Published in final edited form as:

J Child Fam Stud. 2020 February ; 29(2): 502–513. doi:10.1007/s10826-019-01595-2.

The Association of Religion and Spirituality with Postpartum Mental Health in Women with Childhood Maltreatment Histories

Jonathan E. Handelzalts,

Department of Psychiatry, University of Michigan, Ann Arbor, MI.

The Academic College of Tel-Aviv Yaffo, Tel-Aviv, Israel.

Marissa K. Stringer,

Department of Psychiatry, University of Michigan, Ann Arbor, MI.

Rena A. Menke,

Department of Psychiatry, University of Michigan, Ann Arbor, MI.

Maria Muzik

Departments of Psychiatry, Obstetrics & Gynecology, University of Michigan – Michigan Medicine, Ann Arbor, MI.

Abstract

Objectives—Although the associations between religion and spirituality and mental health and trauma have been studied extensively across various populations, relatively few studies have focused on the postpartum period. This study aimed to shed light on specific domains of religiosity and spirituality that may be resiliency factors for positive postpartum adjustment defined as low depression and high quality of life in mothers oversampled for childhood trauma histories.

Methods—We examined several religion and spirituality variables among 108 women at 6 months postpartum as well as prospective relations from religion and spirituality to postpartum depression and quality of life at 12 and 15 months postpartum.

Results—We found that the personal aspects of self-forgiveness and forgiveness for others were most relevant as resiliency factors predicting lower postpartum depression and better quality of life even when controlling for other risks (trauma and demographics). Surprisingly, no other religion and spirituality domain had associations with postpartum depression or quality of life, with the exception of a significant negative association for organizational religiousness with quality of life at 12 months postpartum.

Correspondence concerning this article should be addressed to Maria Muzik, Department of Psychiatry—University of Michigan, 4250 Plymouth Road, Ann Arbor, MI 48109. muzik@med.umich.edu. Office phone: (734) 846-8027.

Author contributions: JH assisted with the data analyses, and wrote the paper. MS analyzed the data and wrote part of the results, RM assisted with the data analyses and writing of the methods/results. MM was the PI of this project, and oversaw the data collection and analyses as well writing of the paper.

Conflict of interest statement: The authors declare that they have no conflict of interest.

Data availability statement: The data is available upon request from the corresponding author.

Publisher's Disclaimer: This Author Accepted Manuscript is a PDF file of an unedited peer-reviewed manuscript that has been accepted for publication but has not been copyedited or corrected. The official version of record that is published in the journal is kept up to date and so may therefore differ from this version.

Conclusions—Our findings suggest that forgiveness, especially to self and to others, in women who have been physically and mentally hurt as children may be associated with mental wellness and quality of life in the late postpartum period. Further, our results point to the need to study specific religion and spirituality aspects in the context of specific populations and conditions instead of generally studying religion and spirituality as a common marker for coping.

Keywords

Religion; Spirituality; Forgiveness; Trauma; Postpartum; Depression; Quality of life

The postpartum time is a period of transition wherein a mother undergoes significant changes, increasing her vulnerability to psychopathology (e.g. Van der Woude, Pijenborg, & de Vries, 2015). It is a time of tremendous physical, emotional, and social changes, which may also impact her quality of life (Irwin, Beeghly, Rosenblum, & Muzik, 2016; Mogos, August, Salinas-Miranda, Sultan, & Salihu, 2006) as well as make her prone to postpartum depression (O'Hara & McCabe, 2013). Not surprisingly, postpartum depression is found to be associated with quality of life (Van der Woude, Pijenborg, & de Vries, 2015; Webster, Nicholas, Velacott, Cridland, & Fawcett, 2011), and postpartum mothers' subjective quality of life is highly relevant to the well-being of the family as a whole (Irwin, Beeghly, Rosenblum, & Muzik, 2016). Particularly, mothers with adverse childhood experiences have increased vulnerability to postpartum depression (Morelen, Rosenblum, & Muzik, 2018). Many studies focus on resiliency factors for positive postpartum wellbeing (i.e., low depression and high quality of life), particularly in the context of maternal childhood abuse (Irwin, Beeghly, Rosenblum, & Muzik, 2016; Martinez-Torteya, Katsonga-Phiri, Rosenblum, Hamilton, & Muzik, 2018). However, of the many potential postpartum resiliency factors, one factor (that is, an individual's religiosity and spirituality) has received less attention.

Although there are many different definitions for religiosity and spirituality (R/S), they can be understood as dimensions of human experience that involve beliefs, practices, and experiences related to transcendent or sacred reality (Miller & Thoresen, 2003). Although interrelated, religiosity and spirituality are empirically and theoretically different. It was suggested that religiosity involves behaviors related to organized traditions, while spirituality usually refers to more general beliefs and experiences. Many individuals may identify as both religious and spiritual, but not all do (Miller & Thoresen, 2003) and it is possible to be spiritual being religious and vice versa (Hall, Meador, & Koenig, 2008).

Although the link between R/S and mental health has been studied extensively across various populations, relatively few studies have focused on the postpartum period (Cheadle et al., 2015; Cheadle & Schetter, 2018; Clements, Fletcher, Childress, Montgomery, & Bailey, 2016; Mann, McKeown, Bacon, Vesselinov, & Bush, 2008). Most studies in non-perinatal populations show positive relationship between R/S and mental health. Across varying populations and cultures greater R/S was associated with better mental health (e.g. AbdAleati, Mohd Zaharim, & Mydin 2016; Koenig, 2009; Paloutzian & Park, 2013), for example, lower rates of depression, anxiety and other stress-related mental illnesses (Oman & Lukoff, 2018). Similarly, a large meta-analysis reported direct effects of religiousness on

fewer depression symptoms, even when controlling for gender, age, or ethnicity. The inverse association between religiousness and depression was strongest in studies involving people undergoing recent life stress (Smith, McCullough, & Poll, 2003). In addition, the positive effect of R/S was not limited to depression but also found for quality of life (Mosqueiro, da Rocha, & de Almeida Fleck, 2015; WHOQoL SRPB Group, 2006).

R/S experiences may be especially relevant for postpartum women as many traditions attach religious and spiritual significance to childbirth, parenthood, and family (Cheadle et al., 2015). The postpartum period may be regarded even in the best circumstances, as a period of heightened stress, based on sleep deprivation, recovery from birthing, emotional demands and hormonal transitions (e.g. Matthey, 2016). In addition, the post-partum period is a time of personal and familial transition and can be a high stress period. Therefore, R/S could serve as potential modifying forces or guiding factors to prevent postpartum depression and/or enhance quality of life.

