoms exists. Mathew et al. (2020) reported individuals who attended church weekly were 60% less likely to have PTSD than individuals who did not attend church weekly. Due to the small sample size, more research is needed to determine if there is a relationship between parental spirituality and child PTSD after a surgical procedure, the impact of positive and negative coping compared to the attendance of a place of worship, and whether R/S is used to cope after a surgical procedure in children.

When looking at the mental health data descriptively, children tended to report greater mental health symptoms in themselves than their parents reported about them. These differences were most pronounced in the low spirituality group, where parent-report and child-report mental health means diverged the most, with children reporting greater symptom severity. Whether the parent or caregiver is spiritual may impact parent and child agreement on child mental health reports. Further research should investigate the difference in child and parent reports of child mental health symptoms to determine if parental R/S impacts parent and child agreement on child mental health reports.

Study Limitations and Future Directions

There were a few limitations in this study. First, the study contained a small sample size of 18 parents and 14 children. The sample size likely affected the results of this study, as power

was insufficient to detect significant effects, despite means differences that seemed qualitatively large. Future research should include a larger sample size. Second, this study looked at children between 7 and 17 years of age. Parental spirituality may not have the same impact on a child who is 7 years of age as a child 17 years of age. Therefore, future research should narrow the age of child participants. To measure the effects of spirituality in older children, their spirituality should also be measured to investigate the differences in parent and child spirituality. Future research should also examine the relationship between positive and negative coping and mental health disorders in children.

Parental R/S may not have the same impact on children's depression, anxiety, and PTSD as adult's R/S on their mental health. Some children, even at a young age, may not have the same beliefs as their parents. Future research should take into consideration how a child's own R/S impacts their mental health after a surgical procedure.

As the research on the relationship between parental spirituality and child mental health disorders is limited, it is important to further examine if there is a relationship, and if that relationship lessens mental health disorders or not. This study found that parental R/S did not predict child depression, anxiety, or PTSD. If a relationship exists between parental R/S and child mental health disorders that lessens symptoms of mental health disorders, R/S may be used to help children cope with surgeries and integrated into therapies in ways that work for religious and non-religious families. If R/S worsens children's mental health, then it is important to understand how to avoid the negative effects of R/S without negatively impacting the religious or spiritual beliefs of families. If there is a correlation between parental R/S and psychopathology, the reason behind this link can be found and used to help children overcome or prevent mental health disorders like depression, anxiety, and PTSD. This information could be used to develop

new therapies and mental health treatments for children who come from religious and non-religious families.

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