



# Religiosity/Spirituality and Mental Health Outcomes in Mothers of Children with Autism Spectrum Disorder: The Mediating Role of Positive Thinking

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## Abstract

This study examines associations between dimensions of religiosity/spirituality (R/S) and anxiety symptoms in mothers of children with autism spectrum disorder (ASD). Mothers' positive ways of thinking and romantic relationship satisfaction were examined as mediators of associations. The extent to which child ASD symptom severity and maternal broad autism phenotype (BAP) behaviors predicted interactions with religious community members was also examined. Seventy-three Christian mothers of a child with ASD completed online surveys. Higher levels of spirituality were associated with viewing their child with ASD as providing a positive contribution to the family. These positive views were, in turn, associated with less anxiety symptoms. Mothers of children with more severe ASD symptoms also reported greater negative interactions with members of their congregation.

**Keywords** Autism spectrum disorder · Mothers · Religion · Spirituality · Mental health

The challenges associated with parenting a child with autism spectrum disorder (ASD) may impact social relationships, including the quality of parents' romantic relationship (Brobst et al. 2008; Gau et al. 2012). Researchers have identified protective factors that may ameliorate the negative outcomes commonly reported by parents of children with ASD, including hope (Lloyd and Hastings 2009) and benefit finding (Slattery et al. 2017). The parent's view of how their child's diagnosis has impacted the family is another determinant of parent mental health outcomes. The purpose of the current study was to investigate whether religiosity and spirituality (R/S) was associated with parent mental health outcomes via their relation with a selection of the aforementioned protective factors.

## Parents of Children with Autism Spectrum Disorder

Parents of children with ASD frequently report higher levels of parenting stress and depressive symptoms compared to parents of typically developing children (Lai et al. 2015). These parents also reported higher levels of marital conflict compared to parents of children without disabilities and their self-reported and observed conflict was more severe (Hartley et al. 2017a, b). However, more positive marital relationships may buffer against parents' negative mental health outcomes. Hartley et al. (2018) found that days with more positive marital interactions were less stressful for parents of children with ASD.

Although the negative effects of raising a child with ASD have been well documented, there is an increasing interest in understanding resilience among parents of children with ASD (e.g., Halstead et al. 2018). Studies show that parents of children with ASD report positive experiences raising their child (Garcia-Lopez et al. 2016; Hastings et al. 2005). These positive experiences are, in turn, related to lower levels of parenting stress for mothers of children with ASD (Kayfitz et al. 2010).

The construct of benefit finding has recently received attention as a factor that may promote positive outcomes in

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mothers of children with ASD. Individuals high in benefit finding are able to find positive contributions after experiencing a negative life event (Helgeson et al. 2006). These individuals are also able to identify positive ways in which their lives have changed as a result of this event. Although the construct of benefit finding is related to positive reappraisal coping (for meta analysis see Helgeson et al. 2006), benefit finding is conceptualized as an outcome of experiencing a negative life event whereas coping is a process an individual engages in to cope with a negative event. Studies of parents of children with ASD suggest that benefit finding is associated with increased positive affect (Samios et al. 2009), higher levels of family cohesion (Ekas et al. 2016), and greater romantic relationship satisfaction (Ekas et al. 2015). An intervention study indicated that parents of children with ASD that wrote about the benefits of caregiving were less likely to have anxiety scores in the clinical range at the 3 month follow-up (Lovell et al. 2016).

### Religiosity, Spirituality, and Well-Being

According to a recent survey, 70.6% of adults in the USA identify as Christians (Pew Research Center 2014). Among Christians, 93% reported that religion is somewhat (25%) or very important (68%) in their lives. Individuals can participate in organized (e.g., attending church) or private (e.g., prayer) religious activities. In the USA, approximately 47% of adults attend religious services regularly and private religious practices are also important to Christians, with 68% reporting that they pray daily (Pew Research Center 2014). Spirituality is another dimension of R/S and refers to meaning and purpose derived from life experiences, which may or may not be religious in nature (Graham et al. 2001). According to the Pew Research Center (2014), the majority of Americans (59%) report feeling a sense of spiritual peace and well-being.

Research of the impact of R/S on individual well-being generally suggests that higher rates of religious involvement is associated with greater well-being (Cohen and Johnson 2017). Regular attendance at church provides the opportunity to feel a sense of belonging within a community. Individuals who reported receiving emotional support from their congregation were more satisfied with their health (Krause and Wulff 2005) and those who attended religious services at least once a week reported higher levels of life satisfaction compared to those who never attended (Lim 2015). Private religious practices, such as prayer, are also positively associated with well-being (Whittington and Scher 2010). The ways in which individuals think about their lives may also be influenced by R/S. For example, those who engaged in positive religious coping reported higher levels of optimism (Warren et al. 2015). Higher levels of positive psychological

growth after a challenging life event was shown among those who reported R/S to be important in their lives (Schultz et al. 2010). Dimensions of R/S are also related to more positive romantic relationships. For example, higher levels of attendance at religious services was associated with lower risk for divorce (Brown et al. 2008). Taken together, the existing body of research highlights the integral role of dimensions of R/S in promoting positive outcomes.