However, research regarding the role of R/S in the postpartum period is more limited. In one study of mostly Christian, African-American new mothers, authors reported that those mothers with lower R/S evidenced more depressive symptoms during the first 6 postpartum months (Cheadle et al., 2015). In a longitudinal study following mothers for 12 months postpartum, religion and spirituality separately and as a latent factor predicted decreasing trajectory of depressive symptoms (Cheadle & Schetter, 2018). Similarly, in another longitudinal study of mostly poor postpartum women in rural Appalachia, those with low social support or religious commitment were at highest risk for depression (Clements, Fletcher, Childress, Montgomery, & Bailey, 2016). Finally, in a prospective cohort study, organized religious participation was found to be protective for the development of postpartum depression (Mann, McKeown, Bacon, Vesselinov, & Bush, 2008). In sum, while limited in scope, the currently available data point to R/S as potentially protective of postpartum depressive symptoms.

Prior work has shown a strong link between mothers' experiences of childhood trauma, such as abuse, neglect or significant household dysfunction, and postpartum mental health problems (Morelen, Rosenblum, & Muzik, 2018). In these contexts, R/S may be particularly relevant. R/S and childhood abuse may have reciprocal relationships, such that R/S beliefs may buffer the impact of childhood abuse, whereas childhood abuse may shape the development of adult R/S (Dervic, Grunebaum, Burke, Mann, & Oquendo, 2006). Prior work has also suggested that R/S may help in trauma recovery and support coping/resilience in the face of adversity (Morgan, 2009; Southwick, Litz, Charney, & Friedman, 2011). In addition, R/S were suggested as possible mechanisms to promote stress resilience in survivors of childhood trauma (Brewer-Smyth & Koenig, 2014) and may, in some cases, be a moderator of the development of posttraumatic responses in childhood abuse survivors (Walker, Reid, O'Neill, & Brown, 2009).

Thus, given that childhood abuse history is a known risk factor for postpartum mental health, and that R/S has been identified as one potential buffer in the face of abuse, we are particularly interested in exploring these links. We specifically wonder whether for mothers who are childhood abuse survivors, early postpartum R/S may function as a resiliency factor

against the onset of postpartum depression and self-rated low quality of life across the subsequent postpartum period. We hypothesize the existence of this buffering role, such that high R/S measurements at 6 months postpartum will be associated with lower depression symptoms and higher ratings of quality of life at 12 and 15 months postpartum, even when controlling for severity of childhood abuse and demographic risk.

Methods

Participants

Our sample consisted of a subset ($n=108/268$) of postpartum women recruited from a larger longitudinal study (removed for blind review) examining the associations between maternal childhood abuse and adjustment to motherhood, parenting, and infant outcomes. Participants were recruited either as a follow-up to a parent study or through community advertisements. All participants were non-psychiatrically referred English-speaking women, aged 18 years and older, who were up to four months postpartum. Exclusion criteria included diagnoses of schizophrenia or bipolar disorder, substance use problems within the last three months, and mothers of infants with self-reported severe health/developmental problems or more than 6 weeks premature.

Procedures

The study was approved by the University of Michigan review board with mothers providing oral informed consent at the four-month enrollment phone call and written consent at the 6 month home visit. Mothers were enrolled before or at 4 months postpartum and followed until the child's age of 18 months. Longitudinal data collection on maternal and infant metrics occurred at 4, 6, 12, 15 and 18 months postpartum and included information on maternal demographics, childhood trauma, mental health, and observed and self-reported parenting, as well as child attachment and behaviors and mother-and-infant physiology.

In this paper, we report on maternal data collected at 4, 6, 12 and 15 months postpartum, and only on a subset of mothers ($n=108$) who were given the Brief Multidimensional Measure of Religiousness and Spirituality (BMMRS; Fetzer Institute/National Institute on Aging Working Group, 1999); this measure had been added after study initiation and thus only a subset provided data. There was no difference between the overall sample and subsample with completed BMMRS on any demographic characteristics except race; the subsample had fewer African American women (73% in the overall sample versus 23% in the subsample). Therefore, race was added as a covariate (as part of the demographic risk variable). Due to attrition, the 12 month (20%) and 15 month (13%) quality of life and depression measures had a smaller sample size, and this is reflected in the tables. Participants were compensated up to \$140 across the study period.

Participant demographics are displayed in Table 1. Overall, the sample had relatively low demographic risk ($\bar{x} = 1.03$, $sd = 1.33$), which we defined by low income, low education, young maternal age ($\bar{x} = 29$ years, $sd = 5.57$), being unpartnered, and being a non-white minority; however, over 70% of the sample reported experiencing some type of childhood abuse or neglect, and about half of those (35.2%) indicated their previous childhood abuse or

neglect as severe. Most of the participants (58%) reported more than one type of childhood abuse. The religious preferences of the sample were mainly of Christian denomination (74.1%), followed by non-religious (19.4%), Islam (3.7%), Buddhist (2.8%), and Judaism (2.8%). These were further categorized into Christian denomination, Nonreligious, and Non-Christian (see Table 1). Across these three groups, there were no significant differences on any of the predictor or outcome variables.

Measures

Childhood abuse—The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) was completed at the 4 months postpartum visit, when participants rated their childhood experiences on this 28-item self-report questionnaire. The CTQ yields information on childhood physical, sexual and emotional abuse, and physical and emotional neglect. Each item was rated on a 5-point Likert scale ranging from 1 (never true) to 5 (very often true), with some items reverse-scored to yield a continuous total score (total CTQ score; $\alpha = 0.936$). Higher total CTQ score indicates more abuse exposure. Examples of items are: “[When I was growing up] I didn’t have enough to eat”, “Someone threatened to hurt me or tell lies about me unless I did something sexual with them”, and “People in my family looked out for each other”.

Demographics—The demographics questionnaire was administered at the 6 months postpartum visit and consisted of 28 items tapping into current living situation, race/ethnicity, work, relationship status, education level of mother and father (if known), and income. Race, income, age, marital status, and education variables were dichotomously coded (0=no, 1=yes) to create a continuous risk variable: non-White minority, single parent (i.e., unmarried or unpartnered), low education (i.e., less than a high school diploma or GED), low family income (i.e., <\$25,000), and young maternal age (i.e., <22 years old) statuses were summed (0 to 5) to create a cumulative risk index (Sameroff et al., 1993).

