

Spirituality, Well-Being, and Quality of Life in People With Rheumatoid Arthritis

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Objective. To evaluate spirituality, well-being, and quality of life (QOL) among people with rheumatoid arthritis (RA).
Methods. Questionnaires assessing positive and negative affect, depression, QOL and spirituality were completed. Disease activity was assessed by rheumatologic examination.

Results. Women (n = 62) had a mean (\pm SD) age of 53.0 (\pm 13.0) years with 12 (\pm 13) swollen and tender joints (STJ). Men (n = 15) were 61.9 (\pm 13.0) years with 7 (\pm 11) STJ. Disease activity was associated ($P < 0.05$) positively with depression (r = 0.23), pain (r = 0.26), poorer self-ratings of health (r = 0.29) and physical role limitations (r = 0.26). Spirituality was associated directly with positive affect (r = 0.26) and higher health perceptions (r = 0.29). In multiple regression, spirituality was an independent predictor of happiness and positive health perceptions, even after controlling disease activity and physical functioning, for age and mood.

Conclusion. Spirituality may facilitate emotional adjustment and resilience in people with RA by experiencing more positive feelings and attending to positive elements of their lives.

KEY WORDS. Spirituality; Rheumatoid arthritis; Well-being; Quality of life

INTRODUCTION

Rheumatoid arthritis (RA) is a debilitating, unpredictable, and progressive disease with no cure that affects 1–2% of the population. RA results in pain, uncertainty, physical disability, loss of independence, depression, fear, and psychological distress over long periods of time (1). Thus, RA imposes an immense burden on the individual's ability to cope and may greatly diminish quality of life (QOL) and psychological well-being (2).

There is wide variability in the level of psychological distress, physical functioning, and QOL among people with a comparable burden of disease (3). Only weak associations are evident between disease activity and disability, pain, depression, or general well-being (4).

Psychological factors have been implicated in maintaining well-being. Positive emotional states have been associated with enhanced neuroendocrine and neuroimmune functioning (5–7). Cognitive processes such as the ability to reformulate life values and goals (8) and find meaning in traumatic events including serious illnesses (3,9,10) are psychologically adaptive and may positively impact disease outcomes (11). A supportive network of close relationships also correlates with psychological and physical well-being (12–14).

A spiritual orientation may facilitate adjustment to health challenges. Carl Jung (15), Gordon Allport (16), and Victor Frankl (17), among others, viewed man's search for spiritual meaning and a sense of connection with others as basic drives. Spirituality reflects a unique psychological dimension around which individuals organize their lives, goals, values, and intentions. Behavior in adults is guided by this philosophy. A close link has been observed between religious participation, (i.e., a communal expression of spiritual desires) and positive feelings, notably well-being and optimism (18,19). Although religious practice is a common path to expressing spirituality, the two constructs are overlapping, but are not the same. Spirituality is often viewed as an intrinsic quality of the individual, a desire for personal connectedness with a transcendence reality (20). Religiousness is an outward practice of a particular spiritual understanding and/or the framework of beliefs, values and rituals (21). For many, spirituality of-

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fers hope, meaning, and opportunities for personal growth and enhanced social support (22,23) and may confer important benefits for chronically ill people.

To date, relatively little is known about the relationship between spirituality and chronic illness. In part, this is because spirituality is difficult to distinguish from religiosity and the psychometric properties of most spirituality measures are unknown. Empirically, a spiritual orientation has been associated with health-promoting behaviors and lifestyles that result in lower relative risks of disease and enhanced well-being (24). However, one study has evaluated the role of spirituality in coping with chronic illness. Landis evaluated 94 persons with diabetes mellitus and found that spirituality explained an additional 10% of the variance in psychosocial well-being (25). The investigators concluded that spiritual well-being might be an important internal resource that bolsters the adjustment to uncertainty related to chronic health problems.

The goal of this study was to rigorously evaluate spirituality and its relationship with functional level, psychological well-being, and quality of life in persons with RA. Spirituality was assessed using the Spiritual Transcendence Scale (20), a relatively new instrument that quantifies specific aspects of spirituality and has been extensively psychometrically validated.

PATIENTS AND METHODS

Participants were 77 patients who were seen in the Johns Hopkins Arthritis Center and allied rheumatology clinics between September 1999 and August 2000. To be eligible for the study, all participants: met the American College of Rheumatology (formerly the American Rheumatism Association) (26) criteria for rheumatoid arthritis; had RA for at least 2 years; were 30 years of age or older; and were free of comorbid conditions, or judged to be stable for these conditions prior to entry into the cohort. They were invited sequentially to participate. Of 106 persons who were approached, 77 (71%) agreed to participate in this study. This study was approved by the Johns Hopkins Bayview Medical Center Institutional Review Board.