### Religiosity and Spirituality in Parents of Children with ASD

Researchers have begun to examine the direct association between dimensions of R/S and outcomes in parents of children with ASD. In a study of Irish parents of children with ASD, Coulthard and Fitzgerald (1999) showed that parents reported feeling support and comfort from their personal R/S beliefs and from engaging in private prayer and these were associated with better physical and mental health outcomes. Ekas et al. (2009) examined several dimensions of R/S among mothers of children with ASD. Controlling for other dimensions of R/S, spirituality emerged as a robust predictor of a variety of positive outcomes. Graybill and Esquivel (2012) examined components of spiritual wellness in mothers of children with ASD. Mothers who reported higher levels of meaning and purpose in life and inner resources (i.e., relying on one's inner strengths and being at peace with oneself) also reported fewer depressive symptoms. In a study of parents of children with ASD from 15 countries, those who underwent a spirituality intervention reported higher resilience scores after completing the intervention (Pandya 2018).

Although there is growing evidence for the positive role of R/S in the lives of parents of children with ASD, there is no research examining the mechanisms by which R/S is associated with mental health outcomes. In the general population, R/S is associated with positive ways of thinking (Warren et al. 2015) and impacts the quality of social relationships (e.g., Mahoney 2010). These factors may, in turn, promote better mental health outcomes (Keyes and Reitzes 2007; Haney and Rollock 2018). In other words, the effects of R/S on mental health outcomes may be mediated by an individual's ways of thinking and social relationships. Among parents of children with ASD, there is limited research examining these relationships. For example, positive religious coping was associated with stress-related growth (i.e., positive changes in social relationships and coping skills) in parents of children with ASD (Tarakeshwar and Pargament 2001). In a study of mothers of children with ASD, spirituality was positively associated with self-esteem and religious beliefs were associated with a more optimistic outlook (Ekas et al. 2009). In the same study, mothers

with higher levels of spirituality also reported less negative feelings about parenting their child with ASD (Ekas et al. 2009). To our knowledge, there are no studies examining associations between R/S and romantic relationship quality in parents of children with ASD. Given the elevated rates of marital discord in this population (e.g., Hartley et al. 2017a, b), these associations are important to examine.

## Religious Activities and Parents of Children with ASD

Among mothers of children with ASD, Ekas et al. (2009) found that higher levels of participation in religious activities was associated with lower overall psychological well-being. This study did not differentiate between organized or private activities. However, parents of children with ASD previously reported struggles related to involvement in organized religious activities. Coulthard and Fitzgerald (1999) noted that parents of children with ASD reported receiving less support from their organized religion as compared to their personal beliefs. Qualitative interviews with parents provided more detail, with parents reporting that the clergy was not understanding of their child's diagnosis (Coulthard and Fitzgerald 1999). In another qualitative study, parents indicated that their church was not supportive of their need for respite care (Tarakeshwar and Pargament 2001). To our knowledge, there is no research examining the quality of interactions that parents of children with ASD experience within organized religion.

Qualitative studies suggest that parents may feel unsupported because of their child's behavior. One mother reported that she took her child to Mass even though others told her to leave her child outside (Coulthard and Fitzgerald 1999). Some parents also reported being unable to attend church because their child was unable to keep quiet during services (Tarakeshwar and Pargament 2001). These reports are consistent with a larger body of literature demonstrating that children's ASD symptom severity negatively impacts the quality of mothers' social relationships (e.g., Gau et al. 2012). Thus, it may be possible that children's symptom severity disrupts social relationships in the context of religious settings.

The quality of religious interactions may also depend upon the characteristics of the parent. The broad autism phenotype (BAP) consists of subclinical ASD behaviors (Sasson et al. 2012; Sasson et al. 2013). Relevant to the current study, the BAP contains social difficulties such as a reduced interest in social interactions, difficulties adapting to change, and problems participating in conversations (Hurley et al. 2007). Mothers of children with ASD with elevated BAP social abnormalities reported less friend and family social support (Pruitt et al. 2018). Ingersoll and Hambrick

(2011) found that mothers of children with ASD with higher BAP behaviors were also more likely to report less received social support. Given that the BAP negatively impacts social relationships, it is possible that these effects may extend to interactions in a social setting, such as church.