Religiousness and spirituality (R/S)—The Brief Multidimensional Measure of Religiousness and Spirituality (BMMRS; Fetzer Institute/National Institution on Aging Working Group, 1999) was administered at the 6 months postpartum visit and is a self-report questionnaire focusing on various dimensions of religion and spirituality that contribute to health outcomes. This instrument has been used in many studies worldwide, and has been validated with many different populations. Although we administered the entire scale, only the following subscales with acceptable internal consistency within our sample (Cronbach’s alpha above 0.7) were used in analysis. Daily Spiritual Experiences ($\alpha = 0.92$), which measures the individual’s experience of transcendence in daily life and experience of interaction with a higher power. This subscale consists of six items rated on a six-point response format, ranging from 1 (“many times a day”) to 6 (“never”). Meaning ($\alpha = 0.71$) measures a sense of meaning in life. This subscale is composed of two items with a four-point response format, which range from 1 (“strongly agree”) to 4 (“strongly disagree”). Forgiveness ($\alpha = 0.78$) measures the degree of forgiveness of self and others, and belief in the forgiveness of God. This subscale consists of three items rated on a four-point response format, ranging from 1 (“always”) to 4 (“never”). Private Religious Practices ($\alpha = 0.79$) measures the frequency of religious behaviors. This subscale is composed of five items, four

of which used an eight-point response format and one a five-point format. Scores range from 1 (“greater frequency”) to 5 or 8 (“never”), depending on the item. Religious and Spiritual Coping ($\alpha = 0.77$) measures additional religious/spiritual practices and beliefs specifically related to coping with life’s problems. This subscale consists of seven items with a four-point response format, ranging from 1 (“a great deal”) to 4 (“not at all”). Organizational Religiousness ($\alpha = 0.79$) measures the frequency of involvement in a formal public religious institution. This subscale consists of two items with a six-point response format, ranging from 1 (“more than once a week”) to 6 (“never”).

Depression symptoms—The Postpartum Depression Screening Scale (PDSS; Beck & Gable, 2002) is a self-report, 35-item scale, and was administered at the 12 and 15 months postpartum visits. Items are rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and the scale yields total scores ranging from 35–175, with a cutoff score greater than 80 suggesting major depressive disorder (total symptom count yielded Cronbach’s $\alpha = 0.953$ at 12 months and $\alpha = 0.963$ at 15 months).

Maternal quality of life—The Maternal Quality of Life (QOLI; Frisch, Cornell, Villanueva, & Retzlaff, 1992) is a modified, 9-item version of the Quality of Life Index, and was administered at the 12 and 15 months postpartum visits. Participants self-report their levels of satisfaction with various aspects of their life, including health, work and living arrangements, leisure time activities, romantic and extended familial relationships, neighborhood, and community. Each item was rated on a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied), and these responses were summed to create a continuous quality of life total score. Reliability estimates at 12 and 15 months postpartum demonstrated high reliability ($\alpha = 0.802$ and $\alpha = 0.825$, respectively).

Data Analyses

Analyses were performed using SPSS version 24. Depression and total demographic risk were positively skewed. Given that these numbers are consistent with what would be expected, the numbers were not transformed. The current project examined associations between cumulative demographic risk, childhood trauma, religiousness/spirituality, and postpartum depression symptoms and quality of life. Bivariate Pearson correlation tests as well as linear regressions were conducted to examine relationships between the cumulative demographic risk, childhood trauma, the six BMMRS dimensions with acceptable internal consistency, and depression symptoms and quality of life ratings. Primary variable means, standard deviations and correlations are listed in Table 2.

Results

Associations Between BMMRS Subscales and Postpartum Depression

Linear Regression models tested for associations between total CTQ symptoms, demographic risk (cumulative risk index: non-White minority, single parent, low education, low family income and young maternal age), and the six BMMRS subscales (daily spiritual experiences, forgiveness, private religious practices, organizational religiousness, religious and spiritual coping, and meaning), with depression severity at 12 and 15 months

postpartum (Table 3). At 12 months, forgiveness and total CTQ symptoms were associated with symptoms of depression; specifically, individuals with higher total CTQ scores had more symptoms of depression, and those with higher levels of self-reported forgiveness had lower symptoms of depression. Analyses examining these associations at 15 months yielded similar results (Table 3).

Associations Between BMMRS Subscales and Postpartum Quality of Life

Regression models tested for associations between total CTQ symptoms, demographic risk, and the six BMMRS subscales (daily spiritual experiences, forgiveness, private religious practices, organizational religiousness, religious and spiritual coping, and meaning), with quality of life ratings at 12 and 15 month postpartum (Table 3). At 12 months, cumulative demographic risk, total CTQ score, forgiveness, and organizational religiousness were associated with quality of life; specifically, individuals with higher CTQ score, higher cumulative demographic risk, and more organizational religiousness had lower quality of life scores, whereas those with more forgiveness had higher quality of life scores. Results examining these associations at 15 months yielded slightly different results (Table 3). Total demographic risk, total CTQ score, and forgiveness were associated with quality of life scores; specifically, those with more cumulative demographic risk and higher CTQ score had lower quality of life, and those with more forgiveness reported higher quality of life. Organizational religiousness was an insignificant predictor in this model, though the direction of the relationship stayed the same.

Forgiveness Post Hoc Analysis

Due to the significant result, we gave unique attention to the forgiveness subscale, consisting of three questions: “Because of my religious or spiritual beliefs, I have forgiven myself for things that I have done wrong”, “I have forgiven those who hurt me”, and “I know that God forgives me”. Preliminary bivariate correlations demonstrated very consistent and statistically significant relationships between the forgiveness subscale with the demographic risk and childhood trauma predictors and maternal outcomes; therefore, we believed this relationship warranted further exploration.

Depression and forgiveness—Three separate regression models examined the relationships between demographic risk, CTQ scores, and the three aspects of forgiveness as rated by the three scale items (self-forgiveness, forgiveness for others, and forgiveness by God) with depression at 12 and 15 months postpartum.

The first regression revealed significant associations between total CTQ scores and self-forgiveness; specifically, those with higher CTQ scores reported more depression symptoms, and those with higher levels of self-forgiveness reported less symptoms (Table 3). The second and third regression models examining the relationship between demographic risk, CTQ scores, and forgiveness for others or forgiveness by God with depression at 12 and 15 months postpartum, showed that only CTQ scores were a significant positive predictor (Table 4).

Quality of life and forgiveness—Similarly, three separate regression models examined the relationships between quality of life at 12 and 15 months postpartum with: demographic risk; CTQ scores; and self-forgiveness, forgiveness for others and forgiveness by God.

When examining the relationships between demographic risk, CTQ scores, and self-forgiveness or forgiveness by others and quality of life outcomes, all predictor variables demonstrated significance at 12 and 15 months. Specifically, those with more cumulative demographic risk and higher CTQ scores reported worse quality of life, and those with more self-forgiveness or more forgiveness for others demonstrated higher quality of life (Table 4).

In contrast, the regression model examining the predictive significance of forgiveness by God did not yield a significant result at 12 and 15 months postpartum for forgiveness by God. At 12 months, only total CTQ score were significant negative predictors of quality of life, and at 15 months postpartum both CTQ score and cumulative demographic risk significantly predicted worse quality of life (Table 4).

