

Spiritual Coping: A Gateway to Enhancing Family Communication During Cancer Treatment

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Published online: 27 August 2015

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Abstract The researchers examined the spiritual coping, family communication, and family functioning of 95 participants in 34 families by an online survey. Multilevel linear regression was used to test whether individuals' and families' higher endorsement of more use of spiritual coping strategies to deal with a member's cancer would be associated with higher scores on family communication and family functioning, and whether better communication would also be associated with higher family functioning scores. Results revealed that spiritual coping was positively associated with family communication, and family communication was positively associated with healthier family functioning. The researchers provide suggestions for further research.

Keywords Cancer · Family communication · Medical family therapy · Spiritual coping

Introduction

Cancer affects the entire family both acutely and chronically. How a family communicates and adjusts to the many challenges has long-lasting effects on everyone (Rolland 1994). The authors focused on families living with cancer to better understand individuals' and families' levels of spiritual coping predicts both family communication and family functioning. Thereby, the researchers assessed patient and close family members' perspectives of their family's spiritual coping, communication, and family functioning (operationalized as familial interpersonal flexibility and cohesion). This study provides new information because rather than focusing solely on individual's experiences, it takes into account

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family membership as spirituality is often highly influenced by one's family, and one's family is often a primary social resource during a health crisis, like cancer.

Background Literature

Spiritual Coping

To examine spirituality as a construct, most quantitative samples have been composed of persons who ranged from non-religious to the spiritually devoted (Krageloh et al. 2012) using a variety of research methods and samples. Although many religious practices utilize spiritual communities and emphasize family culture, most researchers have assessed spiritual coping using self-report instruments and analyses aimed at understanding only the individual's experience (e.g., Canada et al. 2008; Carver 1997; Hamilton et al. 2010; Holt et al. 2012; Idler et al. 2003; Pargament et al. 2000) and interviews (e.g., Sadati et al. 2014).

Examining the research of spirituality and illness, some researchers have examined spiritual coping in the context of acute illness or acute flare-ups of a chronic health concern (e.g., Ellis et al. 2013; Park and Dornelas 2012; Thune-Boyle et al. 2011). Others have focused on spiritual coping concurrent to living with a chronic illness (e.g., Rabinowitz et al. 2010; Salts et al. 1991; Skaff 1995) or the impending death of oneself or a loved one (Cowchock et al. 2011). Compared with other people with serious illnesses, cancer patients have reported the highest percentage of religious coping responses (Cigrang et al. 2003). Indeed, reporting a connection with a benevolent and loving God, religious involvement and spiritual practice have been associated with higher levels of hope (Borneman et al. 2002; Theis et al. 2003), comfort and strength (Oxman et al. 1995), an ability to find meaning (Howard et al. 2007), adjustment and learning to live with cancer (Ahmad et al. 2011; Urcuyo et al. 2005), and better mental health of patients and caregivers (Canada et al. 2008; Chang et al. 1998; Hamilton et al. 2010; Purnell et al. 2009). Spiritual coping has been shown to be more complex than prayer, meditation, and attending services (Krageloh et al. 2012; Yanez et al. 2009) and can be a meaning-enhancing journey toward existential wisdom (Sealy 2013). The cancer experience offers the opportunity to enter into a reflexive relationship with God and one's faith teachings, as well as providing a context in which to deepen family relationships, and a family's spiritual understandings and experiences (Sadati et al. 2014).

Although much of the literature focuses on the positive aspects of spiritual and religious coping, there is also an increased understanding of negative spiritual and religious coping that are characterized by an diminished view of oneself and the world related to the illness's onset and God's abandonment or punishment (Pargament et al. 1998; Thune-Boyle et al. 2013). Such negative spiritual coping has been associated with lower interpersonal functioning (Agarwal et al. 2010; Gall 2004; Sherman et al. 2009; Tarakeshwar et al. 2006; Thune-Boyle et al. 2013).

The context in which families discuss their spiritual coping, and with whom they discuss it, could both be helpful to understand. Home pastors tend to talk about family matters with patients more than hospital chaplains (e.g., Spilka et al. 1983); but with the increased popularity of hospice and palliative services, such distinctions may evaporate. Hence, both clergy and secular mental health professionals have a need to understand how spiritual coping could be a doorway through which to improve families' communication so

that both patients and their family members are provided with the best opportunities to successfully and holistically communicate and function as a family. Yet, few measures have been designed to ascertain the extent to which people use spiritual coping and support at the family level. One such self-report assessment, used in the current study, is the spiritual coping subscale of the Family Crisis Oriented Personal Evaluation Scales (F-COPES, McCubbin et al. 1981), which inquires about behaviors, expressions of beliefs, and utilization of others for religious support and has been used across many cultures (e.g., Agarwal et al. 2010).

Family Flexibility, Cohesion, and Communication

Professionals and researchers have defined family resiliency in many ways, focusing on a multitude of processes, skills, and strengths. Olson's Circumplex model (Olson 2011) is useful among many cultures due to its capacity to identify health or resiliency with three dimensions of family interpersonal process: flexibility, cohesion, and communication. Olson and colleagues developed a model (see diagram in Olson 2011) that allows families with differing amounts of flexibility, cohesion, and communication to be understood within their context, culture, and stage in the family lifecycle. Only those families stuck within an extreme quadrant that causes symptoms (e.g., poor communication alongside way too little or way too much cohesion and/or flexibility that prevents the family from functioning as a unit) would be seen as dysfunctional. The model understands health and resiliency from multiple family preferences and enables clinicians and pastors to check-in with family members as to their agreement on current and preferred amounts of communication, cohesion, and flexibility, thereby facilitating family-driven consultation and guidance. Within this model, even very high or fairly low amounts of cohesion and flexibility can be normative if cultural and family members' expectations agree, and their communication is clear. Hence, obtaining perspectives from both members of a couple and all relevant family members is preferred when using this model.

More frequent and honest communication about cancer has been associated with greater family social and emotional support (Gotcher 1993, 1995; Manne et al. 2004) and better patient psychosocial adjustment (Edwards and Clarke 2004; Gotcher 1992). Communication is the primary issue that families raise during cancer treatment (Hilton 1993). Specifically, preexisting relational communication issues (such as marital) often need to be addressed if families are going to successfully accommodate the cancer. Researchers have provided an in-depth understanding of patients' needs around communication (e.g., Northouse and Northouse 1987) including how people's needs change over the course of treatment (Patterson and Garwick 1994; Rolland 1994; Walsh and McGoldrick 2004). The emotional and communication needs of the patient's family are also important. Family members may decrease or guard their communication as a means to conceal worries and their sense of helplessness (Boss 2006; Northouse and Northouse 1987; Ow and Katz 1999; Walsh and Anderson 1987). Hilton (1993, 1994) found that patients and caregivers were most satisfied when their communication preferences matched, especially when both patients and their partners preferred direct communication about their fears and concerns. A preference for age-appropriate, clear communication is characteristic of both men and women during the cancer adaptation process in North and South American families (e.g., Biffie and Mamede 2010; Garlan et al. 2010–2011; Kennedy and Lloyd-Williams 2009). Similarly, Anderson and Martin (2003) indicated that learning how to openly communicate about cancer was a key to couple resiliency and the ability to share information with the rest of the family. Poorer communication has been related to family members' increased

anxiety (Edwards and Clarke 2004). Decades of research on patients and family members have supported the conclusion that families with more open and frequent communication throughout the treatment and post-treatment periods have: (a) the most flexibility, (b) the least trouble interchanging roles, (c) the ability to make the best use of external support systems, and (d) the least difficulty during post-death restabilization (e.g., Cohen et al. 1977; Harris et al. 2010). Thus, family communication is an important index of family functioning, and its study should provide promising leads for engagement with families with a member with a cancer diagnosis.

Study Rationale

Prior research has shown that individuals' and families' spiritual coping, healthy communication, and balanced family functioning are important components of families' resiliency during cancer treatment. However, this study is one of the first to use statistical analyses that take into account each family member's perceptions as well as the family's collective perceptions. The aims of this study were (a) to examine the extent to which spiritual coping predicts participants' family communication and family functioning (represented by balanced levels of flexibility and cohesion rather than extremes of either) and (b) to examine whether spiritual coping interacts with the patient's gender, ethnicity, or stage of cancer. We hypothesized spiritual coping (predictor variable) would be positively associated with family communication (dependent variable) and family functioning (dependent variable). In addition, we explored the roles of gender, ethnicity, and patient's cancer stage as both predictors and moderators of associations between spiritual coping and both outcomes. If individual spiritual coping varies by family, or if collective family experiences are significant predictors of individuals' perceptions of family communication and family balance, then spiritual leaders and other professionals who work with whole families have empirical support for their efforts.

Methods

Participants and Procedure

After the university medical center human subjects review committee approval, adult patients with cancer were approached at the end of a regularly scheduled appointment at a cancer treatment and research center at a large university medical center in the southwestern USA. Patients were enrolled in their language of choice: English or Spanish. Ninety-one patients agreed to think about participating and signed the informed consent, 41 began the online survey, and 36 completed it. Only the 34 patients with at least one family member who completed their respective surveys were included in the final sample. Altogether, there were 95 participants in 34 families.

Of the 34 patients, 17 were female and 17 were male; their ages ranged from 26 to 90 ($M = 61.03$, $SD = 13.63$; $Mode = 69$); 27 (79.4 %) identified as White and 7 (20.6 %) as Hispanic/Latino. Patients' educational attainment was diverse with half having some college or more. There were 15 types of cancer diagnoses; of these, five persons were in stage one, 10 in stage two, four in stage three, and 15 in stage four ($M = 2.85$, $SD = 1.2$). Thus, the average stage of the patient's cancer was moderately severe.

Sixty-one adult, non-patient family members participated in this study by completing the family member version of the online research survey with one to three non-patient members per family. Family members’ ages ranged from 18 to 85 ($M = 49$, $SD = 15.87$; Mode = 56). There were more women ($n = 40$) than men ($n = 21$). A third of family members were spouses/partners, a fifth were daughters, and the remaining 46 % represented a variety of family relationships. Thirty-four lived with the patient with 27 being primary caregivers and 19 backup caregivers. Nearly 80 % reported having daily contact with the patient. Family members were somewhat more educated than the patients: 74 % had some college or more.

Research Survey

Surveys were accessed through the primary researcher’s university-hosted research webpage, a portal from which all four surveys (patient-English, patient-Spanish, family member-English, and family member-Spanish) were administered through Qualtrics. The webpage could be completed from any internet-connected computer. The patient and each of the family members used the same identity number so that surveys could be linked for family-level data analysis. The survey included demographic information (such as each person’s gender, the patients’ ethnicity, stage of cancer at time of participation, and whether the family member served as a caregiver) and questionnaire items. The remaining items were as follows: (a) the Family Communication Scale (Olson and Barnes 1996); (b) the Family Adaptation and Cohesion Scale IV (FACES-IV, Olson 2011); and (c) the Spiritual Coping subscale from the Family Crisis Oriented Personal Evaluation Scale (F-COPES) by McCubbin et al. (1981).

Outcome Variables

The first outcome was measured by the 10-item Family Communication Scale (Olson and Barnes 1996) that focused on listening skills, speaking skills, self-disclosure, clarity, tracking, regard, and respect (Olson and Gorall 2003). The items were positively worded, answered with a five-point Likert-type scale that ranged from 1 = “strongly disagree” to 5 = “strongly agree” with “undecided” in the middle position. A sample items was as follows: “family members are very good listeners.” Cronbach’s alpha was adequate with $\alpha = .74$. Raw scores were converted to percentiles (Olson 2010); before centering, the mean was 57.99 ($SD = 25.83$) and the range was 9.9–99.

Family functioning was measured by the FACES-IV (Olson 2011) that contained 42 items scored on a five-point Likert-type scale that ranged from 1 (strongly disagree) to 5 (strongly agree). The scale contained six subscales: balance flexibility, balanced cohesion,

Table 1 Reliability (Cronbach’s alpha) of the six subscales of FACES-IV for Olson’s (2011) and this sample

| Variable | Balanced | Balanced | | | | |
|---------------|----------|-------------|----------|------------|---------|-------|
| | Cohesion | Flexibility | Enmeshed | Disengaged | Chaotic | Rigid |
| Olson (2011) | .89 | .84 | .77 | .87 | .86 | .82 |
| Current study | .90 | .79 | .68 | .77 | .83 | .67 |

Table 2 Fixed-effects and random-effects variance components for multilevel models of family members' communication with family: SPR and demographic predictors

| Variable | Model 0 | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|--|-------------------|-------------------|-------------------|-------------------|--------------------------|-------------------|-------------------|-------------------|
| Fixed effects | | | | | | | | |
| Intercept | −.19 (3.72) | .15 (3.64) | .42 (3.55) | .14 (3.58) | −.05 (3.49) | .41 (3.57) | .54 (3.63) | .29 (3.52) |
| <i>Participant (Level 1)</i> | | | | | | | | |
| Spiritual coping (gmSPR) | | 16.43 (6.09)** | 15.93 (6.92)* | 15.83 (7.09)* | 15.81 (6.99)* | 15.85 (6.96)* | 15.85 (6.97)* | 15.85 (6.97)* |
| Family members' gender (AllGen) | | 3.68 (3.89) | | | | | | |
| gmSPR × family members' gender | | −4.43 (10.83) | | | | | | |
| <i>Family (Level 2)</i> | | | | | | | | |
| gmSPR_M | | | 1.05 (14.55) | 4.84 (15.13) | −.61 (14.55) | 1.21 (14.64) | −1.33 (18.42) | .45 (14.56) |
| Patient gender | | | 7.75 (7.13) | | | 7.76 (7.14) | | |
| Patient ethnicity | | | | −6.90 (8.9) | | | 5.24 (9.34) | |
| Patient cancer stage | | | | | 5.29 (3.12) ⁺ | | | 5.09 (3.12) |
| <i>Interactions (Level 1 SPR by Level 2)</i> | | | | | | | | |
| gmSPR × patient gender | | | −11.63 (12.20) | | | | | |
| gmSPR × patient ethnicity | | | | .19 (14.93) | | | | |
| gmSPR × patient cancer stage | | | | | −.38 (5.49) | | | |
| <i>Interactions (Level 2 SPR_M by Level 2)</i> | | | | | | | | |
| gmSPR_M × patient gender | | | | | | −10.51 (25.65) | | |
| gmSPR_M × patient ethnicity | | | | | | | −35.92 (65.86) | |
| gmSPR_M × patient cancer stage | | | | | | | | −5.44 (10.02) |
| Random effects | | | | | | | | |
| Within family | 318.80 (57.98)*** | 286.27 (52.26)*** | 289.15 (52.39)*** | 293.78 (53.44)*** | 293.24 (53.27)*** | 292.68 (53.03)*** | 293.58 (53.35)*** | 293.20 (53.21)*** |

Table 2 continued

| Variable | Model 0 | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Between family | 350.93 (117.04)** | 342.14 (112.54)** | 318.42 (105.31)** | 323.64 (107.96)** | 297.93 (101.41)** | 317.07 (105.34)** | 320.50 (106.97)** | 294.61 (100.39)** |
| %Between (ICC) | 52.40 | 54.45 | 52.41 | 52.42 | 50.41 | 52.0 | 52.19 | 50.12 |
| -2 Loglikelihood (df) | 864.51 (3) | 856.39 (6) | 855.24 (7) | 856.76 (7) | 854.55 (7) | 855.98 (7) | 856.46 (7) | 854.26 (7) |
| $\Delta -2 LL$ (df) compared to model 0 | | 8.12 (3) | 9.27 (4) | 7.75 (4) | 9.96 (4) | 8.53 (4) | 8.05 (4) | 10.25 (4) |

Data for fixed and random effects are unstandardized estimates with standard errors in the parentheses. All variables grand mean centered. SPR_M is family mean for SPR

+ $p < .10$

* $p < .05$

** $p < .01$

*** $p \leq .001$

Table 3 Fixed-effects and random-effects variance components for multilevel models of family members' FACES with family: SPR and demographic predictors

| Variable | Model 0 | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|--|-------------------|-------------------|-------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|
| Fixed effects | | | | | | | | |
| Intercept | 2.59 (.175)*** | 2.60 (.171)*** | 2.61 (.168)*** | 2.61 (.164)*** | 2.60 (.169)*** | 2.62 (.168)*** | 2.62 (.167)*** | 2.62 (.170)*** |
| <i>Participant (Level 1)</i> | | | | | | | | |
| Spiritual coping (gmSPR) | | .445 (.326) | 404 (.383) | .461 (.388) | 400 (.386) | .403 (.382) | .403 (.383) | .403 (.384) |
| Family members' gender (AllGen) | | .090 (.214) | | | | | | |
| gmSPR × family members' gender | | .251 (.594) | | | | | | |
| <i>Family (Level 2)</i> | | | | | | | | |
| gmSPR_M | | | -.018 (.718) | .095 (.734) | -.008 (.732) | -.029 (.717) | -.036 (.873) | .079 (.729) |
| Patient gender | | | .504 (.337) | | | .494 (.335) | | |
| Patient ethnicity | | | | -.741 (.408) ⁺ | | | -.690 (.429) | |
| Patient cancer stage | | | | | .192 (.151) | | | .178 (.151) |
| <i>Interactions (Level 1 SPR by Level 2)</i> | | | | | | | | |
| gmSPR × patient gender | | | -.247 (.649) | | | | | |
| gmSPR × patient ethnicity | | | | -.698 (.808) | | | | |
| gmSPR × patient cancer stage | | | | | -.025 (.291) | | | |
| <i>Interactions (Level 2 SPR_M by Level 2)</i> | | | | | | | | |
| gmSPR_M × patient gender | | | | | | -.102 (1.21) | | |
| gmSPR_M × patient ethnicity | | | | | | | | |
| gmSPR_M × patient cancer stage | | | | | | | | |
| Random effects | | | | | | | | |
| Within family | .904 (.166)*** | .895 (.165)*** | .886 (.162)*** | .879 (.161)*** | .893 (.165)*** | .883 (.161) | .887 (.162) | .892 (.164) |
| Between family | 702 (.266)** | .660 (.259)** | .623 (.243)** | .587 (.235)** | .628 (.251)* | .614 (.239) | .581 (.234) | .608 (.245) |
| | | | | | | | | -.427 (.485) |

Table 3 continued

| Variable | Model 0 | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|--|------------|------------|------------|------------|------------|------------|------------|------------|
| %Between (ICC) | 52.40 | 54.45 | 52.41 | 52.42 | 50.41 | 52.0 | 52.19 | 50.12 |
| -2 Loglikelihood (<i>df</i>) | 298.83 (3) | 296.67 (6) | 294.64 (7) | 292.82 (7) | 295.38 (7) | 294.08 (7) | 293.20 (7) | 294.62 (7) |
| $\Delta -2 LL$ (<i>df</i>) compared to model 0 | | 8.12 (3) | 9.27 (4) | 7.75 (4) | 9.96 (4) | 8.53 (4) | 8.05 (4) | 10.25 (4) |

Data for fixed and random effects are unstandardized estimates with standard errors in the parentheses. All variables grand mean centered. SPR_M is family mean for SPR

+ $p < .10$

* $p < .05$

** $p < .01$

*** $p \leq .001$

enmeshed, disengaged, chaotic, and rigid (see Olson's Web site at <http://www.facesiv.com/home.html> for a conceptual model diagram). Olson established high internal consistency for the six subscales that are compared with those found in the current study within Table 1. The subscales are used to generate a *total ratio score* that can be used for research.

Predictor Variables

The 30-item Family Crisis Oriented Personal Evaluation Scale (F-COPES) developed by McCubbin et al. (1981) has five subscales about how often the respondents believed their families used each of the coping behaviors. The F-COPES is valid across cultures, in the USA (e.g., Hanline and Daley 1992) and internationally (e.g., Berástegui 2007; Lim and Townsend 2012). The spiritual coping subscale (SPR) was comprised of four items. Whereas some items could be considered beliefs "Having faith in God," others were more behavioral "participating in church/synagogue/temple/other activities." After finding the subscale to be excessively negatively skewed (indicating a tendency toward high spiritual coping scores in this sample), an inverse transformation procedure was used to reduce skew. The transformed variable was highly correlated with the non-transformed variable ($r = .91$). The transformed variable was then grand mean centered prior to use in analyses.

Analysis

There were no outliers or excessive skew on any of the measures other than the spiritual coping subscale. Data were analyzed using SPSS-21, mixed models using maximum likelihood and random intercepts. Level 1 variables represented each individual member of the family. Within Level 1 were the two outcomes (family communication and family structure), the predictor individual-level spiritual coping (SPR), and a demographic variable (each participant's gender) entered as a control and as a possible moderator of the association of coping with each outcome. Level 2 variables represented the patient's attributes (ethnicity, gender, and stage of cancer), family-level spiritual coping (SPR_M). The demographic variables were entered as control variables and as potential moderators.

Research questions were evaluated following procedures recommended by Heck et al. (2014). Prior to analyses, all predictor and demographic variables were grand mean centered. In consideration of the small Ns at the family level and in view of the difficulty in finding significant interaction terms after all the main effects variance has been extracted, we report alpha levels of $p < .10$. Null models (Model 0) established that a multilevel model was necessary with significant between family variance. The models, reported in Tables 1, 2 and 3, included a predictor, a demographic variable, and the interaction of the two. The -2 loglikelihood values were compared between the null model and the models with added variables to determine whether the alternate models significantly reduced the unexplained variance. If a predictor was significant at the individual level (Level 1), then individuals, after accounting for family membership, had support scores associated with the outcome (family functioning or communication). If a predictor was significant at the family level (Level 2), then *collective family-level coping* was associated with the outcome. Similarly, significant interactions involving the family-level variables would be important, and follow-up analyses would be conducted to identify the nature of the interaction. This latter effect was a major focus and anticipated contribution of this study.

Table 4 Fixed-effects and random-effects variance components for multilevel models of family members' FACES with family: COM and demographic predictors

| Variable | Model 0 | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|--|---------------|-------------------------|--------------------------|----------------|--------------------------|--------------------------|-----------------|--------------------------|
| Fixed effects | | | | | | | | |
| Intercept | 2.59 (.17)*** | 2.59 (.12)*** | 2.56 (.122)*** | 2.56 (.10)*** | 2.60 (.126)*** | 2.58 (.121)*** | 2.55 (.098)*** | 2.61 (.129)*** |
| <i>Participant (Level 1)</i> | | | | | | | | |
| Family communication (gmCOM) | | .030 (.004)*** | .03 (.006)*** | .03 (.006)*** | .028 (.006)*** | .03 (.006)*** | .028 (.000)*** | .028 (.006)*** |
| Family members' gender (AllGen) | | .015 (.182) | | | | | | |
| gmCOM × family members' gender | | .007 (.007) | | | | | | |
| <i>Family (Level 2)</i> | | | | | | | | |
| gmCOM_M | | | −.0001 (.008) | .003 (.008) | .005 (.008) | .003 (.008) | .007 (.007) | .004 (.008) |
| Patient gender | | | .272 (.245) | | | .257 (.242) | | |
| Patient ethnicity | | | | −.588 (.249)* | | | −.63 (.243)* | |
| Patient cancer stage | | | | | .024 (.114) | | | .03 (.115) |
| <i>Interactions (Level 1 COM by Level 2)</i> | | | | | | | | |
| gmCOM × patient gender | | | .019 (.008)* | | | | | |
| gmCOM × patient ethnicity | | | | −.025 (.008)** | | | | |
| gmCOM × patient cancer stage | | | | | −.0005 (.004) | | | |
| <i>Interactions (Level 2 COM_M by Level 2)</i> | | | | | | | | |
| gmCOM_M × patient gender | | | | | | .010 (.012) | | |
| gmCOM_M × patient ethnicity | | | | | | | −.039 (.010)*** | |
| gmCOM_M × patient cancer stage | | | | | | | | −.002 (.006) |
| Random effects | | | | | | | | |
| Within family | .90 (.166)*** | .66 (.123)*** | .617 (.117)*** | .701 (.132)*** | .673 (.126)*** | .675 (.127)*** | .674 (.125)*** | .671 (.125)*** |
| Between family | .70 (.266)** | .27 (.143) ⁺ | .264 (.141) ⁺ | .085 (.105) | .260 (.142) ⁺ | .231 (.137) ⁺ | .079 (.096) | .260 (.141) ⁺ |

Table 4 continued

| Variable | Model 0 | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|---|------------|-----------|------------|------------|------------|------------|------------|------------|
| %Between (ICC) | 43.71 | 29.03 | 29.74 | 10.81 | 27.87 | 25.5 | 10.49 | 27.93 |
| -2 Loglikelihood (df) | 298.83 (3) | 255.4 (6) | 250.25 (7) | 245.76 (7) | 256.58 (7) | 254.96 (7) | 241.68 (7) | 256.42 (7) |
| $\Delta -2 LL$ (df) compared to model 0 | | 43.43 (3) | 48.58 (4) | 53.07 (4) | 42.25 (4) | 43.87 (4) | 57.15 (4) | 42.41 (4) |

Data for fixed and random effects are unstandardized estimates with standard errors in the parentheses. All variables grand mean centered. COM_M is family mean for COM

+ $p < .10$

* $p < .05$

** $p < .01$

*** $p \leq .001$

Results

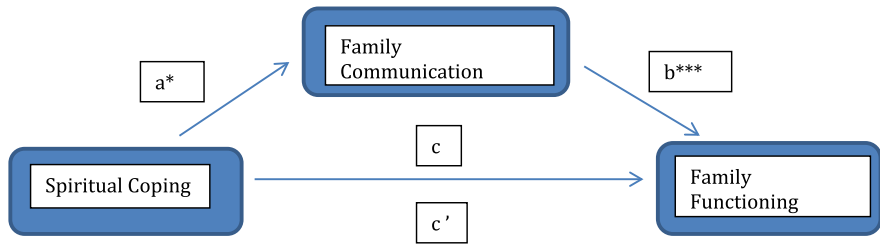
The first set of analyses involved the associations of spiritual coping with family communication. Referring to the results in Table 2, in Model 1 spiritual coping was a significant predictor of family communication. The intercept for family communication was nonsignificant, but adding spiritual coping (gmSPR) significantly improved the fit of the model to the data [$\chi^2(3) = 16.43, p < .01$]. There remained significant unexplained between family variance that could be reduced by adding between family predictors. The additional Table 2 models (2–7) added family-level spiritual coping (gmSPR_M) as a predictor. Each model also added one of the patient-level predictors and included an interaction term with spiritual coping (models 2 through 4) or an interaction term with family-level spiritual coping (models 5 through 7). Across all models, spiritual coping as reported by individuals was a significant predictor of family communication. In addition, model 4 indicated that as the cancer stage of the patient increased family communication also had a tendency to increase ($B = 5.29, p < .10$). Models 2 through 7 indicated that family-level spiritual coping was not a significant contributor to family communication.

In answer to our research question: Yes, after accounting for family membership, as an individual's levels of spiritual coping increased so did their family's healthy communication. Interestingly, this was not so when whole families' opinions were examined. This suggests that spiritual coping, as measured in this study, is an individual experience. Cancer stage severity contributed to healthier communication in families, but gender and ethnicity did not.

Predicting Family Functioning

It is important to remember that family functioning as the dependent variable was total ratio score, representing the intersection of flexibility and cohesion. Moderate scores represent more balanced amounts of the two family constructs, and extreme scores represent families with extreme amounts of one or both (low or high flexibility, low or high cohesion). Families often move into an extreme when faced with a crisis but move back toward moderation as they adapt and readjust creating a new normal for that family. Although the authors originally hypothesized that spiritual coping would contribute to the variance of family functioning, this was not the case (see Table 3). Interestingly, however, patient ethnicity approached significance when added to the model with spiritual coping in model 3 ($B = -.741, p < .10$). This suggests that families with a patient who was Latino/Hispanic may have used more spiritual coping that either resulted from or resulted in being more extreme in an aspect of their family functioning (a one-time assessment cannot determine whether this was a temporary or continuous state), but this was not the case with families with a White patient.

Although spiritual coping did not predict family functioning, spiritual coping had, however, contributed to the variance of communication. To further examine the entire model in such a manner that could prove useful to mental health and medical care providers, the authors chose to examine whether there might be a direct effect between communication and family functioning and an indirect effect between spiritual coping and family functioning. First, family communication was put into a model as a predictor variable with family functioning as the outcome variable. The findings are in Table 4. Family communication significantly predicted the variance in family functioning across all models. In addition, patient gender was a predictor of family functioning in model 2



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

Fig. 1 Bootstrapping Matrix

($B = .019$, $p < .05$), meaning that families with female patients were more likely to have more balanced family functioning (flexibility and cohesion). Patient ethnicity was a significant predictor in model 3 ($B = -.63$, $p < .05$) as well as in model 6 ($B = -.039$, $p = .001$), indicating that families with a Latino/Hispanic patients scored lower on family functioning (as above they had more extreme amounts of flexibility, cohesion, or both) than families with a non-Hispanic patient.

In prior analyses, a significant direct effect was found between spiritual coping and communication (a), and communication and family functioning (b), but no direct affect was found between spiritual coping and family functioning (c). A final model was tested using the bootstrapping method as described by Anderson et al. (2014). A bootstrapping matrix (see Figure 1) was generated to test whether an indirect relationship might exist (c'). Looking at Figure 1, path “a” was found to be significant ($t = 2.41$, $p = .018$); “b” was found to be significant ($t = 9.36$, $p = .0000$); “c” remained nonsignificant ($t = 1.48$, $p = .143$); and “c” was found to be nonsignificant ($t = -.272$, $p = .786$). Therefore, there was neither a direct nor an indirect relationship between spiritual coping and family functioning. This finding was useful in clarifying the relationships among the variables and to inform our interpretations of the data.

Discussion

Spiritual Coping and Communication

Although the authors were hoping to identify a family-level construct of spiritual coping, after taking into account a person’s family membership, only individuals’ levels of spiritual coping were associated satisfaction with their family communication. Hence, despite using an instrument designed to assess families’ use of spiritual coping, spiritual coping as measured in this study was more of an individual phenomenon.

This study’s results support the idea that one can increase a person’s satisfaction with their family’s communication by working through spiritual coping, and the entire family does not need to participate or agree upon steps to take to increase spiritual coping. Even within a family, each person can attend to one’s own spiritual needs. Our results suggest that spiritual coping can provide a focus through which to both cope and talk about spirituality, without having to talk overtly about the cancer, caregiving, and the unknown future.

What this model provides is a gateway topic and practice (often involving nonverbal communication). Sharing, planning, and reviewing a religious involvement, spiritual rituals, hopes, ideas, and feelings can be a vehicle through which a person's satisfaction with one's family communication can be enhanced. Sharing and encouraging each other's hope, rituals, and involvement can provide a topic through which to improve communication. And a better experience with one's family's communication lead participants to experience healthier family functioning. What is important is that family communication is at the center of this model. Families who are struggling with how to maintain open communication during a cancer crisis or serious transitions along the care journey need such a focus through which to maintain healthy communication.

Communication and Family Functioning

After taking into account their family membership, individuals' greater use of spiritual coping was positively associated with increased family communication, and in turn better family communication was associated with better family functioning. Thus, using whatever means congruent with the family to improve members' experiences with their families' communication lead to less extreme and more balanced levels of flexibility and cohesion. However, individual's increased use of spiritual coping was neither directly nor indirectly related to their assessment of their family's functioning. The people in this study reported that better family communication was indeed a means through which people could experience more balanced family functioning—which in this study means to have flexible family roles and rules while maintaining a moderate (not too much or too little) amount emotional closeness.

The influence of gender and ethnicity is interesting, and warrants caution when trying to interpret. Gender and ethnicity have been shown to influence the path between spiritual coping behaviors by caregivers (Rabinowitz et al. 2009). Although Latinos in this study did not endorse the use of spiritual coping more than the White participants, after taking into account family membership, individuals whose patient family member was Latino/Hispanic showed a tendency to report more extreme family functioning while also using more spiritual resources. Latinos have been found to report both higher religiosity and endorse use of religious coping significantly more than Caucasians in similar health and caregiving situations (Rabinowitz et al. 2010). Because of the nature of the FACES-IV instrument, the ratio score is used instead of single scale scores. Thus, we cannot know what type of extreme family functioning was occurring—it could have been in any of the 16 extreme family constellations: flexibility and/or cohesion may have been extremely high or low (see Olson for a more thorough discussion of extreme family functioning typologies). In addition, temporary enmeshment concurrent with greater use of spiritual coping could be culturally congruent and functional. Longitudinal research would have been needed to know whether this extreme family functioning was temporary or of longer duration.

Limitations and Suggestions for Research

There were several limitations, such as the self-selection bias common to all research surveys, which make the results of this study important but not generalizable beyond the volunteers. The single sampling design did not allow for the researchers to examine families over time which could provide more detailed information about the direction of the influence among variables, and whether extreme and balance family functioning scores remained steady or varied. Future research with larger and more diverse samples would

enable a more thorough examination of both individuals' and their families' use of spiritual coping in relation to both family communication and other complex interpersonal family dynamics of interest.

The four-item subscale of spiritual coping from the FACES instrument might have been too narrow in its examination of the construct. The arena of familial spiritual coping research might benefit from developing a more thorough assessment that could capture interpersonal aspects of spiritual communication, rituals, experiences, beliefs, and behaviors that combine to create the family experience. Knowing how families experienced their familial spiritual coping prior to the cancer crisis might help researchers and practitioners to understand the phenomenon and its relationship with family communication.

Future research of families should have a larger and more diverse sample. Examining families with members with similar levels of spirituality and beliefs alongside families with diverse spiritual beliefs and coping would be an interesting study. Finding pathways through spiritually focused family conversations may be different when medical crises magnify differences as opposed to when crises melt away differences. Research using mixed methods might enable researchers to provide more complex and meaningful data to practitioners who seek to help families improve their communication and general functioning.

Conclusion

Despite limitations, the multilevel modeling provided intriguing results as to when family-level and when individual-level spiritual coping were predictive. Future research with larger samples would enable multilevel models to simultaneously control for demographic variables and test mechanisms through which there are associations between spiritual coping and healthy communication in families with a cancer patient. In addition, measures that reflect spirituality at the marital and familial levels are needed. Relational spirituality has yet to be operationalized so that effective interventions can be derived to nurture and heal this important aspect of our interpersonal lives. Longitudinal research could clarify direction of effects and further refine where family therapists', palliative caregivers', and clergies' efforts would be most effective.

Acknowledgments This research was supported by an intramural grant from Texas Tech University, College of Human Sciences. We extend appreciation to the patients and their families for their time and contributions to this research.

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