

Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer

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Abstract

Background: Although religion is important to many people with cancer, few studies have explored the relationship between religious coping and well-being in a prospective manner, using validated measures, while controlling for important covariates.

Methods: One hundred ninety-eight women with stage I or II and 86 women with stage IV breast cancer were recruited. Standardized assessment instruments and structured questions were used to collect data at study entry and 8 to 12 months later. Religious coping was measured with validated measures of positive and negative religious coping. Linear regression models were used to explore the relationships between positive and negative religious coping and overall physical and mental well-being, depression, and life satisfaction.

Results: The percentage of women who used positive religious coping (i.e., partnering with God or looking to God for strength, support, or guidance) "a moderate amount" or "a lot" was 76%. Negative religious coping (i.e., feeling abandoned by or angry at God) was much less prevalent; 15% of women reported feeling abandoned by or angry at God at least "a little." Positive religious coping was not associated with any measures of well-being. Negative religious coping predicted worse overall mental health, depressive symptoms, and lower life satisfaction after controlling for sociodemographics and other covariates. In addition, changes in negative religious coping from study entry to follow-up predicted changes in these well-being measures over the same time period. Cancer stage did not moderate the relationships between religious coping and well-being.

Conclusions: Negative religious coping methods predict worse mental health and life satisfaction in women with breast cancer.

Introduction

BREAST CANCER is the most common non-skin cancer in women. Approximately 180,000 women in the United States are diagnosed each year with invasive breast cancer and more than 40,000 women will die from the disease this year.¹ As with other serious illnesses, cancer poses profound physical and psychological challenges. Religion is a common way to cope with these challenges.² For example, Johnson and Spilka³ reported that 85% of women with breast cancer turned to religion to cope.

Religious coping can be conceptualized in different ways. Most studies assess the frequency of church attendance or prayer, with the assumption that these behaviors are a response to the stressors in question.⁴ The problem with this assumption is that global measures of religious involvement may reflect dispositional religiousness rather than how people draw from religion during crises.⁵ Another method involves determining the degree to which religion is involved

in coping (e.g., "How important is religion for coping with _____?").⁵ Some scales include religious items that are subsumed by a broader dimension of coping. For example, the Ways of Coping Scale includes two religious items "found new faith" and "I prayed," that are part of a "Positive Reappraisal" coping factor.⁶ Finally, some scales, such as the Religious/Spiritual Coping Scale (RCOPE), assess a range of coping methods, which can be categorized as positive or negative.⁷ Positive religious coping (e.g., benevolent religious appraisals, religious forgiveness, etc.) reflects a secure relationship with God and is associated with improved quality of life in persons with cancer.⁸ In contrast, negative religious coping (e.g., reappraisals of God's powers, feeling abandoned or punished by God, etc.) reflects a tenuous relationship with God and is associated with worse well-being in people with cancer.^{9,10} Unlike dispositional measures of religiousness, these measures focus more specifically on how people actually use religion in times of crisis.¹¹ Studies exploring religious coping are few in number, however, and with rare

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exceptions, have focused on the positive aspects of religious coping.^{8,12}

The authors of a recent review concluded, therefore, that the literature does not allow for definitive conclusions about the effects of religious coping on the well-being of patients with cancer.¹³ Their conclusion was based on the fact that the majority of studies 1) were cross-sectional; 2) rarely used validated measures of religious coping; and 3) failed to control for potential covariates such as social support and stage of disease. This study addresses some of these limitations.

The purpose of this study was to test whether changes in positive and negative religious coping in women with breast cancer predict changes in well-being over time. We expected that greater use of positive religious coping would be associated with greater well-being, whereas greater use of negative coping would be associated with lower well-being. Because negative religious coping may be more strongly associated with health outcomes than is positive religious coping, we hypothesized that negative religious coping would be more consistently predictive of well-being.¹⁴ In addition, work suggests that religious involvement may have stronger positive effects on mental health among people confronting higher levels of stress.^{15,16} We therefore explored whether the relationship between religious coping and well-being was moderated by cancer stage.

Methods

Participants

Participants were enrolled in the Breast Cancer Interventions Study of the Pittsburgh Mind Body Center. The goals of the study were to determine the efficacy of psychosocial interventions for women with breast cancer and to test the relationships between various psychosocial variables, including religiosity, and well-being.

The University of Pittsburgh Institutional Review Board approved the study protocol.

Eligibility and recruitment

Women were age 25 or older and had either stage I or II breast cancer or had stage IV breast cancer. Patients with stage I or II cancer had no prior history of cancer except skin cancer and were within 1 month of beginning treatment. All women were recruited from hospitals in western Pennsylvania. Five hundred forty eligible women were approached and 284 (53%) agreed to participate. No data were collected on women who chose not to participate.