Discussion

This study aimed to shed light on specific domains of religiosity and spirituality (R/S) that may be resiliency factors for positive postpartum adjustment defined as low depression and high quality of life in mothers oversampled for childhood abuse histories. We tested several domains of R/S ranging from more organized and structured aspects such as organizational religiousness to more personal aspects such as meaning and forgiveness. We found that, in accordance with our hypothesis, for our sample of postpartum women with childhood abuse histories the personal aspects of self-forgiveness and forgiveness for others were most relevant as resiliency factors predicting better postpartum mental health and quality of life even when controlling for other risk (trauma and demographics). Surprisingly, contrary to our research hypothesis, no other R/S domain had consistent associations with postpartum mental health or quality of life, with the exception of a significant negative association for organizational religiousness with quality of life at 12 months postpartum.

Our main finding, aligning with our hypothesis, that specifically forgiveness was associated with better adaptation (lower depression and more quality of life) across the postpartum period, is consistent with a number of prior studies outside of peripartum showing that forgiveness is associated with lower levels of depression and overall better mental health (for a review, see Toussaint & Webb, 2005). With regards to the postpartum period, our study supports a recent finding showing that trait forgiveness, which is the dispositional motivation towards forgiveness, is inversely associated with postpartum depression (Ripley et al., 2018). It could be speculated that the ability to forgive is an important virtue associated with mental wellbeing, and protects even in the face of demographic risk and adverse childhood experiences.

The affirmative role played by forgiveness is in line with prior evidence showing that forgiveness in general may buffer negative psychological effects of trauma (Ochu, Davis, Magyar-Russell, O'Grady, & Aten, 2018). For example, a study with military veterans reported that when controlling for demographic risk factors, combat exposure, and PTSD

symptom severity, forgiveness fully mediated the link between overall spirituality and quality of life (Currier, Drescher, Holland, Lisman, & Foy, 2016). The practice of forgiveness may be a means by which individuals resist harmful negative emotions that can result from stress exposure or trauma history (Toussaint, Williams, Musick, & Everson, 2001), especially man-made trauma (Worthington & Sandage, 2016). It seems that forgiveness may help an individual to let go of negative emotions and thoughts associated with emotional distress (Hirsch, Webb, & Jeglic, 2011) and that forgiveness could be considered a unique coping strategy that can be helpful in either religious or non-religious contexts (Johnstone, Yoon, Franklin, Schopp, & Hinkebein, 2009).

Although it appears that forgiveness in general may be an important virtue, it is not a homogenous construct but may rather be comprised of different elements that should be studied separately (Currier, Drescher, Holland, Lisman, & Foy, 2016), as was exemplified in our post-hoc analyses. In the current research, forgiveness for the self was associated with less symptoms of depression and a better quality of life while forgiveness of others was positively associated with quality of life only, and forgiveness from God was not associated with either. These differentiated findings are in line with prior studies showing inconsistent associations for different aspects of forgiveness. For example, a study in older adults reported that forgiveness for others yielded greater psychological wellbeing than forgiveness by God (Krause & Ellison, 2003). Others reported sex differences, such that among women, forgiveness for others, self-forgiveness, and forgiveness by God were all associated with decreased odds of developing major depression, but this was not true for men where only self-forgiveness protected against depression (Toussaint, Williams, Musick, & Everson-Rose, 2008a). Lastly, in another study, self-forgiveness and forgiveness for others inversely associated with suicidality, whereas forgiveness by God was unrelated (Hirsch, Webb, & Jeglic, 2011). This present study is unique as we explored differential associations of forgiveness domains with outcomes in postpartum women.

In our study, postpartum women had been oversampled for their childhood abuse histories; thus, for this group of women, self-forgiveness and forgiveness for others may have special salience as resiliency factor. Forgiveness for others involves forgiving another person for having done harm. Self-forgiveness involves release of negative affect and self-blame associated with past wrongdoings, mistakes, or regrets (Toussaint, Williams, Musick, & Everson-Rose, 2008b). In the context of having experienced childhood abuse, entering birth and postpartum period may trigger memories of the past trauma and associated feelings for oneself and toward others, including the perpetrator(s). In contrast, forgiveness by God refers to the belief or perception that one's transgressions are forgiven by the divine (Toussaint, Williams, Musick, & Everson-Rose, 2008b), which may be more associated with one's sins and less with one's trauma experiences and memories.

In particular, individuals may use self-forgiveness as a strategy to safeguard their overall well-being against the toxic effects of self-conscious thoughts and emotions, such as, guilt, shame, and regret (McConnell, 2015) which may be a useful mechanism for healing from trauma. Further, self-forgiveness is often inversely associated with shame (Rangganadhan & Todorov, 2010), an emotion we have found in prior work salient to postpartum adaptation among women with childhood histories of maltreatment (Menke, Morelen, Simon,

Rosenblum, & Muzik, 2018). During the postpartum period women often think about their emerging identity of becoming a parent. This results in them thinking about their own history of being parented, and individuals with histories of childhood maltreatment have increased feelings of shame (Wright, Fopma-Loy, & Oberle, 2012).

To our surprise, and contrary to our hypotheses, most of the R/S sub-scales were not significantly associated with mental health or quality of life. In fact, organizational religiousness which is the frequency of involvement in a formal public religious institution, even had a negative effect on quality of life at 12 months postpartum. This finding was in contrast to prior work in non-perinatal (e.g. AbdAleati, Mohd Zaharim, & Mydin, 2016; Koenig, 2009; Paloutzian & Park, 2013) and perinatal populations (Cheadle et al., 2015; Cheadle & Schetter, 2018; Clements, Fletcher, Childress, Montgomery, & Bailey, 2016; Mann, McKeown, Bacon, Vesselinov, & Bush, 2008). However, our result may reflect the special sample population of women exposed to childhood abuse. We can speculate that the possible negative effect of organizational religiousness on quality of life at 12 months postpartum maybe attributed to the fact that the involvement with religious organizations and institutions could sometimes be harmful. Some research suggests that stressors which raise a person's inner ambivalence or conflict with the values embodied by religious organizations, such as the value of family cohesiveness, may be hard to confront by some individuals, and thus for these individuals the involvement with religious organizations and communities, particularly in the case of trauma perpetrated by family members, may sometimes even elevate stress and negatively impact mental health (Strawbridge, Shema, Cohen, Roberts & Kaplan, 1998). This may have also been the case for women in our sample. We argue that our findings suggest to study specific R/S aspects in the context of specific populations and conditions instead of studying R/S as a general marker of "good or bad" coping. Such would be an over-simplified understanding of the role of R/S (Hall, Meador, & Koenig, 2008).