## Research Questions and Hypotheses

The overarching goal of the current study was to better understand the role of R/S in the lives of mothers of children with ASD. To accomplish this goal, we examined the extent to which dimensions of R/S were related to mothers' positive ways of thinking and romantic relationship quality. Based on previous research, we expected private religious practices and spirituality to be positively associated with maternal outcomes, whereas organized religious practices were hypothesized to be associated with less positive ways of thinking and lower relationship quality. We also expected positive ways of thinking and relationship quality to mediate the associations between R/S and maternal mental health outcomes. A secondary aim of the current study was to explore predictors of the quality of social interactions within mothers' religious congregations. We hypothesized that increased child ASD symptom severity and higher maternal BAP symptoms would be associated with negative social interactions.

## Method

### Participants

Participants were recruited via word of mouth, social media, and e-mailed flyers sent through a network of local and nation-wide ASD service providers and resources. Inclusion criteria for the study included being an English-speaking mother of a child with ASD under the age of 18 and self-identifying as Christian in an initial screening. Although 91 mothers met the inclusion and expressed interest, 18 did not complete the survey. Therefore, 73 mothers ( $M = 40.25$  years,  $SD = 6.37$ ) met the criteria for inclusion in the final study sample. The participants' children ranged in age from 2 to 17 ( $M = 9.14$  years,  $SD = 3.97$ ). The majority of mothers participating in the study were non-Hispanic White, college-educated, and had annual household incomes greater than \$75,000 (see Table 1).

### Procedure

Mothers were e-mailed a link to an online survey using the Qualtrics survey platform. Participants provided informed consent with an electronic signature prior to beginning the

**Table 1** Sample demographics ( $N = 73$ )

	Mothers (%)
Annual household income	
Not reported	1.40
< \$40,000	15.10
\$40,000–\$99,999	44.40
> \$100,000	40.30
Education	
High school	2.70
Vocational education	4.10
Some college classes	31.50
College degree	43.80
Post college degree	17.80
Race/ethnicity	
White/caucasian	76.70
African american	2.70
Asian or pacific islander	1.40
Hispanic or latino	13.70
Multiracial	5.50
Child gender	
Male	89.00
Female	11.00
Marital status	
Married	95.90
Unmarried	4.10
Religious affiliation	
Catholic	26.00
Protestant	35.60
Other christian religion	38.40

Percentages may differ from 100 due to rounding or overlap in race/ethnicity

survey. Participants were compensated with a \$15 token they could redeem for a gift card at a variety of national retailers. The Institutional Review Board at Texas Christian University approved the study (IRB-14045-146).

## Measures

### Religiosity/Spirituality

Several scales from the Brief Multidimensional Measure of Religiousness/Spirituality from the Fetzer Institute (1999) were used to examine aspects of religious beliefs and practices, as well as spirituality.

The religious support scale was divided into the negative interaction and anticipated support subscales, which were used to measure perceptions of support. For the negative interaction subscale, participants responded to two questions, such as, “How often are the people in your congregation critical of you and the things you do?” on a 4-point

Likert-type scale (1 = never to 4 = very often). The  $\alpha_c$  was .55. The two questions for the anticipated support subscale are similar to the following: “If you were ill, how much would the people in your congregation be willing to help out?” Answers were given on a 4-point scale (1 = none to 4 = a great deal).  $\alpha_c = .92$ .

The 5-item private religious practices scale was used to measure frequency of participation in private religious activities. Several of the items are on an 8-point scale (1 = more than once a day to 8 = never) and one item is on a 5-point scale (1 = at all meals to 5 = never). All items are then reverse coded and summed for a total score. Greater total scores on this measure indicate that an individual engages in more private religious practices. An example of a question from the measure is “How often do you pray privately in places other than a church or synagogue?” The scale’s  $\alpha_c = .78$ .

The daily spiritual experiences scale included six questions to evaluate spirituality and closeness with God. A mean total score was calculated from the responses (1 = never to 6 = many times a day). For example, participants would state whether they agreed with the following statement: “I feel God’s presence.”  $\alpha_c = .89$  for this subscale.

The organizational religiousness scale measures the frequency of involvement in organized religious activities and consisted of two items: “How often do you go to religious services?” and “Besides religious services, how often do you take part in other activities at a place of worship?” The answers ranged from 1, “never”, to 6, “more than once a week” and were summed for a total score. A greater score corresponds to more organized religious activity participation. This scale had  $\alpha_c = .78$ .