Data collection and measures

Control variables. Unless otherwise noted, variables were collected at study entry (T1) only.

- Sociodemographics: age, ethnicity, and education were collected.
- Social support: assessed using a 12-item version of the Interpersonal Support Evaluation List (ISEL).¹⁷ The ISEL consists of 4 items assessing each of three dimensions of support: appraisal, belonging, and tangible support. A total support score was calculated by summing scores across the three dimensions (range, 0–36; mean = 29; standard deviation [SD] = 5.6; Cronbach α = 0.88).

Higher scores indicated more social support. Social support was assessed at T1 and T2 (8 to 12 months after study entry). Only the T1 measure was used in the analyses.

- Cancer stage: dichotomized as early (stage I or II, $n = 198$) or late (stage IV, $n = 86$) stage cancer.
- Personality attributes: neuroticism was assessed because of its influence on self-reported health.¹⁸ The variable was collected as a part of global personality assessment using a 25-item version of Goldberg's Adjective Scale.¹⁹ A neuroticism score (range, 5–25; mean = 9.7; SD = 3.4; Cronbach α = 0.89) was calculated by summing respondents' agreement with five statements. Higher scores indicated more neuroticism. We also measured hostility, or participants' cynical, mistrustful, and aggressive attitudes towards others, because of its association with worse quality of life in women with breast cancer.²⁰ Hostility was assessed with a 20-item version of the Cook-Medley Hostility Scale.²¹ (mean = 6.2; SD = 3.2; Cronbach α = 0.67). Higher scores indicated higher levels of hostility.
- Religiosity: Because religion is a multidimensional construct, religiosity was defined as a composite measure of religious attendance (How often do you attend religious services?), frequency of prayer (How often do you pray/meditate in places other than religious buildings?), and level of religious and spiritual feelings (To what extent do you consider yourself to be a religious/spiritual person?). These measures can be combined into a reliable scale.²² Because the items had different response scales, Z scores were computed and summed to obtain a composite score (M = 0 [Z scores] SD = 3.2; Cronbach α = 0.83).
- Intervention group assignment: The parent study was an intervention study in which participants were assigned to an educational intervention, peer support, or treatment as usual control group. The education group was taught adaptive coping strategies and stress management whereas women in the peer support group were encouraged to share their experiences. Both interventions were an hour a week for eight weeks. All analyses were first conducted with an intervention variable (two dummy variables comparing each intervention condition to the control condition). Since the intervention was not related to any of the outcomes and there is no theoretical basis for including it in the analyses, this variable was dropped from further analyses.

Predictor variables: Religious coping. Religious coping was measured with four items taken from the RCOPE scale.⁷ Items were scored on a 4-point Likert scale: 1 = not at all, 2 = somewhat, 3 = quite a bit, 4 = a great deal. Positive religious coping was scored as the mean of two statements: (1) I've been working together with God as partners to get through this problem and (2) I've been looking to God for strength, support, and guidance (mean = 3.2; SD = 0.9). Negative religious coping was scored as the mean of two statements: (1) I've been wondering if God has abandoned me and (2) I've been expressing anger at God for letting this happen to me (mean = 1.2; SD = 0.4). Factor analysis yielded two coping factors: Cope with God (i.e., positive religious coping) and Cope Anger (i.e., negative religious coping).

Religious coping was assessed at T1 and T2 (8 to 12 months after study entry).

Outcome variables. The following variables were chosen for study because of their theoretical link to religion.²³

- Overall physical and mental well-being: Assessed with the Short Form-36 (SF-36).²⁴ Responses were summarized to produce two summary components, the Physical Component Summary (PCS) and Mental Component Summary (MCS). Higher scores indicated better self-reported health.
- Depression: The frequency with which patients experienced depressive symptoms within the past week was measured with the 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D)²⁵ (range, 0–30, mean = 5; SD = 4.6; Cronbach α = 0.82). The 10-item version of the CES-D is highly correlated with the 20-item version ($r = 0.96$) with little loss in sensitivity, specificity, or internal reliability.²⁶ Higher scores indicated more depressive symptoms.
- Life satisfaction: measured with the Satisfaction with Life Scale (SWLS),²⁷ which consists of five items rated on a 7-point Likert scale (mean = 26.3; SD = 6.1; Cronbach α = 0.88). Higher scores indicated greater life satisfaction.

Outcome variables were assessed at T1 and T2.

Analyses

Descriptive statistics were used to characterize the sample and zero-order Pearson correlations were computed for all variables at T1. Multiple linear regressions were used to determine the contribution of religious coping to well-being at baseline by regressing well-being outcomes at T1 on the control variables, followed by the religious coping measures at T1.