Previously, the connection between R/S and wellbeing has been studied either in other trauma populations or in non-trauma exposed perinatal samples. For example, in a study with female veterans, frequency of religious service attendance buffered the negative impact of sexual assault on mental health and depression (Chang, Skinner, & Boehmer, 2001). Similarly, in Latina women religious attendance was found to buffer risk when examining the impact of childhood physical and sexual abuse histories on lifetime prevalence of substance use disorders (Ai & Lee, 2018). However, the data on R/S and mental wellness are mixed. For example, a study in China showed no associations between religiosity and mental health (Shiah, Chang, Chiang, Lin, & Tam, 2015), and in another study of pregnant women religious coping was less important to mental health than locus of control (Puente, Morales, & Monge, 2015). When testing the role of religiosity more mechanistically, the results are also less convincing. For example, in a sample of high-risk women (with ongoing trauma and suicidality), religious wellbeing (defined as a sense of meaning, life purpose and relationship with God) did not mediate the association between childhood maltreatment and current PTSD symptoms (Zhang et al., 2015). The mixed results for R/S on mental health could be explained by variations in construct measurement as different studies use different R/S scales, possibly tapping into diverse aspects of R/S. Furthermore, different cultures and populations could put differential value and importance on R/S occluding the effect. Further

research is clearly needed to disentangle the associations between R/S and mental health in special populations.

Lastly, our results showing positive effects for forgiveness rather than for broader aspect of religiosity on postpartum depression and life quality, must also be seen from the perspective that religiosity in general and forgiveness have great overlap (Krause, 2018). In fact, religiosity may serve as a frame for the transmission of virtues like forgiveness. For example, greater religious involvement is also correlated with greater self-forgiveness (Davis, Worthington, Hook, & Hill, 2013; Krause, 2015). Overall, forgiveness is a major target in the teachings of all major world religions (Farhadian & Emmons, 2010).

Limitations

Our study is not without limitations. Despite the longitudinal design predicting postpartum mental health outcomes at 12 and 15 months postpartum from 6 month R/S, the study cannot establish causality. Women may have been mentally unhealthy already prior to the postpartum period, which may have contributed to postpartum symptoms. Moreover, preexisting mental illness may have jeopardized R/S as individuals who are psychologically unhealthy may be in a worse position to forgive (Tucker, Bitman, Wade, & Cornish, 2015). Only longitudinal designs following mental health and R/S over time could address such causal links. Furthermore, the study population was very narrowly defined—oversampled for childhood abuse in general in the postpartum period. While this may be limiting generalizability, we believe this is actually a strength and adds to the literature as it allowed us to make inferences about this understudied population. Future research could be conducted as to the association of R/S and depression and quality of life in the context of specific traumas. Also, the subsample with completed R/S data was predominantly Caucasian (70%), and thus the results may not be representative of African American women's spirituality or other racial and ethnic minorities. Further, although forgiveness is a virtue addressed in the teachings of all major world religions (Farhadian & Emmons, 2010), the study population was predominantly Christian, and the results may be mainly generalizable for populations with Christian denomination. Another limitation concerns the use of self-report measures and the problem of common method bias. We believe that the constructs measured in this study have a demonstrated acceptable construct validity with no overlap between measures, therefore addressing this possible bias (Conway & Lance, 2010). A final limitation concerns the forgiveness measure used for this study. We used a forgiveness subscale of a well-researched R/S measure, and not a designated measure for forgiveness. Future research should use more fine-tuned forgiveness measures.

Acknowledgments

This study was funded by the National Institute of Mental Health (grant number MH080147).

References

- AbdAleati NS (2016). Religiousness and Mental Health: Systematic Review Study. *Journal of Religious Health*, 55(6), 1929–1937. doi:10.1007/s10943-014-9896-1

- Ai AL, & Lee J (2018). Childhood Abuse, Religious Involvement, and Lifetime Substance Use Disorders among Latinas Nationwide. *Substance Use & Misuse*, 53(13), 2099–2111. doi:10.1080/10826084.2018.1455701 [PubMed: 29624121]
- Beck CT, & Gable RK (2002). Postpartum depression screening scale (PDSS). Los Angeles: Western Psychological Services.
- Bernstein DP, & Fink L (1998). Childhood trauma questionnaire: A retrospective self-report: Manual. Harcourt Brace & Company.
- Brewer-Smyth K, & Koenig HG (2014). Could spirituality and religion promote stress resilience in survivors of childhood trauma?. *Issues in mental health nursing*, 35(4), 251–256. [PubMed: 24702209]
- Chang B, Skinner KM, & Boehmer U (2001). Religion and Mental Health among Women Veterans with Sexual Assault Experience. *The International Journal of Psychiatry in Medicine*, 31(1), 77–95. doi:10.2190/0nqa-yaj9-w0am-yb3p [PubMed: 11529393]
- Cheadle AC, & Dunkel Schetter C (2018). Mastery Self-Esteem, and Optimism Mediate the Link Between Religiousness and Spirituality and Postpartum Depression. *Journal of Behavioral Medicine*, 41(5), 711–721. doi:10.1007/s10865-018-9941-8 [PubMed: 29855845]
- Cheadle AC, Dunkel Schetter C, Gaines Lanzi R, Reed Vance M, Sahadeo LS, & Shalowitz MU (2015). Spiritual and Religious Resources in African American women: Protection from Depressive Symptoms After Childbirth. *Clinical Psychological Science*, 3(2), 283–291. doi:10.1177/2167702614531581 [PubMed: 25750838]
- Clements AD, Fletcher TR, Childress LD, Montgomery RA, & Bailey BA (2016). Social Support, Religious Commitment, and Depressive Symptoms in Pregnant and Postpartum Women. *Journal of Reproductive and Infant Psychology*, 34(3), 247–259. doi:10.1080/02646838.2016.1152626
- Conway JM, & Lance CE (2010). What Reviewers Should Expect from Authors Regarding Common Method Bias in Organizational Research. *Journal of Business and Psychology*, 25(3), 325–334. doi:10.1007/s10869-010-9181-6
- Currier JM, Drescher KD, Holland JM, Lisman R, & Foy DW (2016). Spirituality, Forgiveness, and Quality of Life: Testing a Mediation Model with Military Veterans with PTSD. *The International Journal for the Psychology of Religion*, 26(2), 167–179. doi:10.1080/10508619.2015.1019793
- Davis DE, Worthington EL Jr., Hook JN, & Hill PC (2013). Research on Religion/Spirituality and Forgiveness: A Meta-Analytic Review. *Psychology of Religion and Spirituality*, 5(4), 233–241. doi:10.1037/a0033637
- Dervic K, Grunebaum MF, Burke AK, Mann JJ, & Oquendo MA (2006). Protective Factors Against Suicidal Behavior in Depressed Adults Reporting Childhood Abuse. *The Journal of Nervous and Mental Disease*, 194(12), 971–974. doi:10.1097/01.nmd.0000243764.56192.9c [PubMed: 17164639]
- Farhadian C, & Emmons RA (2009). The psychology of forgiveness in religions In Kalayjian A & Paloutzian RF (Eds.), *Forgiveness and reconciliation: Psychological pathways to conflict transformation and peace building* (pp. 55–70). New York: Springer.
- Fetzer Institute/National Institute on Aging Working Group. (1999). Multidimensional measurement of religiousness/spirituality for use in health research. John E. Fetzer Institute.
- Frisch MB, Cornell J, Villanueva M, & Retzlaff PJ (1992). Clinical Validation of the Quality of Life Inventory. A Measure of Life Satisfaction for Use in Treatment Planning and Outcome Assessment. *Psychological Assessment*, 4(1), 92–101. doi:10.1037/1040-3590.4.1.92
- Hall DE, Meador KG, & Koenig HG (2008). Measuring Religiousness in Health Research: Review and Critique. *Journal of Religion and Health*, 47(2), 134–163. doi:10.1007/s10943-008-9165-2 [PubMed: 19105008]
- Hirsch JK, Webb JR, & Jeglic EL (2011). Forgiveness, Depression, and Suicidal Behavior among a Diverse Sample of College Students. *Journal of Clinical Psychology*, 67(9), 896–906. doi:10.1002/jclp.20812 [PubMed: 21633957]
- Irwin JL, Beeghly M, Rosenblum KL, & Muzik M (2016). Positive Predictors of Quality of Life for Postpartum Mothers with a History of Childhood Maltreatment. *Archives of Women's Mental Health*, 19(6), 1041–1050. doi:10.1007/s00737-016-0653-1