Measures. *Disease activity.* Medical history, physical examination, and joint assessments were performed by rheumatologists (AKM, JMB). The total number of swollen and tender joints (i.e., joint count) and duration of morning stiffness (minutes) were used as indices of disease activity.

Functional status. Functional level was assessed using the Physical Functioning scale of the Medical Outcomes Study Short-Form 36 (SF-36) (27).

Spiritual transcendence. Spirituality was measured using the Spiritual Transcendence Scale (STS) (20). Spiritual transcendence reflects a quantifiable dimension of spirituality and is defined as the capacity of an individual to stand outside of his/her immediate sense of time and place

and to view life from a larger, more detached perspective. Spiritual transcendence has been found to be non-redundant with current measures of personality and may represent a sixth factor of personality (20).

The STS is a relatively new instrument developed by one of the investigators (RP). To date, the STS is the most rigorously validated measure of spirituality (28). Psychometric properties of the STS have been previously described (20). In brief, STS dimensions have been shown to represent qualities that are independent of the five major dimensions of personality and are structurally stable. Scores on the STS scales have been shown to correlate with a wide range of outcome variables (e.g., internal health locus of control, perceived social support, vulnerability to stress, prosocial behavior, interpersonal orientation, and attitudes towards sexuality) (28).

Depression. An abbreviated version of the Centers for Epidemiological Studies-Depression questionnaire (CES-D) (29) was used to assess depressive symptoms. The CES-D is used widely in research studies to identify symptoms of depression. The 10-item version has been shown to have close agreement ($\kappa = 0.92$) with the original 20-item form (30).

Subjective well-being. The Affect Balance Scale (ABS) was used as an indicator of general psychological well-being or happiness (31). The ABS has been used extensively for more than 30 years and has sound psychometric properties (31). The ABS describes an individual's ability to cope with everyday stresses along 2 relatively independent dimensions, positive and negative affect. Overall well-being reflects the balance between these dimensions.

Statistical analyses. To evaluate sex differences in demographic and disease-related characteristics as well as spiritual transcendence scores, t-tests and chi-square analyses were computed. Variables were examined for normality and transformed when indicated. Correlation and multiple regression methods were used to assess the strength of association among the study variables. Variables were selected for inclusion in the multiple regression model based on theoretical importance as well as significance in bivariate analyses. SPSS software, Version 10.1 (SPSS Inc., Chicago, IL) was used to conduct the statistical analyses.

RESULTS

The cohort was mostly female (81%), white (80%), and well-educated with a long duration of illness, as shown in Table 1. Women were younger than men and had more active disease, as evidenced by high joint counts and longer duration of morning stiffness. Twenty percent of the women and 21% of men had undergone joint replacement. Nearly one-third of the sample reported clinically significant levels of depressive symptoms (i.e., a score of 9 on the abbreviated version of the CES-D). Because sex differences were not found on measures of depression, well-being, quality of life, or spirituality in preliminary analyses, groups were combined for all additional analyses.

Table 1. Characteristics of 77 participants with rheumatoid arthritis*

	Female (n = 62)	Male (n = 15)	P
Age, years	53.0 ± 13.0	61.9 ± 13.0	0.02
Education, years	13.6 ± 3.2	14.2 ± 2.2	0.47
Race (%)			
White	81	87	0.520
African American	11	13	
Other	8	0	
Year of diagnosis	1990 ± 8.6	1990 ± 8.2	0.85
Joint disease			
Number of swollen and tender joints	13.0 ± 12.8	4.4 ± 6.1	0.001
Morning stiffness (minutes)	41.9 ± 75.5	11.9 ± 20.3	0.01
Number of joints replaced (%)			
0	80	79	0.500
1-5	16	21	
6+	4	0	
Depressed (%)†	30.6	33.3	0.840

* Values are mean ± SD unless otherwise indicated.
† Clinically significant levels of depressive symptoms, as reflected using the Centers for Epidemiological Studies-Depression questionnaire.

The religious affiliation of most participants was Christian. The majority was Protestant (58%), or Roman Catholic (27%). The balance of the sample was Jewish (3%), or other (10%), with 2% reporting no formal religious affiliation. Low to moderate correlations were observed among spiritual transcendence and selected religious behaviors such as reading the bible ($r = 0.27$; $P < 0.05$), praying frequently ($r = 0.43$; $P < 0.01$), and attending religious services ($r = 0.44$; $P < 0.01$).

Relationships among disease activity, psychological well-being, depression, quality of life, and spirituality

were evaluated. As shown in Table 2, total joint count was significantly associated ($P < 0.05$) with CES-D scores and pain, and negatively associated with reports of well-being (i.e., affect balance), general health, and problems with work/activities due to health concerns. Disease activity (i.e., total joint count) was not associated with other SF-36 scales including physical functioning, vitality, social functioning, problems with activities due to emotional concerns, or mental health. To assess for potential confounding, the relationship between spiritual transcendence and disease activity was examined. Disease activity was not significantly correlated (i.e., $r = -0.14$; $P > 0.05$) with spiritual transcendence.

Relationships among spirituality, well-being, and quality of life were evaluated. As shown in Table 3, spiritual transcendence scores were directly associated ($r = 0.26$; $P < 0.05$) with positive affect, although not with negative affect, affect balance, life on whole, or CES-D scores. Spiritual transcendence scores also correlated modestly ($r = 0.29$; $P < 0.01$) with the General Health (GH) scale of the SF-36, though not with other scales. A median split was used to classify individuals as either low or high in spirituality. No differences were observed between groups on any SF-36 scale except GH, where high spirituality was associated with significantly higher GH ratings (62.6 ± 22.1 versus 45.3 ± 17.5 ; $P < 0.01$, respectively) reflecting a 17.3 point difference (95% confidence interval 8.0-26.5) than those rated low on spirituality.

Multiple regression was used to evaluate factors associated with positive affect and enhanced GH ratings. As shown in Table 4, spiritual transcendence was an independent predictor of positive affect, even after controlling for age, disease activity, physical function, age, and depressive symptoms. Spiritual transcendence was also an independent predictor of the SF-36 GH scale scores, after controlling for disease activity, physical functioning, age,

Table 2. Relationship between total swollen and tender joints and well-being, depression, quality of life, and spiritual transcendence among patients with rheumatoid arthritis*

	N	Mean	SD	r
Affect Balance Scale				
Positive affect	75	3.7	1.3	-0.15
Negative affect	75	1.5	1.5	0.16
Balance	75	2.2	2.0	-0.23†
Life on whole	72	4.9	4.8	-0.18
CES-D	75	6.5	4.8	0.23†
SF-36				
Physical function	75	52.7	26.5	-0.13
Role-physical	75	43.2	42.1	-0.26†
Pain	75	50.8	21.3	-0.26†
General health	72	53.9	21.8	-0.29†
Vitality	72	49.1	21.3	-0.03
Social functioning	72	73.3	24.3	0.02
Role-emotional	75	72.7	40.0	-0.12
Mental health	72	74.3	14.8	-0.03
Spiritual Transcendence Scale	74	88.6	11.7	-0.14

* CES-D = Centers for Epidemiological Studies-Depression questionnaire; SF-36 = Medical Outcome Studies Short-form 36.
† $P \leq 0.05$.

Table 3. Correlation of Spiritual Transcendence Scale score with well-being and CES-D scores in patients with rheumatoid arthritis (n = 74)*

	1	2	3	4	5	6
Spiritual transcendence	1.00	0.262†	0.040	0.130	0.132	-0.036
Positive affect		1.00	0.041	0.633‡	0.424‡	-0.412‡
Negative affect			1.00	-0.746‡	-0.378‡	0.425‡
Affect balance				1.00	0.559‡	-0.603‡
Life on whole					1.00	-0.532‡
CES-D						1.00

* CES-D = Centers for Epidemiological Studies-Depression questionnaire.
† $P < 0.05$.
‡ $P < 0.01$.

and positive affect (see Table 5). (We used positive affect in this model and dropped CES-D scores to reduce redundancy [$r = -0.41$; $P < 0.001$].)

DISCUSSION

The main findings of this study were that spiritual transcendence is a unique characteristic that varies among individuals with RA, and that it is associated with happiness and joy, as well as positive health perceptions. Even after controlling for disease activity, functional level, depression, and age, spiritual transcendence was moderately associated with positive affect and enhanced self-ratings of health.

The finding that spiritual transcendence is modestly and independently associated with happiness is consistent with those reported by investigators studying other populations (20). Traditionally, attention has focused on the role that negative mood states (e.g., anxiety, depression) play in relation to chronic illnesses. More recently, investigators are exploring the health protective role that positive mood states confer. Positive affect is more than the absence of ill-being; it has been linked with psychological health, subjective well-being, and life satisfaction (14,32,33). Positive affect, or happiness, has been linked to important cognitive and performance outcomes, including greater flexibility, creative problem solving, increased ability to develop alternative perspectives, as well as innovative problem solving (34). Finally, happiness has also been linked to enhanced immune functioning (7,13) which may in turn affect the underlying physiology of a chronic illness (35). In older adults, happiness has also shown to be

protective against stroke (36) and functional decline (37). Increases in positive affect may represent one path through which spirituality influences adjustment to living with a chronic illness.

It is likely that positive affect plays a role in health perceptions. Mood has been shown to influence the reporting of and meaning attached to physical symptoms (38–40). Emotional states may serve as a marker to individuals about how well they are doing. However, even after controlling for the effects of increased positive affect, spirituality was independently associated with enhanced self-appraisals of health. The difference between persons low and high on spirituality in GH perceptions reflects an effect size of approximately 1 standard deviation (41). Self-ratings of health are useful markers that have been shown to a valid indicator of health status (42). Health perceptions add important independent information to objective measures of health status, medical histories, and medical examination. As compared with individuals who rate their health as excellent or good, those with poor health ratings have higher mortality (43,44), poorer physical functioning (35,45,46), and more psychological distress (47), and changes in functional ability. Health perceptions have also been linked to increased health care utilization (i.e., hospitalizations, physician visits, and number of prescriptions written) (48,49) as well as treatment outcomes (50). Ware et al reported that only 56% of the variance on the GH scale is accounted for by physical and mental health, suggesting that other factors play a substantial role in health perceptions (41).

Why would spirituality influence how a person perceives their health? There are several potential explana-

Table 4. Adjusted predictors of positive affect in with persons with rheumatoid arthritis using linear regression (n = 73)*

	Coefficient	Standard error	β	P
Constant	3.416	1.337		0.013
Disease activity	0.0001	0.110	0.001	0.991
Physical functioning	0.00009	0.006	0.018	0.881
Age	-0.0025	0.010	-0.252	0.020
Depressive symptoms	0.0094	0.032	-0.351	0.005
Spiritual transcendence	0.0025	0.012	0.220	0.040

* Adjusted for all other variables in the model. Model adjusted $r^2 = 0.22$, $P < 0.001$. Regression F test = 5.10 with degrees of freedom = 5 and 66, $P < 0.001$.

Table 5. Adjusted predictors of SF-36 General Health scale using linear regression in persons with rheumatoid arthritis (n = 70)*

	Coefficient	Standard error	B	P
Constant	-40.006	19.379		0.043
Disease activity	-0.926	1.553	-0.055	0.553
Physical functioning	0.476	0.075	0.601	<0.001
Age	0.249	0.153	0.156	0.108
Positive affect	1.250	1.593	0.077	0.435
Spiritual transcendence	0.591	0.175	0.311	0.001

* Adjusted for all other variables in the model. Model adjusted $r^2 = 0.45$, $P < 0.001$. Regression F test = 12.23 with degrees of freedom = 5 and 65, $P < 0.001$. SF-36 = Short form-36.

tions. For many, spirituality and health may be inextricably linked. Throughout the ages, medical and spiritual care were dispensed by the same person (51). Second, Persson et al speculate that most of the variance in subjective well-being is accounted for by the individual's perceptions of him/herself and the illness situation (1). Spiritual transcendence may offer a framework for interpreting a positive meaning and purpose to having a chronic illness. In turn, this may facilitate acceptance and reformulation of life priorities, resulting in better adaptation to living with illness. Several studies have found that individuals with a deep religious faith are less vulnerable to depression and report higher levels of happiness after suffering loss or a serious illness (22,52,53). Third, a spiritual orientation may also provide social support, act as a buffer against stress, and facilitate adaptive coping (24); all of which are factors consistently associated with better mental health outcomes. Finally, spiritual transcendence was associated with higher self-ratings of health, but not with disease activity suggesting that spirituality may play an independent role in helping individuals attend to positive elements in their life. Thus, in chronically ill persons, spiritual transcendence may reflect the tendency to experience more positive feelings and actively seek a broader sense of meaning and purpose of their illness. By viewing their illness in a positive context, having hope and optimism about the future, flexible life goals, and a supportive social network, spiritual individuals may be more resilient to the host of challenges imposed by chronic illness. As noted long ago in the Old Testament, "A merry heart doeth good like medicine; but a broken spirit drieth the bones" (Proverbs 17:22).

To our knowledge, this is the first study to link spirituality with positive affect and health perceptions in a chronically-ill population. However, our sample consisted mostly of older, white women with moderate RA who were being treated in a university-based clinic. Additional research is needed to confirm whether these findings translate to other chronic illnesses. Prospective studies are needed to determine if health perceptions are related to medical, psychosocial, or utilization outcomes.

In conclusion, consistent with previous studies, we found that disease activity was weakly associated with depressive symptoms, pain, poorer reports of health, and role limitations in a sample of RA patients. Spirituality was associated with happiness and positive health perceptions, even after controlling for disease activity and other

important covariates. Thus, spirituality is one of several known psychosocial variables that influence the course of health over an individual's lifetime. Spirituality may increase psychological and physiological resilience in the face of illness. Further research is needed to confirm these findings and identify mechanisms through which spirituality may influence coping, illness adjustment, and long-term outcomes.

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