Next, we explored the relationship between religious coping and well-being over time using the approach recommended by Finkel.²⁸ First, T2 well-being was regressed on T1 control variables, religious coping, and well-being to identify prospective links between religious coping and well-being. Second, T2 religious coping was introduced in the model to identify the extent to which changes in religious coping predicted changes in well-being.

Finally, we explored the impact of cancer stage on religious coping and well-being. We first looked for baseline differences in early- versus late-stage patients on all variables of interest. Next we performed a series of 2×2 repeated measures analyses of variance (ANCOVAs) to assess the impact of cancer stage on religious coping and well-being over time. This was followed with a test of the hypothesis that cancer stage moderates the relationship between coping and well-being by adding an interaction term of cancer stage and coping measures to the regression models.²⁹

Results

Description of sample

Our sample consisted predominantly of educated (72% attended college, 6% attended vocational/trade school, 21% graduated high school, 1% had not completed high school), middle-aged (mean = 51 years, SD = 9.6), white (88% white,

10% African American and 2% Hispanic or other) women. One hundred ninety-eight (70%) had early-stage (stage I/II) and 86 (30%) had late-stage (stage IV) breast cancer. Subjects were Protestant ($n = 125$, 44%), Roman Catholic ($n = 111$, 39.1%), Jewish ($n = 15$, 5.3%), other ($n = 17$, 6%) or had no religious affiliation ($n = 14$, 4.9%). More than 90% of women considered themselves at least somewhat religious, 80% prayed at least once a week, and 60% attended church at least once a month. Positive religious coping was a common coping strategy. The percentage of women who used Cope with God “a moderate amount” or “a lot” was 76%. Cope anger was much less prevalent; 15% of women reported feeling abandoned by or angry at God at least “a little.”

Correlations between study variables

Zero-order correlations at study entry are presented in Table 1. Cope with God was not significantly correlated with any outcomes. In contrast, Cope Anger was correlated with worse overall mental health (MCS) ($r = -0.22$, $p < .01$), more depressive symptoms ($r = 0.24$, $p < 0.01$), and lower life satisfaction ($r = -0.22$, $p < 0.01$), but not with physical health (PCS). Overall religiosity was associated with more frequent use of Cope with God ($r = 0.68$, $p < 0.01$) and with less frequent use of Cope Anger ($r = -0.12$, $p < 0.05$).

Religious coping and well-being

Multiple regression was used to assess whether religious coping predicted well-being at T1 after including control variables. Cope Anger was associated with lower overall mental health ($\beta = -3.06$, $p < 0.05$), more depressive symptoms ($\beta = 2.05$, $p < 0.01$), and less life satisfaction ($\beta = -2.0$, $p < 0.01$). Cope with God was not associated with any of the outcomes (Table 2).

We then identified the extent to which changes in religious coping from T1 to T2 were predictive of changes in well-being over the same period (Table 3). Changes in Cope Anger predicted changes in overall mental health ($\beta = -4.92$, $p < 0.01$), depression ($\beta = 2.66$, $p < 0.01$), and life satisfaction ($\beta = -2.95$, $p < 0.001$). Changes in Cope with God did not predict any of these outcomes.

There were no differences in religious coping scores or mental health between early- and late-stage patients at study entry (Table 4). Late-stage patients, however, reported worse physical health and life satisfaction at study entry. The results of ANCOVA testing for interactions between cancer stage and time indicated that religious coping and well-being did not change significantly from T1 to T2 in the late stage group. In contrast, the early-stage group reported less frequent use of positive religious coping, improved physical well-being, and less depression over time. We then tested whether cancer stage moderates the relationship between coping and well-being by adding an interaction term of cancer stage and coping measures to the regression models. The effects of the interaction terms did not reach significance in either regression model indicating that cancer stage was not a moderating factor of the relationships between religious coping and well-being.

Discussion

We followed a group of women with breast cancer for 8 to 12 months to determine the relationship between religious

TABLE 1. CORRELATIONS BETWEEN CONTROL VARIABLES, RELIGIOUS COPING, AND WELL-BEING AT STUDY ENTRY

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Age	0.02	-0.09	0.01	-0.04	-0.15 ^a	-0.09	0.09	0.07	-0.22 ^b	-0.06	0.24 ^b	-0.15 ^a	0.06
(2) Race		0.00	-0.07	0.01	-0.04	0.19 ^b	0.15 ^b	0.15 ^b	-0.09	-0.04	0.00	-0.06	-0.12 ^a
(3) Education			0.13 ^a	-0.12 ^a	-0.07	-0.11	-0.07	-0.23 ^b	0.03	0.14 ^a	0.12	-0.18 ^b	0.13 ^a
(4) Social Support				-0.08	-0.34 ^b	-0.27 ^b	0.19 ^b	0.07	-0.14 ^a	0.06	0.37 ^b	-0.39 ^b	0.47 ^b
(5) Cancer Stage					-0.02	0.02	-0.09	-0.02	0.09	-0.37 ^b	0.10	-0.03	-0.14 ^a
(6) Neuroticism						0.22 ^b	-0.15 ^b	-0.04	0.13 ^a	-0.06	-0.58 ^b	0.52 ^b	-0.42 ^b
(7) Hostility							-0.19 ^b	0.00	0.13 ^a	-0.06	-0.21 ^b	0.16 ^b	-0.33 ^b
(8) Religiosity								0.68 ^b	-0.12 ^a	-0.01	0.12	-0.12 ^a	0.19 ^b
(9) Cope with God									-0.06	-0.07	0.04	-0.01	0.05
(10) Cope Anger										-0.11	-0.22 ^b	0.24 ^b	-0.22 ^b
(11) Overall Physical Health											-0.02	-0.20 ^b	0.20 ^b
(12) Overall Mental Health												-0.77 ^b	0.43 ^b
(13) Depressive Symptoms													-0.41 ^b
(14) Life Satisfaction													1.00

Note: ^a $p < 0.05$; ^b $p < 0.01$.

Race: 0 = white, 1 = nonwhite.

Cancer stage: 0 = stage I/II, 1 = stage IV.

Higher scores represent more/greater age, years of education, social support, neuroticism, hostility, and religiosity, better overall physical and mental health, more depression, more life satisfaction, and greater use of coping with God, and anger at God.

coping and well-being. Three major findings emerged. First, negative religious coping, conceptualized as Cope Anger (i.e., wondering if God has abandoned me and expressing anger at God) predicted worse overall mental health, more depression, and less life satisfaction. Changes in Cope Anger predicted worsening mental health, increases in depressive symptoms, and decreases in life satisfaction over time. The effect sizes demonstrated (i.e., negative religious coping explained approximately 2% of the variance in well-being) were consistent with those found with other coping strategies and health outcomes.³⁰ Second, positive religious coping (i.e., working together with God as partners and looking to God for

strength, support, and guidance) had no association with well-being. Third, although the early stage patients had improved physical health and depression from study entry to follow-up, cancer stage did not moderate the relationships between religious coping and well-being.

Our results are consistent with other studies showing that negative religious coping predicts worse psychological adjustment.^{14,31} One of the only studies to examine these relationships in a prospective manner found similar results; negative religious coping was associated with more depression in medically ill patients over a two year period while positive religious coping was not.³² It is important to note an

TABLE 2. MULTIPLE REGRESSION ANALYSIS: EXPLORING WHETHER RELIGIOUS COPING PREDICTS WELL-BEING AT STUDY ENTRY

	Overall physical health	Overall mental health	Depression	Life satisfaction
Step 1 (control variables)				
Age	-0.08 (0.06)	0.21 (0.06) ^a	-0.06 (0.03) ^b	-0.00 (0.03)
Race	-0.74 (1.73)	-0.23 (1.67)	-0.80 (0.94)	-1.78 (1.03)
Education	0.44 (0.38)	0.65 (0.37)	-0.59 (0.21) ^c	0.19 (0.23)
Social support	-0.01 (0.11)	0.41 (0.10) ^a	-0.25 (0.06)	0.36 (0.06) ^a
Cancer stage	-7.85 (1.19) ^a	3.07 (1.16) ^c	-0.93 (0.65)	-1.45 (0.71) ^c
Neuroticism	-0.22 (0.17)	-1.54 (0.16) ^a	0.71 (0.09) ^a	-0.53 (0.10) ^a
Hostility	-0.13 (0.19)	-0.11 (0.18)	-0.00 (0.10)	-0.31 (0.11) ^b
Religiosity	-0.15 (0.18)	0.00 (0.17)	-0.02 (0.10)	0.14 (0.11)
Adjusted R ²	0.14 ^a	0.40 ^a	0.33 ^a	0.33 ^a
Step 2 (religious coping)				
Cope with God	-0.48 (0.81)	0.20 (0.79)	0.26 (0.44)	-0.07 (0.48)
ΔR ²	0.001	0.000	0.001	0.000
R ² Total	0.14 ^a	0.40 ^a	0.33 ^a	0.33 ^a
Cope Anger	-2.11 (1.29)	-3.06 (1.25) ^b	2.05 (0.70) ^c	-2.00 (0.77) ^c
ΔR ²	0.008	0.01 ^b	0.02 ^c	0.02 ^c
R ² Total	0.14 ^a	0.41 ^a	0.35 ^a	0.35 ^a

Note: ^a $p < 0.001$; ^b $p < 0.05$; ^c $p < 0.01$.

Data are unstandardized beta coefficients with standard errors in parentheses.

Race: 0 = white, 1 = nonwhite.

Cancer stage: 0 = early stage, 1 = late stage.

Higher scores represent more/greater age, years of education, social support, neuroticism, hostility, and religiosity, better overall physical and mental health, more depression, more life satisfaction, and greater use of coping with God and anger at God.

TABLE 3. MULTIPLE REGRESSION ANALYSIS: CHANGES IN RELIGIOUS COPING PREDICTING CHANGES IN WELL-BEING

	Overall physical health T2		Overall mental health T2		Depression T2		Life satisfaction T2	
	Cope w God	Cope Anger	Cope w God	Cope Anger	Cope w God	Cope Anger	Cope w God	Cope Anger
Step 1: Control variables and Time 1 well-being and religious coping								
Age	-0.11 (0.07)	-0.12 (0.07)	0.06 (0.07)	0.06 (0.07)	-0.03 (0.03)	-0.03 (0.03)	0.01 (0.03)	0.01 (0.03)
Race	-0.81 (2.07)	-0.90 (2.08)	3.18 (2.09)	3.21 (2.10)	0.20 (1.05)	0.32 (1.05)	-0.61 (0.91)	-0.68 (0.92)
Education	-0.04 (0.45)	-0.04 (0.44)	0.05 (0.46)	0.10 (0.45)	-0.27 (0.23)	-0.29 (0.23)	0.19 (0.20)	0.21 (0.19)
Social Support	0.01 (0.12)	0.01 (0.12)	0.06 (0.12)	0.06 (0.12)	-0.10 (0.06)	-0.10 (0.06)	0.01 (0.06)	0.01 (0.06)
Cancer Stage	-6.79 ^a (1.53)	-6.80 ^a (1.52)	-0.22 (1.52)	-0.18 (1.52)	0.93 (0.77)	0.90 (0.76)	-0.33 (0.66)	-0.33 (0.65)
Neuroticism	-0.26 (0.20)	-0.26 (0.20)	-0.30 (0.23)	-0.31 (0.23)	0.37 ^b (0.11)	0.38 ^b (0.11)	-0.06 (0.09)	-0.06 (0.09)
Hostility	-0.23 (0.22)	-0.23 (0.22)	0.04 (0.22)	0.02 (0.22)	-0.03 (0.11)	-0.04 (0.11)	0.02 (0.10)	0.02 (0.10)
Religiosity	-0.07 (0.29)	-0.08 (0.21)	0.16 (0.30)	0.04 (0.21)	-0.14 (0.15)	-0.09 (0.10)	0.04 (0.13)	0.01 (0.09)
Well-being T1	0.54 ^a (0.07)	0.54 ^a (0.07)	0.37 ^a (0.07)	0.38 ^a (0.07)	0.33 ^a (0.06)	0.32 ^a (0.06)	0.70 ^a (0.05)	0.70 ^a (0.05)
Religious Coping T1	-0.02 (0.95)	-0.59 (1.49)	-0.54 (0.96)	0.33 (1.52)	0.19 (0.48)	0.80 (0.76)	-0.14 (0.42)	-0.36 (0.66)
Adjusted R ²	0.30 ^a	0.30 ^a	0.22 ^a	0.21 ^a	0.31 ^a	0.31 ^a	0.57 ^a	0.57 ^a
Step 2: Time 3 religious coping								
Cope Measure T2	0.38 (1.07)	-1.28 (1.89)	0.34 (1.08)	-4.92 ^c (1.88)	-0.33 (0.54)	2.66 ^b (0.94)	0.70 (0.47)	-2.95 ^a (0.80)
ΔR ²	0.000	0.001	0.000	0.02 ^c	0.001	0.02 ^b	0.004	0.02 ^a
Adjusted R ² Total	0.30 ^a	0.30 ^a	0.21 ^a	0.23 ^a	0.31 ^a	0.33 ^a	0.57 ^a	0.59 ^a

Note: ^ap < 0.001; ^bp < 0.05; ^cp < 0.01.

Data are unstandardized β coefficients with standard errors in parentheses.

Race: 0 = white, 1 = nonwhite.

Cancer stage: 0 = early stage, 1 = late stage.

Higher scores represent more/greater age, years of education, social support, neuroticism, hostility, and religiosity, better overall physical and mental health, more depression, more life satisfaction, and greater use of coping with God and anger at God.

TABLE 4. EARLY (STAGE I/II) VS. LATE (STAGE IV) BREAST CANCER: BASELINE COMPARISONS AND IMPACT OF CANCER STAGE ON RELIGIOUS COPING AND WELL-BEING OVER TIME

Dependent variables	Testing baseline differences between stages using t test				Testing impact of Cancer Stage over Time ^a				
	Early stage (n = 196); Late stage (n = 86)		Early stage (n = 180); Late stage (n = 55)		Cancer stage	Mean T1	Mean T2	p value for Stage × Time Interaction	p value for post hoc tests of T1 to T2 differences ^b
	Cancer stage	Mean	p value for t-test	Cancer stage					
Positive religious coping ^c (Cope with God)	Early stage	3.24	ns	Early stage	3.27	3.06	0.043	<0.0001	
	Late stage	3.20		Late stage	3.05	3.05		ns	
	Early stage	1.16	ns	Early stage	1.17	1.11	ns	0.044	
Negative religious coping (Anger at God)	Late stage	1.25		Late stage	1.18	1.14		ns	
	Early stage	45.7	0.0001	Early stage	45.7	49.6	0.002	<0.0001	
	Late stage	37.9		Late stage	41.6	40.7		ns	
Physical well-being	Early stage	45.9	ns	Early stage	45.9	49.7	ns	<0.0001	
	Late stage	48.2		Late stage	47.8	50.0		ns	
	Early stage	7.64	ns	Early stage	7.67	6.38	0.027	0.003	
Mental well-being	Late stage	7.21		Late stage	6.32	7.04		ns	
	Early stage	25.6	0.02	Early stage	25.7	25.6	ns	ns	
	Late stage	23.7		Late stage	24.4	24.4		ns	

^aImpact of cancer stage over time was tested using 2 × 2 Stage × Time ANCOVA (see regression models for covariates).

^bPost hoc tests compared T1 and T2 mean scores separately within each cancer stage.

^cHigher scores represent more better overall physical and mental health, more depression, more life satisfaction, and greater use of coping with God and anger at God. ANCOVA, analysis of covariance; ns, not significant.

exception to this pattern, however. One study of patients with breast cancer demonstrated that positive and negative religious coping were differentially related to depression.¹² Our study, however, was the only one to explore these relationships in a prospective manner, using a validated measure, while controlling for important covariates.

There are several implications to our findings. For example, clinicians rarely ask patients with serious illness about their religious coping despite the fact that the majority want their physicians to be aware of their spiritual beliefs.^{33,34} Because negative rather than positive religious coping predicts important health outcomes, inquiring about negative religious coping may be most beneficial. Clinicians could therefore facilitate referrals to clergy for people in the midst of religious/spiritual struggle.³⁵ Our findings also have implications for the development of counseling therapies. There has been increasing interest within psychology to integrate religious beliefs and practices into therapy.^{36,37} A recent meta-analysis demonstrated that these interventions may be effective in improving psychological outcomes.³⁸ Our results indicate that targeting negative religious coping may be most important when developing counseling interventions. The focus on negative religious coping would be consistent with the literature on forgiveness interventions.³⁹ People may feel less angry toward God if they can be taught to believe that God did not cause the illness, if they view God's intentions as positive, or if they see some good coming from the illness.⁴⁰

Limitations

It is important to comment on our study limitations. First, our sample consisted primarily of white, educated, middle-aged, Judeo-Christian women with breast cancer. Although the percent of women who reported high levels of positive and negative religious coping in our sample was similar to that found in other clinical samples, it would nonetheless be important to replicate our results in other groups.^{41,42} For example, African Americans generally are more likely to use religion to cope than are Caucasians.⁴³ African American women with breast cancer are also more likely to use religion as a coping strategy.⁴⁴ Also, given that the manifestations of religion can vary across groups and cultures, it would be important to study patients of other religious faiths.⁴⁵ Second, although we demonstrated that positive religious coping was not associated with well-being, our results should not imply that positive religious coping is unhelpful to patients with cancer. The fact that 76% of our sample used Cope with God "a moderate amount" or "a lot" implies that positive religious coping likely provides some benefits, for example, by stimulating personal growth which may in turn act as an important counterbalance to psychological distress.^{32,46} In addition, our sample size was not sufficient to exclude the possibility that positive religious coping may have a small effect on well-being (i.e., we had a power of 0.60, smaller than the recommended power of 0.80, to detect an effect size of 0.4). Third, although we demonstrated that negative religious coping predicted worse psychological outcomes, the relationship may have been different had the patients been followed for a longer period. Resolving anger at God over time may be associated with better mental health and personal growth.^{47,48} Finally, as with all observational studies, our data

do not allow us to infer the direction of causality between negative religious coping and well-being. In addition, although several studies have demonstrated that religious coping generally has a direct association with well-being, it is possible that another, unmeasured variable (e.g., hopelessness) mediates this relationship.^{49,50}

In summary, religion is an important coping mechanism for women dealing with breast cancer. While used by the great majority of women in our study, positive religious coping was not associated with well-being. In contrast, negative religious coping predicted worse well-being over time, regardless of cancer stage. Clinicians should therefore be aware that women in the midst of religious/spiritual struggle are at risk for worse emotional well-being. By respectfully inquiring about whether their patients are feeling religious/spiritual distress, clinicians can intervene for women at risk.

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References

1. American Cancer Society: Breast cancer facts & figures 2007–2008. www.cancer.org (Last accessed February 1, 2009).
2. Zaza C, Sellick SM, Hillier LM: Coping with cancer: What do patients do. *J Psychosoc Oncol* 2005;23:55–73.
3. Johnson SC, Spilka B: Coping with breast cancer: The role of clergy and faith. *J Relig Health* 1991;30:21–33.
4. Harrison MO, Koenig HG, Hays JC, Eme-Akawari AG, Pargament KI: The epidemiology of religious coping: A review of recent literature. *Int Rev Psychiatr* 2001;13:86–93.
5. Pargament K, Ensing DS, Falgout K, Olsen H, Reilly B, Van Haitisma K, Warren R: God help me: I. Religious coping efforts as predictors of the outcomes to significant negative life events. *Am J Commun Psychol* 1990;18:793–824.
6. Lazarus R, Folkman S: *Stress, Appraisal, and Coping*. New York: Springer, 1984.
7. Pargament KI, Koenig HG, Perez LM: The many methods of religious coping: development and initial validation of the RCOPE. *J Clin Psychol* 2000;56:519–543.
8. Tarakeshwar N, Vanderwerker LC, Paulk E, Pearce MJ, Kasl SV, Prigerson HG: Religious coping is associated with the quality of life of patients with advanced cancer. *J Palliat Med* 2006;9:646–657.
9. Pargament KI, Smith BW, Koenig HG, Perez L: Patterns of positive and negative religious coping with major life stressors. *J Sci Study Relig* 1998;37:710–724.

10. Manning-Walsh J: Spiritual struggle: Effect on quality of life and life satisfaction in women with breast cancer. *J Holist Nurs* 2005;23:120-140; discussion 141-144.
11. Pargament KI: *The Psychology of Religion and Coping*. New York: Guilford Press, 1997.
12. Zwingmann C, Wirtz M, Muller C, Körber J, Murken S: Positive and negative religious coping in German breast cancer patients. *J Behav Med* 2006;29:533-547.
13. Thune-Boyle IC, Stygall JA, Keshtgar MR, Newman SP: Do religious/spiritual coping strategies affect illness adjustment in patients with cancer? A systematic review of the literature. *Soc Sci Med* 2006;63:151-164.
14. Sherman AC, Simonton S, Latif U, Spohn R, Tricot G: Religious struggle and religious comfort in response to illness: Health outcomes among stem cell transplant patients. *J Behav Med* 2005;28:359-367.
15. McCrae RR: Situational determinants of coping responses: Loss, threat, and challenge. *J Pers Soc Psychol* 1984;46:919-928.
16. Strawbridge WJ, Shema SJ, Cohen RD, Roberts RE, Kaplan GA: Religiosity buffers effects of some stressors on depression but exacerbates others. *J Gerontol B Psychol Sci Soc Sci* 1998;53:S118-126.
17. Cohen S, Mermelstein R, Kamarck T, Hoberman HM: Measuring the functional components of social support. In: Sarason IG, Sarason BR (eds): *Social Support: Theory, Research, and Application*. Dordrecht, The Netherlands: Martinus Nijhoff, 1985, pp. 73-94.
18. Watson D, Clark LA: Negative affectivity: The disposition to experience aversive emotional states. *Psychol Bull* 1984; 96:465-490.
19. Goldberg LR: The development of markers for the big-five factor structure. *Psychol Assessment* 1992;4:26-42.
20. Shapiro SL, Lopez AM, Schwartz GE, Bootzin R, Figueredo AJ, Braden CJ, Kurker SF: Quality of life and breast cancer: Relationship to psychosocial variables. *J Clin Psychol* 2001; 57:501-519.
21. Cook WW, Medley DM: Proposed hostility and pharisaic-virtue scales for the MMPI. *J Appl Psychol* 1954;38:414-418.
22. Smith BW, Pargament KI, Brant C, Oliver JM: Noah revisited: Religious coping by church members and the impact of the 1993 Midwest flood. *J Community Psychol* 2000;28: 169-186.
23. Koenig HG, McCullough ME, Larson DB: *Handbook of Religion and Health*. New York: Oxford University Press, 2001.
24. Ware JE, Jr, Sherbourne CD: The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care* 1992;30:473-483.
25. Andresen EM, Malmgren JA, Carter WB, Patrick DL: Screening for depression in well older adults: Evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). *Am J Prev Med* 1994;10:77-84.
26. Shrout PE, Yager TJ: Reliability and validity of screening scales: Effect of reducing scale length. *J Clin Epidemiol* 1989;42:69-78.
27. Diener E, Emmons RA, Larsen RJ, Griffin S: The Satisfaction with Life Scale. *J Pers Assess* 1985;49:71-75.
28. Finkel SE: *Causal Analysis with Panel Data*. Thousand Oaks, CA: Sage, 1995.
29. Aiken LS, West SG: *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage Publications, Inc., 1991.
30. Penley JA, Tomaka J, Wiebe JS: The association of coping to physical and psychological health outcomes: A meta-analytic review. *J Behav Med* 2002;25:551-603.
31. Balboni TA, Vanderwerker LC, Block SD, Paulk ME, Lathan CS, Peteet JR, Prigerson HG: Religiousness and spiritual support among advanced cancer patients and associations with end-of-life treatment preferences and quality of life. *J Clin Oncol* 2007;25:555-560.
32. Pargament KI, Koenig HG, Tarakeshwar N, Hahn J: Religious coping methods as predictors of psychological, physical and spiritual outcomes among medically ill elderly patients: A two-year longitudinal study. *J Health Psychol* 2004;9:713-730.
33. Kristeller JL, Zumbun CS, Schilling RF: 'I would if I could': How oncologists and oncology nurses address spiritual distress in cancer patients. *Psychooncology* 1999;8:451-458.
34. Ehman JW, Ott BB, Short TH, Ciampa RC, Hansen-Flaschen J: Do patients want physicians to inquire about their spiritual or religious beliefs if they become gravely ill? *Arch Intern Med* 1999;159:1803-1806.
35. Pargament KI, Zinnbauer BJ, Scott AB, Butter EM, Zerowin J, Stanik P: Red flags and religious coping: Identifying some religious warning signs among people in crisis. *J Clin Psychol* 1998;54:77-89.
36. Sperry L, Shafranske EP: *Spiritually Oriented Psychotherapy*. Washington, D.C.: American Psychological Association, 2005.
37. Harris AHS, Thoresen CE, McCullough ME, Larson DB: Spiritually and religiously-oriented health interventions. *J Health Psychol* 1999;4:413-434.
38. Kaplar M, Wachholtz A, O'Brien W: The effect of religious and spiritual interventions on the biological, psychological, and spiritual outcomes of oncology patients: A meta-analytic review. *J Psychosoc Oncol* 2004;22:39-44.
39. McCullough ME, Pargament KI, Thoresen CE: *Forgiveness: Theory, research, and practice*. New York, Guilford Press, 2000.
40. Murray-Swank N, Pargament K: God where are you? Evaluating a spiritually-integrated intervention for sexual abuse. *Ment Health Relig Cult* 2005;8:167-177.
41. Fitchett G, Murphy PE, Kim J, Gibbons JL, Cameron JR, Davis JA: Religious struggle: prevalence, correlates and mental health risks in diabetic, congestive heart failure, and oncology patients. *Int J Psychiatry Med* 2004;34:179-196.
42. Rippentrop EA, Altmaier EM, Chen JJ, Found EM, Keffala VJ: The relationship between religion/spirituality and physical health, mental health, and pain in a chronic pain population. *Pain* 2005;116:311-321.
43. Taylor RJ, Chatters LM, Levin J: *Religion in the Lives of African Americans*. Thousand Oaks, CA: Sage Publications, Inc., 2004.
44. True G, Phipps EJ, Braitman LE, Harralson T, Harris D, Tester W: Treatment preferences and advance care planning at end of life: The role of ethnicity and spiritual coping in cancer patients. *Ann Behav Med* 2005;30:174-179.
45. Tarakeshwar N, Stanton J, Pargament K: Religion: An overlooked dimension in cross-cultural psychology. *J Cross Cult Psychol* 2003;34:377-394.
46. Linley PA, Joseph S: Positive change following trauma and adversity: A review. *J Trauma Stress* 2004;17:11-21.
47. Bradshaw A, Fitchett G: "God, why did this happen to me?": Three perspectives on theodicy. *J Pastoral Care Counsel* 2003;57:179-189.
48. Calhoun LG, Cann A, Tedeschi RG, McMillan J: A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *J Trauma Stress* 2000; 13:521-527.

49. Pearce MJ, Singer JL, Prigerson HG: Religious coping among caregivers of terminally ill cancer patients: Main effects and psychosocial mediators. *J Health Psychol* 2006;11:743-759.
50. Ai AL, Park CL, Huang B, Rodgers W, Tice TN: Psychosocial mediation of religious coping styles: a study of short-term psychological distress following cardiac surgery. *Pers Soc Psychol Bull* 2007;33:867-882.

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