- Johnstone B, Yoon DP, Franklin KL, Schopp L, & Hinkebein J (2009). Re-Conceptualizing the Factor Structure of the Brief Multidimensional Measure of Religiousness/Spirituality. *Journal of Religion and Health*, 48(2), 146–163. doi:10.1007/s10943-008-9179-9 [PubMed: 19421866]
- Koenig HG (2009). Research on Religion, Spirituality, and Mental Health. *The Canadian Journal of Psychiatry*, 54(5), 283–291. [PubMed: 19497160]
- Krause N, & Ellison CG (2003). Forgiveness by God, Forgiveness of Others, and Psychological Well-Being in Late Life. *Journal for the Scientific Study of Religion*, 42(1), 77–93. doi:10.1111/1468-5906.00162 [PubMed: 21373377]
- Krause N (2015). Assessing the Relationships Among Race, Religion, Humility, and Self-Forgiveness: A Longitudinal Investigation. *Advances in Life Course Research*, 24, 66–74. doi:10.1016/j.alcr.2015.02.003 [PubMed: 26047990]
- Krause N (2018). Assessing the Relationships among Religion, Humility, Forgiveness, and Self-Rated Health. *Research in Human Development*, 15(1), 33–49. doi:10.1080/15427609.2017.1411720
- Mann JR, Mckeown RE, Bacon J, Vesselinov R, & Bush F (2008). Do Antenatal Religious and Spiritual Factors Impact the Risk of Postpartum Depressive Symptoms? *Journal of Women's Health*, 17(5), 745–755. doi:10.1089/jwh.2007.0627
- Mann JR, Mannan J, Quiñones LA, Palmer AA, & Torres M (2010). Religion, Spirituality, Social Support, and Perceived Stress in Pregnant and Postpartum Hispanic Women. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 39(6), 645–657. doi:10.1111/j.1552-6909.2010.01188.x
- Martinez-Torteya C, Katsonga-Phiri T, Rosenblum KL, Hamilton L, & Muzik M (2018). Postpartum depression and resilience predict parenting sense of competence in women with childhood maltreatment history. *Archives of Women's Mental Health*, 21(6), 777–784. doi:10.1007/s00737-018-0865-7
- Matthey S (2016). Anxiety and Stress During Pregnancy and the Postpartum Period (Wenzel A, Ed.). *The Oxford Handbook of Perinatal Psychology* (pp 132–149). Oxford University Press. doi:10.1093/oxfordhb/9780199778072.013.25
- McConnell JM (2015). A Conceptual-Theoretical-Empirical Framework for Self-Forgiveness: Implications for Research and Practice. *Basic and Applied Social Psychology*, 37(3), 143–164. doi:10.1080/01973533.2015.1016160
- Menke RA, Morelen D, Simon VA, Rosenblum KL, & Muzik M (2018). Longitudinal Relations Between Childhood Maltreatment, Maltreatment-Specific Shame, and Postpartum Psychopathology. *Child Maltreat*. 23(1), 44–53. doi: 10.1177/1077559517720070. [PubMed: 28705086]
- Miller WR, & Thoresen CE (2003). Spirituality, Religion, and Health: An Emerging Research Field. *American Psychologist*, 58(1), 24–35. doi:10.1037/0003-066x.58.1.24
- Mogos MF, August EM, Salinas-Miranda AA, Sultan DH, & Salihu HM (2013). A Systematic Review of Quality of Life Measures in Pregnant and Postpartum Mothers. *Applied Research in Quality of Life*, 8(2), 219–250. doi:10.1007/s11482-012-9188-4 [PubMed: 23734167]
- Morelen D, Rosenblum KL, & Muzik M (2018). Childhood Maltreatment and Motherhood: Implications for Maternal Well-Being and Mothering In Rosenblum KL & Muzik M (Eds.), *Motherhood in the Face of Trauma (Integrating Psychiatry and Primary Care*, pp. 23–37). Cham, Switzerland: Springer International Publishing. doi:10.1007/978-3-319-65724-0
- Morgan OJ (2009). Thoughts on the Interaction of Trauma, Addiction, and Spirituality. *Journal of Addictions & Offender Counseling*, 30(1), 5–15. doi:10.1002/j.2161-1874.2009.tb00052.x
- Mosqueiro BP, Da Rocha NS, & De Almeida Fleck MP (2015). Intrinsic Religiosity, Resilience, Quality of Life, and Suicide Risk in Depressed Inpatients. *Journal of Affective Disorders*, 179, 128–133. doi:10.1016/j.jad.2015.03.022 [PubMed: 25863908]
- Ochu AC, Davis EB, Magyar-Russell G, Ogrady KA, & Aten JD (2018). Religious Coping, Dispositional Forgiveness, and Posttraumatic Outcomes in Adult Survivors of the Liberian Civil War. *Spirituality in Clinical Practice*, 5(2), 104–119. doi:10.1037/scp0000163
- O'hara MW, & McCabe JE (2013). Postpartum Depression: Current Status and Future Directions. *Annual Review of Clinical Psychology*, 9(1), 379–407. doi:10.1146/annurev-clinpsy-050212-185612