### Positive Contributions of the Child with ASD

Four subscales (24 items) from the Positive Contributions Scale of the Kansas Inventory of Parental Perceptions (KIPP) were used to obtain a measure of the degree to which the parent feels the child with ASD positively impacted their life in various areas (Behr et al. 1992). The subscales were Pride and Cooperation, Happiness and Fulfillment, Strength and Family Closeness, and Understanding of Life’s Purpose. Parents’ responses were given on a 4-point Likert-type scale (1 = strongly disagree to 4 = strongly agree) and the mean of responses for all items constituted the total Positive Contributions Scale score ( $\alpha_c = .84$ ).

### Benefit Finding

A modified version of the Benefit Finding Scale was used to examine the ways in which parents felt the child’s ASD diagnosis contributed positively to the parent’s life (Carver and Antoni 2004). The measure was originally created for

breast cancer patients, but the instructions were altered in this case to ask about the child's diagnosis of ASD. This scale has been reliably used in previous research with mothers of children with ASD (Ekas et al. 2016). The 17-item scale provides a five-point Likert-type scale of agreement for each response, with 1 meaning "not at all" and 5 meaning "extremely." A higher score suggests the individual has greater levels of benefit finding. For the current study,  $\alpha_c = .88$ .

### Relationship Satisfaction

Mothers' satisfaction with their romantic relationships was assessed using the couples satisfaction index (CSI; Funk and Rogge 2007). This measure has 32 items, which ask about various aspects of the romantic relationship or marriage. The scale responses change several times throughout the measure, but are typically on a 6-point Likert-type scale, where 0 corresponds to less agreement (Not at all true) and 5 suggests greater agreement (Completely true). The sum of responses (after reverse coding some items) is indicative of overall relationship satisfaction.  $\alpha_c$  for the present sample was 0.98.

### ASD Symptom Severity

The Social Responsiveness Scale (SRS) was used as a measure of ASD symptoms exhibited by the child. The SRS is a widely used, reliable and valid measure (Constantino and Gruber 2005). The SRS total score was based on the sum of the mother's responses on the 65-item measure, with higher scores indicating more severe symptomatology. Responses were given on a 4-point Likert-type scale from 1 (not true) to 4 (almost always true) about behavior shown by the child in the past 6 months. The measure had a  $\alpha_c$  of .95.

### Broad Autism Phenotype

Participants completed the Broad Autism Phenotype Questionnaire (BAPQ) as a measure of sub-clinical traits similar to those found in individuals with ASD and often found in close relatives (Hurley et al. 2007). Mothers responded to the 36-item questionnaire on a 6-point Likert-type scale (1 = very rarely to 6 = very often). The BAPQ total score reflects a mean of all questions from its three subscales, each with 12 items: social abnormalities, pragmatic language difficulties, and rigid personality. A greater total score on the BAPQ indicates a greater level of autism-like traits.  $\alpha_c$  was .94.

### Depressive Symptoms

The level of an individual's depressive symptomatology was assessed using the Center for Epidemiological Studies

Depression Inventory (CES-D; Radloff 1977), which is a 20-item self-report measure. Participants were asked to respond to items based on their feelings from the past week using a 4-point Likert-type scale (0 = rarely to 3 = most of the time). The summed total of participants' responses after reverse-coding applicable items is the score on the measure and  $\alpha_c = .91$ .

### Anxiety Symptoms

The State Anxiety subscale of the State-Trait Anxiety Inventory for Adults (STAI), which consists of 20 items, was completed by participants to evaluate current anxiety symptoms (Spielberger et al. 1970). The answers to the items are given on a 4-point Likert-type scale (1 = not at all to 4 = very much so). Half of the items are positively worded and reverse scored prior to being summed for the total anxiety score.  $\alpha_c$  was .93.

## Results

### Covariate Analyses

All study variables were examined for normality and no significant deviations were found. Descriptive statistics for all study variables are presented in Table 2. Analyses were conducted to identify any demographic variables that were related to the outcome variables. Compared to married mothers, unmarried mothers reported elevated depressive symptoms,  $t(71) = 3.42, p = .001$ , and more negative religious interactions,  $t(69) = 2.58, p = .012$ . Black and Hispanic mothers reported greater positive contributions of their child's ASD,  $F(4, 68) = 4.10, p = .005$ . Mothers of girls reported more depressive symptoms,  $t(71) = -3.26$ ,

**Table 2** Descriptive statistics

Variable	Min–max	Mean	SD
1. Private religious practices	7.00–37.00	21.12	7.67
2. Organized religious practices	2.00–12.00	6.95	2.60
3. Spirituality	1.83–6.00	4.45	1.04
4. Religious support	2.00–8.00	5.33	2.00
5. Religious negative interactions	2.00–6.00	3.15	1.32
6. KIPP positive contributions	2.21–3.79	3.00	.34
7. Benefit finding	37.00–85.00	68.79	10.29
8. Relationship satisfaction	9.00–158.00	114.64	.34
9. Child ASD symptom severity	38.00–173.00	105.16	32.36
10. Maternal broad autism phenotype	1.19–4.63	2.70	.75
11. Anxiety symptoms	24.00–68.00	41.40	11.26
12. Depressive symptoms	1.00–48.00	17.42	10.85

$p = .002$ , and less relationship satisfaction,  $t(70) = 3.12$ ,  $p = .003$ . These covariates were included in models when appropriate.

### Associations Between Religiosity/Spirituality and Outcomes

A series of separate multiple regression analyses were conducted to determine the associations between dimensions of R/S (private religious practices, organized religious practices, and spirituality) and the outcome variables of interest (benefit finding, positive contributions of the child's ASD, and relationship satisfaction). After controlling for maternal race, spirituality was the only dimension of R/S significantly associated with mothers' positive perceptions of their child's ASD,  $B = .11$ ,  $p = .038$ . Spirituality was also significantly associated with maternal benefit finding,  $B = 5.68$ ,  $p < .001$  (see Table 3). Organized and private religious activities were not significantly associated with benefit finding. Relationship satisfaction was not significantly associated with R/S.

Based on the results of the multiple regression analyses, we conducted a series of multiple mediator analyses to test whether maternal benefit finding and positive perceptions of their child's ASD mediates the association between spirituality and maternal well-being. Two separate mediation models were tested using PROCESS Version 3.0 in SPSS (Hayes 2013), using depressive symptoms and anxiety symptoms as separate outcomes (see Fig. 1a for the hypothesized model). Ninety-five percent confidence intervals were estimated using 5000 bootstrap resamples. As shown in Fig. 1b and Table 4, mothers with higher spirituality also reported increased benefit finding ( $a_1 = 5.15$ ) and greater positive perceptions of their child's ASD ( $a_2 = .10$ ). In turn, mothers with more positive perceptions also reported lower levels of anxiety symptoms ( $b_1 = -8.94$ ). The 95% confidence interval of the indirect effect ( $a_2b_1 = -.90$ ) did not contain zero ( $-1.93, -.01$ ). The mediation model with depressive symptoms as an outcome was non-significant (see Table 5).

### Religious Support

Two separate multiple regressions were conducted with maternal BAP and child ASD symptom severity entered as predictors. Perceptions of support and negative interactions with congregation members served as the dependent variables. No significant associations were found for religious support (see Table 6). After controlling for marital status, child ASD symptom severity was significantly associated with negative interactions,  $B = .01$ ,  $p = .047$ , and maternal BAP was marginally associated,  $B = .38$ ,  $p = .052$ .

### Discussion

The role of R/S in the well-being of parents of children with ASD has received scant empirical attention; however, the available research suggests that R/S may promote better psychological functioning. The current study addressed gaps in the literature by examining the mechanisms responsible for the association between dimensions of R/S and mental health outcomes in mothers of children with ASD. Consistent with previous research (e.g., Ekas et al. 2009), spirituality emerged as a salient predictor of maternal outcomes, with mothers' positive perceptions of their child explaining the link between spirituality and anxiety symptoms. This study also explored factors that predict mothers' supportive and negative interactions with members of their congregation. The findings have implications for religious communities and the supports they can provide to families of children with ASD.

### Spirituality and Maternal Outcomes

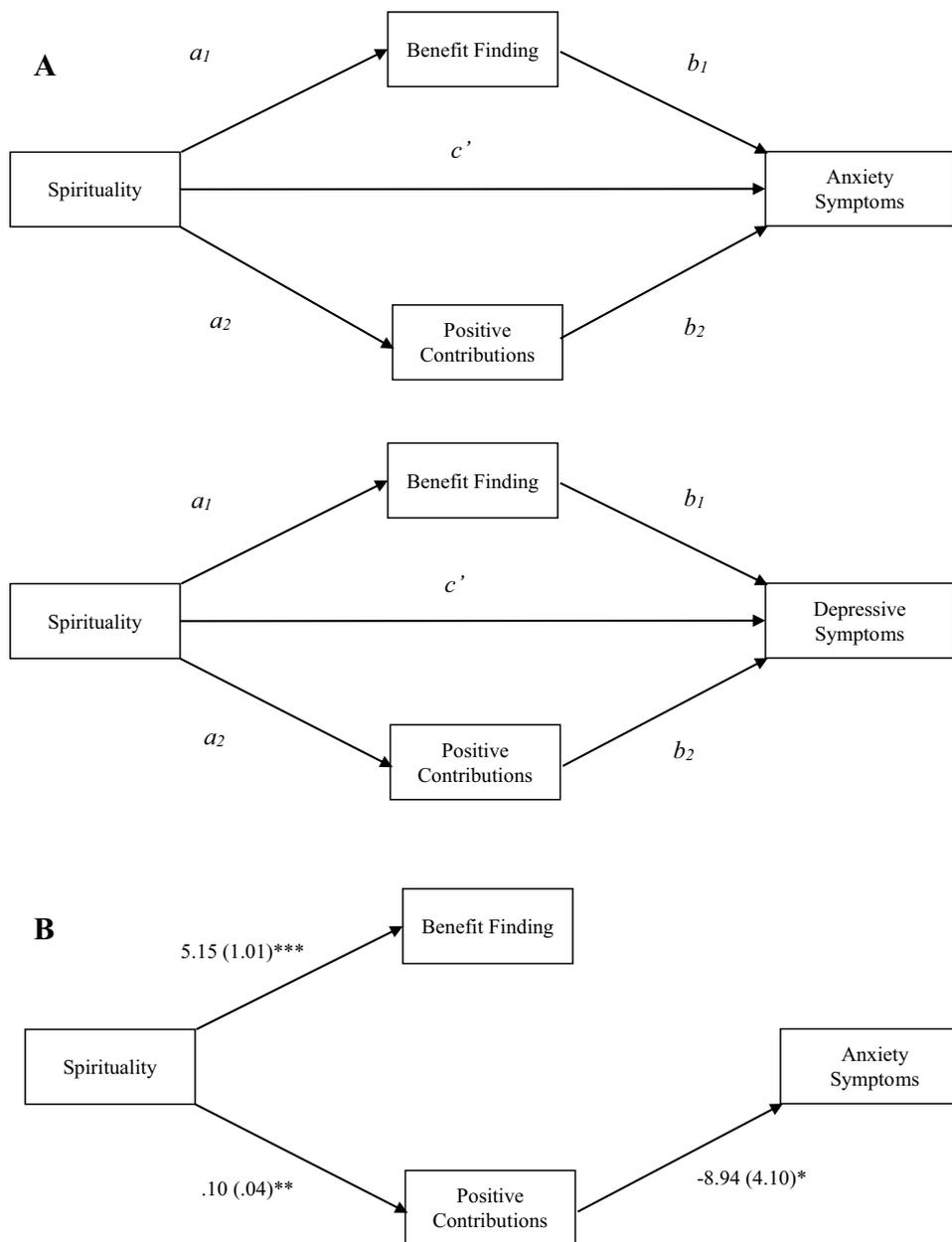
Mothers' spirituality, as opposed to engagement in religious activities, emerged as a significant predictor of levels of benefit finding and positive thinking about their child with ASD. This extends previous research with mothers of children with ASD that suggested spirituality, above and beyond other

**Table 3** Results of multiple regression models

Variable	KIPP positive contributions		Benefit finding		Relationship satisfaction	
	$R^2 = .10$		$R^2 = .28$		$R^2 = .28$	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Intercept	<b>2.5</b>	<b>.001</b>	<b>45.53</b>	<b>.001</b>	<b>119.45</b>	<b>.001</b>
Maternal race/ethnicity	.02	.42	–	–	– 4.55	.11
Child gender	–	–	–	–	– <b>34.31</b>	<b>.003</b>
Spirituality	<b>.11</b>	<b>.04</b>	<b>5.68</b>	<b>.001</b>	3.16	.49
Organized religious practices	.01	.62	.18	.73	1.63	.34
Private religious practices	– .004	.57	– .15	.43	.71	.27

Significant ( $p < .05$ ) predictors are in boldface

**Fig. 1 a** Hypothesized multiple mediator models. **b** Final model containing only significant paths. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



**Table 4** Results of the mediation model with anxiety symptoms as an outcome

	Mediators				Dependent variable	
	Benefit finding		Positive perceptions		Anxiety symptoms	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Independent variables						
Maternal race/ethnicity	-.35	.79	.02	.03	1.57	.94
Spirituality	5.15***	1.01	.10**	.04	.24	1.42
Mediators						
Benefit finding	-	-	-	-	-.18	.15
Positive perceptions	-	-	-	-	-8.94*	4.10

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 5** Results of the mediation model with depressive symptoms as an outcome

	Mediators				Dependent variable	
	Maternal benefit finding		Positive perceptions		Depressive symptoms	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Independent variables						
Maternal race/ethnicity	– .45	.81	.03	.03	– .45	.87
Child gender	– 1.74	3.43	– .01	.13	10.32**	3.64
Marital status	– 5.48	5.48	.17	.20	– 19.15**	5.92
Spirituality	4.92***	1.04	.11**	.04	.81	1.28
Mediators						
Benefit finding	–	–	–	–	– .19	.14
Positive perceptions	–	–	–	–	– 4.91	3.71

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 6** Results of regression models with religious support outcomes

Variable	Religious support		Negative religious interactions	
	$R^2 = .04$		$R^2 = .20$	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Intercept	<b>5.3</b>	<b>.001</b>	<b>2.55</b>	<b>.02</b>
Marital status	–	–	<b>– 1.48</b>	<b>.047</b>
ASD symptom severity	.01	.17	<b>.01</b>	<b>.047</b>
Maternal BAP	– .39	.22	.38	.05*

Significant ( $p < .05$ ) associations between variables are in boldface  
Marginally significant ( $p < .10$ ) associations between variables are indicated with \*

dimensions of R/S, was associated with various aspects of mothers' psychological well-being (Ekas et al. 2009). Individuals high in benefit finding may perceive challenges as opportunities for personal growth and to develop a sense of purpose, as a way to learn new coping skills, and as a way to foster social relationships (Carver and Antoni 2004). Spirituality may promote benefit finding via the emphasis on meaning gained from life experiences (Graham et al. 2001). Indeed, among patients with thyroid cancer, higher levels of benefit finding was associated with increased spiritual well-being (Costa and Pakenham 2012). The results of the current study extend these findings to a different population.

In the current study, mothers with higher levels of spirituality reported their child with ASD made more positive contributions to their lives. These positive contributions can include the child serving as a source of pride, bringing the family closer together, contributing to the mother's personal growth (e.g., becoming more patient and accepting), and providing happiness and fulfillment (Behr et al. 1992). The ability to perceive the child with ASD as providing a

positive contribution may be seen as a cognitive adaptation that assists the parent in coping with the challenges of the child's diagnosis (Behr et al. 1992). Similarly, spirituality may enhance the ability to perceive positive contributions of a child's ASD diagnosis via the focus on deriving meaning in life. The findings of the current study are consistent with research in the general population relating R/S with positive psychological growth (Schultz et al. 2010).

Although research in the general population suggests that R/S promotes better romantic relationship quality (e.g., Mahoney 2010), the current study did not find evidence for this among mothers of children with ASD. This may be due to the nature of the statistical analyses used in the current study. When examined separately, each of the dimensions of R/S was significantly related to romantic relationship satisfaction. However, after accounting for child gender, none of the dimensions of R/S was a significant predictor. Given that the quality of romantic relationships is impacted when raising a child with ASD (e.g., Hartley et al. 2017a, b), it is important for future research to continue to examine factors that can enhance relationship functioning. Further examination of R/S is warranted, given associations found in the general population.

The primary aim of the current study was to elucidate mechanisms responsible for the association between R/S and mental health outcomes. Benefit finding and positive contributions of the child with ASD were hypothesized to serve as mediators of the relationship between spirituality and maternal anxiety and depressive symptoms. Our results showed that higher levels of spirituality were associated with mothers' reporting more positive contributions of their child with ASD which were, in turn, associated with lower levels of anxiety symptoms. Previous research also indicated that mothers of children with ASD who reported more positive contributions reported less parenting stress (Kayfitz et al. 2010) and lower levels of distress (Weiss et al. 2015). The results presented here suggest that spirituality may engender

mothers to feel more positive within the context of their child's ASD diagnosis and thus reduce mental health problems often experienced by this population.

The findings reported above were specific to anxiety symptoms. Depression and anxiety often occur together, with 59% of individuals with major depressive disorder reporting a comorbid anxiety disorder (Kessler et al. 2007). However, the factors contributing to symptom levels may be different for anxiety and depression. For example, Samios et al. (2012) showed that benefit finding predicted levels of anxiety, but not levels of depressive symptoms in parents of children with ASD. Therefore, findings from the current study may suggest that reported positive contributions are more effective at reducing symptoms of anxiety. For example, feeling that your family is closer as a result of your child's ASD diagnosis may reduce feelings of confusion and worry. Similarly, experiencing personal growth may result in mothers feeling more calm, relaxed, and self-confident. Further research is needed to replicate these results and to examine whether other, similar, predictors also act in this differential fashion.

Contrary to hypotheses, benefit finding did not serve as a mediator of the relationship between spirituality and mental health outcomes. Previous research, using the same measurement instrument, suggests there are positive associations between benefit finding and outcomes such as family cohesion (Ekas et al. 2016) and relationship satisfaction (Ekas et al. 2015). However, there were no significant associations found between benefit finding and mental health outcomes (Ekas et al. 2016). It is possible that the positive thinking related to the child (i.e., positive contributions) was a better predictor of maternal anxiety symptoms since it specifically relates to the source of mothers' worries (i.e., their child) whereas benefit finding refers to their general outlook. Given that behaviors of children with ASD are a robust predictor of maternal mental health outcomes (e.g., Schutte et al. 2018), benefits related to the child may be more salient. Indeed, when asked to write about benefits of caregiving for a child with ASD, maternal anxiety scores were lower (Lovel et al. 2016). Thus, when both general benefit finding and positive contributions of the child are in the same model, benefit finding does not ameliorate distress above and beyond the child-specific benefits.

### Religious Interactions

There is a small body of research suggesting that parents of children with ASD experience negative interactions within religious settings (e.g., Tarakeshwar and Pargament 2001). We examined whether characteristics of the child or the parent was related to the quality of social relationships within their place of worship. Neither was related to the support that mothers anticipated receiving from their congregation.

However, mothers of children with more severe ASD symptoms reported more negative interactions with members of their congregation. These results are consistent with qualitative studies that suggest that interactions within a religious setting may be challenging for parents of children with ASD (e.g., Coulthard and Fitzgerald 1999). It is possible that children with more severe ASD symptoms are perceived by members of the congregation as being disruptive. Congregation members may also lack familiarity with ASD and the challenges that parents experience, especially with children who are more severely affected. Thus, mothers in this study may perceive their fellow congregation members as being too demanding and critical due to this lack of understanding.

In previous qualitative research (e.g., Tarakeshwar and Pargament 2001), mothers reported feeling unsupported within their congregation. The current study found no significant associations between child or maternal characteristics and mothers' perceived support from their congregation. It is possible that fellow worshippers are willing to provide support to mothers when needed, but the quality of those interactions may be negative. For example, a congregation member may help a mother when she is ill, but do so in a way that is perceived by the mother as being critical.

### Limitations and Future Directions

The current study contributes new knowledge regarding associations between R/S and well-being in mothers of children with ASD. However, there are several methodological limitations that warrant discussion. First, the sample size was relatively small given the complexity of the model tested. It is possible that, with a larger sample size, other dimensions of R/S would emerge as significant predictors. Second, the study sample was relatively homogenous (e.g., only mothers, middle class, White, and Christian). Future research would benefit from examining the role of R/S among ethnic minority parents of children with ASD. In the general population, Black adults report more positive emotions towards God, compared to Hispanic and White adults (Krause et al. 2018). Future research should include the perspectives of non-Christian parents of children with ASD. Although Christianity is the dominant religion in the USA (Pew Research Center 2014), the experiences of Jewish or Muslim parents are important and our results may not extend to these populations.

With respect to measurement tools, in the current study we did not differentiate between interactions with religious leaders and worshippers. Given that mothers in the current study are reporting negative interactions, it would be interesting to try to disentangle whether these interactions are with fellow congregants or with religious leaders. A recent study of university students and community members found relatively high knowledge of ASD and low levels of stigma

(Stronach et al. 2019); however, levels of knowledge among religious leaders is unknown. It may be that leaders with low knowledge of ASD are contributing to the negative interactions that mothers are reporting. A final limitation is the cross-sectional design of the current study. Although we found that positive contributions of the child served as a mediator of the relationship between spirituality and anxiety symptoms, it is possible that this positive way of thinking may promote higher levels of spirituality. Longitudinal research is needed to test possible bidirectional associations between study constructs.

In the current study, we tested a model wherein R/S was hypothesized to be directly associated with maternal psychosocial outcomes. However, it is possible that R/S may serve as a protective factor for mothers of children with ASD. Previous research shows that children's ASD symptom severity is a salient predictor of maternal mental health outcomes (Davis and Carter 2008). Given that R/S is associated with positive outcomes for mothers, it is possible that mothers with higher levels of spirituality may be less adversely affected by their child's symptoms. Future research is needed to test these possibilities.

## Implications

The current study examined a process-oriented model of the association between R/S and mental health outcomes among mothers of children with ASD. The results underscore the need for practitioners who work with parents of children with ASD to consider incorporating R/S into their existing programs. Given that spirituality emerged as the dimension most salient for maternal outcomes, it may be possible to incorporate spiritual practices with parents of various religious affiliations. Given the importance of religion in the United States and that mothers of more severely affected children reported more negative interactions within their congregation, it is particularly important to bring together the ASD community and the religious community. This may involve educating those within religious communities and providing tools for these communities to be more inclusive and supportive of parents of children with ASD.

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## Compliance with Ethical Standards

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

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Texas Christian University #IRB-14045-146) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Information consent was obtained from all individual participants included in the study.

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