- Oman D, & Lukoff D (2018). Mental Health, Religion, and Spirituality In Oman D (Ed.), *Why Religion and Spirituality Matter for Public Health* (Vol. 2, Religion, Spirituality, and Health: A Social Scientific Approach, pp. 225–243). Cham, Switzerland: Springer.
doi:10.1007/978-3-319-73966-3_13
- Paloutzian RF, & Park CL (Eds.). (2013). *Handbook of the Psychology of Religion and Spirituality* (2nd ed.). New York, NY: Guilford Press.
- Puente CP, Morales DM, & Monge FJ (2015). Religious Coping and Locus of Control in Normal Pregnancy: Moderating Effects Between Pregnancy Worries and Mental Health. *Journal of Religion and Health*, 54(5), 1598–1611. doi:10.1007/s10943-014-9881-8 [PubMed: 24833162]
- Ranganathan AR, & Todorov N (2010). Personality and Self-Forgiveness: The Roles of Shame, Guilt, Empathy and Conciliatory Behavior. *Journal of Social and Clinical Psychology*, 29(1), 1–22. doi:10.1521/jscp.2010.29.1.1
- Ripley JS, Worthington EL, Garthe RC, Davis DE, Hook JN, Reid CA, ... Akpalu B (2018). Trait Forgiveness and Dyadic Adjustment Predict Postnatal Depression. *Journal of Child and Family Studies*, 27(7), 2185–2192. doi:10.1007/s10826-018-1053-0
- Sameroff AJ, Seifer R, Baldwin A, & Baldwin C (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Child development*, 64(1), 80–97. [PubMed: 8436039]
- Shiah Y, Chang F, Chiang S, Lin I, & Tam WC (2015). Religion and Health: Anxiety, Religiosity, Meaning of Life and Mental Health. *Journal of Religion and Health*, 54(1), 35–45. doi:10.1007/s10943-013-9781-3 [PubMed: 24132457]
- Smith TB, McCullough ME, & Poll J (2003). Religiousness and Depression: Evidence for a Main Effect and the Moderating Influence of Stressful Life Events. *Psychological Bulletin*, 129(4), 614–636. doi:10.1037/0033-2909.129.4.614 [PubMed: 12848223]
- Southwick SM, Litz BT, Charney D, & Friedman MJ (2011). Religious and spirituality factors in resilience In Foy DW, Drescher KD, & Watson PJ (Eds.), *Resilience and mental health: Challenges across the lifespan*. (pp. 90–102). New York, NY: Cambridge University Press.
- Strawbridge WJ, Shema SJ, Cohen RD, Roberts RE, & Kaplan GA (1998). Religiosity Buffers Effects of Some Stressors on Depression but Exacerbates Others. *The Journals of Gerontology*, 53(3), series b: psychological sciences and social sciences, S118–S126. doi:10.1093/geronb/53b.3.s118
- Toussaint LL, Williams DR, Musick MA, & Everson SA (2001). Forgiveness and Health: Age Differences in a US Probability Sample. *Journal of Adult Development*, 8(4), 249–257. doi:10.1023/A:1011394629736
- Toussaint L, & Webb JR (2005). Theoretical and empirical connections between forgiveness, mental health, and well-being In Worthington EL Jr. (Ed.), *Handbook of forgiveness* (pp. 349–362). New York, NY: Routledge.
- Toussaint LL, Williams DR, Musick MA, & Everson-Rose SA (2008a). The Association of Forgiveness and 12-Month Prevalence of Major Depressive Episode: Gender Differences in a Probability Sample of U.S. Adults. *Mental Health, Religion & Culture*, 11(5), 485–500. doi:10.1080/13674670701564989
- Toussaint LL, Williams DR, Musick MA, & Everson-Rose SA (2008b). Why Forgiveness May Protect Against Depression: Hopelessness as an Explanatory Mechanism. *Personality and Mental Health*, 2(2), 89–103. doi:10.1002/pmh.35
- Tucker JR, Bitman RL, Wade NG, & Cornish MA (2015). Defining Forgiveness: Historical Roots, Contemporary Research, and Key Considerations for Health Outcomes In Toussaint L, Worthington E, & Willimans DR (eds.) *Forgiveness and Health* (pp. 13–28). Dordrecht: Springer.
- Van Der Woude DA, Pijnenborg JM, & De Vries J (2015). Health status and quality of life in postpartum women: A systematic review of associated factors. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 185, 45–52. doi:10.1016/j.ejogrb.2014.11.041 [PubMed: 25522118]
- Walker DF, Reid HW, O'Neill T, & Brown L (2009). Changes in personal religion/spirituality during and after childhood abuse: A review and synthesis. *Psychological Trauma: Theory, Research, Practice, and Policy*, 1(2), 130.

- Weber SR, & Pargament KI (2014). The Role of Religion and Spirituality in Mental Health. *Current Opinion in Psychiatry*, 27(5), 358–363. doi:10.1097/ycp.0000000000000080 [PubMed: 25046080]
- Webster J, Nicholas C, Velacott C, Cridland N, & Fawcett L (2011). Quality of Life and Depression Following Childbirth: Impact of Social Support. *Midwifery*, 27(5), 745–749. doi:10.1016/j.midw.2010.05.014 [PubMed: 20880619]
- WHOQoL SRPB Group. (2006). A cross-cultural study of spirituality, religion, and personal beliefs as components of quality of life. *Social Science & Medicine*, 62(6), 1486–1497. doi:10.1016/j.socscimed.2005.08.001 [PubMed: 16168541]
- Worthington EL Jr., & Sandage SJ (2016). *Forgiveness and spirituality in psychotherapy: A relational approach*. Washington, DC: American Psychological Association.
- Wright MOD, Fopma-Loy J, & Oberle K (2012). In their own words: The experience of mothering as a survivor of childhood sexual abuse. *Development and psychopathology*, 24(2), 537–552. [PubMed: 22559129]
- Zhang H, Pittman DM, Lamis DA, Fischer NL, Schwenke TJ, Carr ER, ... Kaslow NJ (2015). Childhood Maltreatment and PTSD: Spiritual Well-Being and Intimate Partner Violence as Mediators. *Journal of Aggression, Maltreatment & Trauma*, 24(5), 501–519. doi:10.1080/10926771.2015.1029182

Table 1.

Descriptive Characteristics

		Total Sample (n=108)	
		<i>n</i>	Percent
Age	> 22 years old	98	90.7
	< 22 years old *	10	9.3
Partnered	Partnered	87	80.6
	Not Partnered *	21	19.4
Racial	Caucasian	73	68.9
	Minority *	33	31.1
Education	Less than High School *	4	3.7
	High School or GED	11	10.3
	Some College, Associate's Degree, Vocational Degree, or Technical Degree	31	29
	Bachelor's Degree	32	29.9
	Graduate Degree	29	27.1
Income	Less than \$25,000 *	32	30.1
	\$25,000–\$49,999	23	21.8
	\$50,000–\$74,999	11	10.3
	\$75,000–\$99,999	16	15.1
	\$100,000 or more	24	22.6
Total Demographic Risk	0	55	50.9
	1	21	19.4
	2	16	14.8
	3+	16	14.9
Religious Preference	Christian	75	72.1
	Non-Religious	20	19.2
	Religious but non-Christian	9	8.7

Note: n's may not total 108 due to missing information or the ability to select multiple categories in the case of religious preference.

* Risk variable.

Table 2.

Descriptive Statistics and Correlations Between Main Study Variables.

	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16
Mean (SD)															
1. Demographic Risk (n=108)	1														
2. CTQ Total Score (n=108)	0.092	1													
3. Daily Spiritual Experiences (n=108)	0.359**	-0.108	1												
4. Forgiveness (n=107)	0.287**	-0.240*	0.745**	1											
5. Private Religious Practices (n=108)	0.220*	0.066	0.774**	0.533**	1										
6. Organizational Religiousness (n=105)	0.157	0.009	0.522**	0.423**	0.672**	1									
7. Religious and Spiritual Coping (n=108)	0.238*	-0.116	0.758**	0.614**	0.657**	0.552**	1								
8. Meaning (n=105)	0.091	0.004	0.753**	0.567**	0.612**	0.548**	0.652**	1							
9. "Because of my religious or spiritual beliefs, I have forgiven myself for things that I have done wrong" (n=106)	0.208*	-0.262**	0.550**	0.816**	0.323**	0.180	0.429**	0.342**	1						
10. "Because of my religious or spiritual beliefs, I have forgiven those who hurt me" (n=107)	0.219*	-0.266**	0.549**	0.813**	0.453**	0.301**	0.450**	0.317**	0.644**	1					
11. "Because of my religious or spiritual beliefs, I know that God forgives me" (n=103)	0.228*	-0.092	0.698**	0.804**	0.521**	0.485**	0.541**	0.609**	0.486**	0.513**	1				
13. MDD Symptom Count -	0.115	0.328**	-0.001	-0.224*	0.049	0.066	-0.096	-0.004	-0.399**	-0.246*	-0.033	1			
	63.05 (21.15)														

	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16
Mean (SD)															
12 months postpartum (n=86)															
14. MDD Symptom Count - 15 months postpartum (n=94)	0.117	0.418**	-0.04	-0.242*	0.068	0.105	-0.144	-0.059	-0.310**	-0.217*	-0.113	0.709**	1		
15. QOL Score - 12 months postpartum (n=86)	-0.230*	-0.533**	0.134	0.331**	0.043	-0.063	0.179	0.043	0.376**	0.374**	-0.012	-0.52**	-0.502**	1	
16. QOL Score - 15 months postpartum (n=94)	-0.303**	-0.441**	0.111	0.294**	0.047	-0.017	0.193	0.111	0.301**	0.315**	0.053	-0.439**	-0.604**	0.723**	1

Note: The *n* are not consistent due to attrition from 6 to 15 months.

Table 3.
Linear Regressions Between Risk Factors, BMMRS Subscales, Depression, and Quality of Life Among Postpartum Women.

Depression	Total Demographic Risk	Total CTQ	Forgiveness	Daily Spiritual Experiences	Private Religious Practices	Organizational Religiousness	Religious and Spiritual Coping	Meaning	Total R ²	R ²	f	df
12 months	0.035 (0.547)	0.28* (0.312)	-0.402* (-3.389)	0.558 (1.37)	-0.13 (-0.334)	0.221 (1.569)	-0.215 (-0.995)	-0.121 (-1.53)	0.212	0.212	2.559*	8, 76
15 months	0.041 (0.75)	0.353** (0.446)	-0.337* (-3.755)	0.387 (1.136)	-0.001 (-0.003)	0.211 (1.771)	-0.086 (-0.478)	-0.181 (-2.845)	0.275	0.275	3.882**	8, 82
Quality of Life	Total Demographic Risk	Total CTQ	Forgiveness	Daily Spiritual Experiences	Private Religious Practices	Organizational Religiousness	Religious and Spiritual Coping	Meaning	Total R ²	R ²	f	df
12 months	-0.217* (-0.914)	-0.445** (-0.134)	0.399** (0.906)	-0.133 (0.088)	0.168 (0.117)	-0.282* (-0.538)	0.032 (0.04)	-0.012 (-0.041)	0.431	0.431	7.201**	8, 76
15 months	-0.331** (-1.425)	-0.335** (-0.099)	0.364* (0.847)	-0.174 (-0.12)	0.078 (0.056)	-0.153 (-0.3)	0.13 (0.168)	-0.005 (-0.017)	0.361	0.361	5.795**	8, 82

Note: The df are not consistent due to attrition from 6 to 15 months.

Table 4.

Linear Regressions between risk factors BMMRS forgiveness questions, Depression, and Quality of Life among Postpartum Women.

Depression	Total Demographic Risk	Total CTQ	Forgiven Myself	Total R ²	R ²	f	df
12 months	0.14 (2.14)	0.22* (0.24)	-0.36** (-8.25)	0.23	0.23	8.20**	3, 81
15 months	0.12 (2.17)	0.35** (0.46)	-0.23* (-6.18)	0.24	0.24	9.08**	3, 88
Depression	Total Demographic Risk	Total CTQ	Forgiven Others	Total R ²	R ²	f	df
12 months	0.11 (1.73)	0.25* (0.28)	-0.19 (-4.29)	0.14	0.14	4.52**	3, 82
15 months	0.11 (2.16)	0.37** (0.48)	-0.14 (-3.87)	0.2	0.2	7.35**	3, 89
Depression	Total Demographic Risk	Total CTQ	Forgiven by God	Total R ²	R ²	f	df
12 months	0.07 (1.07)	0.34** (0.38)	-0.02 (-0.40)	0.13	0.13	3.73*	3, 78
15 months	0.11 (1.99)	0.42** (0.54)	-0.096 (-2.45)	0.2	0.2	7.32**	3, 86
Quality of Life	Total Demographic Risk	Total CTQ	Forgiven Myself	Total R ²	R ²	f	df
12 months	-0.24** (-1.02)	-0.39** (-0.12)	0.31** (1.89)	0.38	0.38	16.39**	3, 81
15 months	-0.33** (-1.41)	-0.33** (-0.10)	0.26** (1.59)	0.32	0.32	14.07**	3, 88
Quality of Life	Total Demographic Risk	Total CTQ	Forgiven Others	Total R ²	R ²	f	df
12 months	-0.22* (-0.95)	-0.41** (-0.13)	0.29** (1.81)	0.38	0.38	16.525**	3, 82
15 months	-0.34** (-1.46)	-0.33** (-0.10)	0.29** (1.89)	0.34	0.34	15.265**	3, 89
Quality of Life	Total Demographic Risk	Total CTQ	Forgiven by God	Total R ²	R ²	f	df
12 months	-0.17 (-0.74)	-0.50** (-0.15)	-0.02 (-0.09)	0.31	0.31	11.47**	3, 78
15 months	-0.31** (-1.32)	-0.40** (-0.12)	0.08 (0.47)	0.27	0.27	10.83**	3, 86

Note.

* p<.05

** p<.01.

Standardized Betas are reported with Unstandardized Betas in parenthesis. Df are not consistent due to attrition, and missing data on each forgiveness question.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript