

En las manos de Dios [In God's hands]: religious and other forms of coping among Latinos with arthritis

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Abstract:

This study tested a theoretical model concerning religious, passive, and active coping; pain; and psychological adjustment among a sample of 200 Latinos with arthritis. Respondents reported using high levels of religious coping. A path analysis indicated that religious coping was correlated with active but not with passive coping. Religious coping was directly related to psychological well-being. Passive coping was associated with greater pain and worse adjustment. The effects of active coping on pain, depression, and psychological well-being were entirely indirect, mediated by acceptance of illness and self-efficacy. These findings warrant more research on the mechanisms that mediate the relationship between coping and health. This study contributes to a growing literature on religious coping among people with chronic illness, as well as contributing to a historically under-studied ethnic group.

Keywords: religious coping | passive coping | arthritis | Latinos | theoretical models | active coping | psychological adjustment | pain

Article:

According to the 2000 Census, Latinos are now the largest ethnic minority group in the United States. There are currently 35.3 million Latinos in the United States, comprising 12.5% of the population (U.S. Census Bureau, 2001). As a group, Latinos have a worse socioeconomic status (SES) profile than non-Latino Whites (Ortiz, 1995). Lower social class contributes to the mortality and morbidity of many diseases, including osteoarthritis and rheumatoid arthritis (RA; Adler et al., 1994; Callahan & Pincus, 1995). Arthritis ranked second as the leading cause of activity limitation among Latinos in a recent national survey (Centers for Disease Control, 1996). Furthermore, among Latinos, the prevalence rate and proportion of persons with activity limitations are projected to increase markedly by 2020 because of increases in the average age of this population (Centers for Disease Control, 1996).

Sociodemographic and cultural factors can influence health behaviors, support systems, coping behaviors, and other interpersonal processes (Abraído-Lanza, Guier, & Colón, 1998). Interestingly, Latinos have better overall health than their social class profiles would predict

(Abraído-Lanza, Dohrenwend, Ng-Mak, & Turner, 1999). Yet, there is a great gap in knowledge concerning the factors that promote psychosocial adjustment and well-being among Latinos facing chronic illnesses such as arthritis. There is a paucity of knowledge, for example, concerning basic psychological, social, and other factors that enhance the mental and physical health of this population (Abraído-Lanza et al., 1998; Aguirre-Molina, Molina, & Zambrana, 2001; Bernal & Enchautegui-de-Jesús, 1994).

Studies of non-Latino Whites indicate that coping is an important psychological resource for dealing with pain and other stressful symptoms of arthritis. Despite an extensive literature on coping and adjustment among people with arthritis (see review by Manne & Zautra, 1992), research on ethnically diverse populations is sparse. Almost two decades ago, Cervantes and Castro (1985) noted the lack of research on coping and appraisal processes among Latinos. To date, there continues to be little research on whether Latino cultural nuances result in specific approaches to coping, especially among people with chronic illness. There is some evidence that religious coping is prominent among Latinos (e.g., Abraído-Lanza, Guier, & Revenson, 1996; Connell & Gibson, 1997; Ell & Haywood, 1985; Simoni & Ortiz, 2003). Little is known, however, about the extent to which religious and other forms of coping are associated with psychosocial adaptation among Latinos with arthritis.

Religious coping involves the use of cognitive or behavioral strategies that are based on religious beliefs or practices (e.g., praying, seeking comfort or strength from God). Many studies have found that religious coping has positive effects on mental and physical health during stressful periods (see Pargament, 1997). Whether comparable effects occur among people with arthritis, an ongoing, painful, chronic illness, is not clear.

Unfortunately, coping theory and research historically have neglected religious forms of coping. To date, there are very few studies on religious coping in arthritis populations and even fewer studies of culturally diverse groups. Moreover, existing knowledge of religious coping among these groups is hampered by limited measures. In many arthritis studies, religious coping is assessed with only a few (e.g., two to three) items. Typically, these items are combined with other coping strategies to create a factor score, making it difficult to assess the independent effects (if any) of religious coping on mental and physical health. A handful of arthritis studies, however, measured the separate effects of religious coping on health outcomes. In a study of non-Latino White individuals with rheumatoid arthritis, researchers found that, after they controlled for pain, religious coping showed cross-sectional but not longitudinal relationships with greater physical disability (Smith, Wallston, Dwyer, & Dowdy, 1997), possibly suggesting that people turn to religion when they experience greater disease activity. Religious coping was not, however, related to psychological adjustment in either cross-sectional or longitudinal analyses. Another cross-sectional study of people with connective tissue disease (Malcarne & Greenbergs, 1996) found no relationship between religious coping and psychological adjustment. Finally, two studies that used a 30-day diary methodology have provided mixed results. One study of people with RA and osteoarthritis found no effect of religious coping on the following day's pain or negative affect (Affleck et al., 1999). However, in another study of RA patients, religious coping was associated with greater positive mood (Keefe et al., 2001).

There is virtually no research on religious or other forms of coping among Latinos with arthritis. Studies of nonarthritis populations indicate that Latinos use religion (e.g., prayer), more frequently than do non-Latino Whites (Connell & Gibson, 1997; Ell & Haywood, 1985). Educational and other SES disparities between these groups do not account for the differences in religious coping (Valle, 1994). We have been able to identify only one published report on coping among Latinos with arthritis, and that study provided predominantly descriptive data (Abraído-Lanza et al., 1996). In that qualitative study of 109 Latina women, engaging in activities was the most commonly reported coping strategy, followed by religious coping. Religiosity and spirituality as cultural values have been noted in other studies of Latinos (Guarnaccia, Parra, Deschamps, Milstein, & Nuri, 1992; Rojas, 1996). There is evidence that (among non-Latino Whites) the benefits of religious coping on well-being are greatest among groups for which religiosity is a central value (Pargament, Tarakeshwar, Ellison, & Wulff, 2001). Importantly, a recent study found that spirituality (assessed as spiritual beliefs and religious coping) was associated with decreased depressive symptoms among Puerto Rican women coping with HIV (Simoni & Ortiz, 2003). However, there are no published studies on the relationship between religious and other forms of coping and health among Latinos with arthritis. One of the aims of this study, therefore, was to address this gap in the literature.

Is Religion a Passive Form of Coping?

In arthritis research, coping strategies are sometimes categorized as “passive” or “active.” Passive strategies include restricting activities because of pain, catastrophizing or venting emotions, and wishful thinking. Active strategies involve attempts to function in spite of pain, ignoring or diverting attention away from pain, and staying busy and active (Manne & Zautra, 1992).

The construct of religion as a coping strategy among Latinos—as well as among other populations—deserves further study. Qualitative and descriptive studies of Latinos indicate that prayer is an active form of seeking help (Guarnaccia et al., 1992). Latina women with arthritis have reported that their religious beliefs helped them to *luchar* (fight) against the illness. They described how their faith in God helped them overcome severe pain and take command of their disease (Abraído-Lanza et al., 1996). Yet, coping theory, which is traditionally based on non-Latino populations, frequently conceptualizes religion as a form of passive or palliative coping (e.g., Carver, Scheier, & Weintraub, 1989; Lazarus & Folkman, 1984)—and these are considered less effective than active strategies. The assumption that religion reflects a passive form of coping has been questioned, however. Pargament and Park's (1995) review concluded that there was a lack of evidence for the proposition that religiosity is associated with passivity. For example, in many (although not all) factor analyses of coping scales, religious coping items do not load on avoidant but rather on positive reappraisal or active coping factors. They did, however, emphasize the distinction between “control *by* God” and “control *with* God,” noting that, “The sense of partnership with God is empowering; through interaction with the divine, the individual feels a greater sense of personal power and efficacy” (Pargament & Park, 1995, p. 25).

The conceptual ambiguity concerning the construct of coping, especially among Latino populations, requires further study. Specifically, is religious coping a passive or active form of coping? Does it constitute a distinct way of dealing with health-related problems? One of the

goals of the present study was to address these questions. We hypothesized that among Latinos with arthritis, the construct of coping constitutes distinct factors composed of passive, active, and religious forms of coping. Items assessing religious forms of coping will not load on the same factor as those measuring passive strategies.

Coping and Well-Being: Mediating Mechanisms

Various mechanisms have been proposed to explain the relationship between religiosity and health (George, Ellison, & Larson, 2002). These include, among others, behavioral (e.g., prescriptions for healthy and proscriptions against risky behaviors) and cognitive mechanisms. In the context of coping with arthritis, two cognitive processes are particularly relevant. First, religion is hypothesized to enhance a sense of control over stressful events (Dull & Skokan, 1995). For the faithful, for example, prayer is a way of exerting some influence over the course of events (by achieving a sense of closeness with God or asking for divine intervention) or of gaining strength to tolerate hardship. Second, religion provides a sense of purpose and meaning for disturbing events or chronic adversity. Events are reinterpreted in terms of a greater purpose, “grander plan,” or simply as “meant to be” (Dull & Skokan, 1995, p. 55). In the context of a chronic disease such as arthritis, the sense of meaning may be defined in terms of accepting illness as part of an overall plan or purpose. Religious coping, therefore, may enable individuals to gain a sense of mastery or self-efficacy over their illness and acceptance of their condition as part of a greater plan.

There is a paucity of research, however, testing these mechanisms. The few studies that specifically tested mediation have yielded mixed results. In one study of bereaved non-Latino parents, religion contributed to finding meaning in the child's death, which in turn predicted psychological well-being 18 months later (McIntosh, Silver, & Wortman, 1993). In a study of individuals undergoing kidney transplantation (Tix & Frazier, 1998), religious coping predicted life satisfaction (but not psychological distress) 12 months after the surgery. This effect, however, was not mediated by perceived control or cognitive restructuring of the event. Both of the studies examined mediation in the context of an acute event, but there is a lack of research testing these mechanisms in coping with chronic, ongoing illness. A recent study of Puerto Rican women living with HIV found that self-esteem and a sense of mastery mediated the relationship between religiosity and depressive symptoms (Simoni & Ortiz, 2003). In the context of arthritis, a chronic illness with no known cure, religious coping may help individuals to gain a sense of self-efficacy over the illness and to accept the chronic nature of the disease. These cognitive mechanisms may, in turn, lead to enhanced psychological well-being.

There is also a lack of research on the mechanisms that mediate the relationship between passive and active coping strategies, pain, and psychological adjustment among people with arthritis. In several studies, passive strategies are related to worse mental health and greater pain (Brown & Nicassio, 1987; Felton & Revenson, 1984; Malcarne & Greenbergs, 1996; Parker et al., 1988; Zautra et al., 1995). Findings are inconsistent, however, as to whether active strategies predict psychological adjustment and pain (Manne & Zautra, 1992). Longitudinal studies of non-Latinos with arthritis have indicated that active and passive strategies differentially predict psychological well-being, even after controlling for prior levels of pain and psychological adjustment (Brown, Nicassio, & Wallston, 1989; Hampson, Glasgow, & Zeiss, 1996; Revenson

& Felton, 1989). In some studies, however, neither passive nor active coping predicted pain (Hampson et al., 1996). Interestingly, there is some evidence that passive and active coping are differentially related to other variables (such as self-efficacy; e.g., Brown & Nicassio, 1987), which in turn, are associated with better outcomes. There is limited research, however, on potential mediators of the relationship between different forms of coping and well-being.

A Theoretical Model

The final purpose of this study, therefore, was to test a number of hypothesized paths between religious, passive, and active coping and acceptance of illness, self-efficacy, pain, and psychological adjustment (see Figure 1). On the basis of prior research with Latinos (Abraído-Lanza et al., 1996; Guarnaccia et al., 1992), as well as on the basis of theoretical assertions and empirical evidence from studies of non-Latinos (Pargament & Park, 1995), we predicted that religious coping would be correlated with active coping but not with passive coping and that passive and active coping would be negatively related (see Correlations a and b in Figure 1). Furthermore, on the basis of theoretical models (e.g., Dull & Skokan, 1995), we predicted that religious coping would contribute to greater acceptance of the illness (Path c), and to an increased sense of control or self-efficacy over arthritis (Path d). These, in turn, would lead to decreased pain and psychological distress, specifically, depressive symptoms, and greater psychological well-being (Paths e through j). On the basis of prior research findings, we further predicted that acceptance of illness and self-efficacy would mediate the relationships between passive and active coping and between pain, depression, and psychological well-being. Passive coping predicts less acceptance of illness (Path k; Evers et al., 2001; Felton & Revenson, 1984) and lower self-efficacy (Path l; Brown & Nicassio, 1987). We also hypothesized that active coping would be associated with greater acceptance of illness (Path m). Although active coping did not predict acceptance in one study of people with chronic illness (Felton & Revenson, 1984), subsequent studies of chronic pain patients (Turner, Clancy, & Vitaliano, 1987) and people with chronic illnesses including arthritis (Evers et al., 2001) documented relationships between active coping and acceptance. We further anticipated that, as has been shown in previous studies (e.g., Brown & Nicassio, 1987), active coping would be related to greater self-efficacy (Path n). Prior research also indicates that passive coping predicts greater pain and worse psychological adjustment, whereas active coping relates to better mental health (e.g., Brown & Nicassio, 1987). However, these studies have not tested mediating effects. The overall pattern of results in prior studies suggests that acceptance of illness and self-efficacy are potential mechanisms by which passive, active, and religious coping may affect pain, depressive symptoms, and psychological well-being. Therefore, we tested these potential mediators in a sample of Latinos with arthritis.

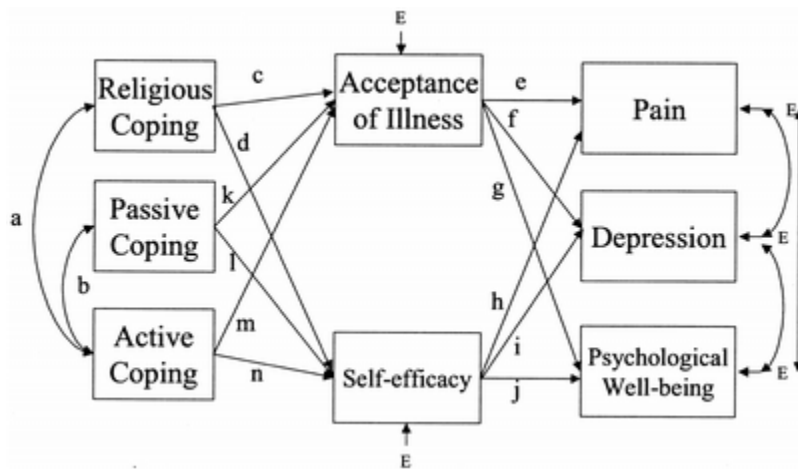


Figure 1. Full theoretical model with hypothesized paths. Correlations among variables are represented by lines with double-headed arrows. Paths (i.e., effects of particular variables on others) are shown with single-headed arrows. Error terms are shown as Es. The model predicts that religious coping is correlated with active but not with passive coping and that passive and active coping are negatively related (Correlations a and b). Religious, passive, and active coping predict acceptance of and self-efficacy over arthritis (Paths c, d, and k to n). Acceptance and self-efficacy, in turn, lead to decreased pain and depression, and greater psychological well-being (Paths e through j)

Method

Procedure

Respondents were recruited from several ambulatory care clinics, including a rheumatic disease specialty clinic and a general and internal medicine clinic, of a major New York City hospital that serves a large Latino population. Eligibility criteria were age of 18 years or older, Hispanic ethnicity (defined as individuals of Puerto Rican, Mexican, Cuban, South or Central American, or other Spanish-speaking culture or origin), and self-reported diagnosis of rheumatic disease. The study's purpose and procedures were explained using standard informed consent procedures. All patients who agreed to participate in the study were given a copy of the consent form to keep.

A total of 265 patients were asked to participate in the study. Sixty-five individuals (25%) declined participation. Reasons for declining to participate included not feeling well, hearing disabilities, and insufficient time for completing the interview. Therefore, the total sample consisted of 200 participants.

Data were collected with a structured face-to-face interview. Most interviews (98%) were conducted at the clinic, either before or after participants' appointments. To accommodate their requests, interviewers conducted a small number of interviews ($n = 4$) in respondents' homes. Interviews were conducted in the respondents' language of choice. The majority (97.5%) were completed in Spanish. The average interview lasted 35 min. Respondents were paid \$15 for their participation.

Participants

Table 1 presents the sample characteristics of the 200 participants, 89.5% of whom were women. Most participants had RA (39%); the remainder had systemic lupus erythematosus (SLE) or osteoarthritis (10% each), or some other form of arthritis. A total of 29 respondents (15%) had more than one type of rheumatic disease. In the majority of these cases ($n = 27$) one of the diagnoses included RA, SLE, or both. The average respondent had been ill for approximately 10 years.

Table 1
Sample Characteristics ($N = 200$)

Characteristic	<i>n</i>	%	<i>M</i>	<i>SD</i>
Diagnosis ^a				
Rheumatoid arthritis	78	39.0		
Lupus	20	10.0		
Osteoarthritis	20	10.0		
Other arthritis ^b	21	10.5		
More than one type	29	14.5		
Place of birth				
Dominican Republic	137	68.5		
Puerto Rico	30	15.0		
United States ^c	10	5.0		
Cuba	10	5.0		
Central or South America	12	6.0		
Disease duration (years)			9.69	9.39
Length of U.S. residence ^d			27.33	12.71
Age (years)			55.96	13.51
Education (years)			8.32	3.95

^a Diagnosis data were self-reported. ^b Other diagnoses included osteoporosis ($n = 13$), fibromyalgia ($n = 5$), scleroderma ($n = 2$), and arteritis ($n = 1$). ^c Family country of origin for U.S.-born respondents was Puerto Rico ($n = 8$); other ($n = 2$: Colombia and the Dominican Republic; Mexico and El Salvador). ^d Years spent in United States for all respondents.

Most respondents (95%) were foreign born. Reflecting the demographic characteristics of the hospital's catchment area in upper Manhattan, two thirds of the sample (69%) was from the Dominican Republic. The average respondent had been residing in the United States for 27.3 years, with a range from less than 1 year to 68 years. The average respondent was middle-aged ($M = 55.9$, range: 21–87 years) and had 8.3 years of education. Most participants were either currently unemployed because of disability (69.5%) or retired (12%). Most (80.5%) had incomes of less than \$10,000 per year.

Measures

Instruments were administered in either Spanish or English. Spanish versions of the self-efficacy and pain instruments used in the present study were developed by the Stanford Patient Education Research Center for the Spanish Arthritis Self-Management Program (SASMP). The measures were translated for use with various Hispanic subgroups, avoiding region-specific phrases and terminology that may not be common among other subgroups, and made using a highly effective back-translation procedure. Details concerning the translation and validation of the measures can be found in González, Stewart, Ritter, and Lorig (1995).

A research team in New York City developed the Spanish versions of the Acceptance of Illness, Psychological Well-being and Coping Scales used in this study. A back-translation technique using two iterations with four independent translators was used, as recommended by Marín and Marín (1991). The English version was translated into Spanish by Translators A and B, working independently. Translators C and D, working separately, then translated the scales back to English. Discrepancies between versions were settled by Ana F. Abraído-Lanza, consulting with one or more team translators. In addition, pilot tests were conducted to ensure that participants understood questionnaire items. On the basis of pilot test results, a small number of items were revised to ensure the accuracy and understandability of items.

Finally, the Spanish version of the depression inventory used in this study was developed and validated by the National Center for Health Statistics. The scale was used in the Hispanic Health and Nutrition Examination Survey and validated for use among Latinos with arthritis by the SASMP group (González et al., 1995).

Self-efficacy

Control over illness was operationalized as general feelings of self-efficacy or beliefs about performance capabilities. We used a six-item measure developed for people with arthritis (Lorig, Chastain, Ung, Shoor, & Holman, 1989). The scale assesses the extent to which the respondent believes he or she is able to control pain and continue daily tasks despite pain (e.g., “How certain are you that you can continue most of your daily activities?,” “How certain are you that you can keep arthritis pain from interfering with the things you want to do?”) using a 10-point response format (from 1 = *very uncertain* to 10 = *very certain*). Responses are summed, with higher scores representing greater self-efficacy. The scale shows excellent psychometric properties in Latino samples (González et al., 1995). Internal consistency reliability (Cronbach's alpha) for the scale in this study was .87.

Acceptance of illness

Participants' acceptance of their illness was measured with nine items drawn from Linkowski's (1971) Acceptance of Disability Scale, which was used in a study of people with chronic illness (Felton & Revenson, 1984) and arthritis (Revenson & Felton, 1989). Items from this scale have also been used to assess the spiritual component of the ability to find meaning in chronic illness and disability (Fitchett, Rybarczyk, DeMarco, & Nicholas, 1999). The measure assesses willingness to accept the illness, and feelings of worth despite illness (e.g., “I am content with the things I can and cannot do”; “I have a hard time adjusting to the limitations of my illness”; “My health makes me feel inadequate”), rated on a 5-point response format (from 1 = *strongly agree* to 5 = *strongly disagree*). Responses are summed so that a high score represents higher acceptance of illness. Cronbach's alpha for the scale was .74 in the present study.

Pain

Patients' pain was measured with a six-item instrument used in the Medical Outcome Study (Sherbourne, 1992) to assess frequency and intensity of pain over the past 4 weeks (e.g., “During

the past four weeks, how often have you had pain?”). The six items are summed, with high scores indicating more severe pain. The scale has been validated on and shows excellent reliability in samples of Latinos with arthritis (Abraído-Lanza, 1997; González et al., 1995). In the present study, Cronbach's alpha for the scale was .85.

Psychological Adjustment

Because psychological well-being and ill-being constitute different dimensions of psychological adjustment (Deiner, 1984), two measures were used to assess adjustment. Psychological well-being was assessed with the Index of Affect, which was used in two large-scale national surveys (Andrews & Withey, 1976; Campbell, Converse, & Rogers, 1976). This eight-item semantic differential scale assesses feelings about life as a whole (e.g., boring-interesting, enjoyable-miserable), with high scores indicating greater psychological well-being. Depressive symptoms were measured with the 20-item Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977). Both the Index of Affect and CES-D showed high reliability in a study of Latinos with arthritis (Abraído-Lanza, 1997), and the CES-D, in particular, has been validated in several studies of Latinos with arthritis (e.g., González et al., 1995). In this study, Cronbach's alpha reliabilities were as follows: psychological well-being, .81; depression, .90.

Coping

Focus was placed on selecting a coping scale that (a) was validated on arthritis populations, (b) assesses coping in response to a specific arthritis symptom (i.e., pain), and (c) measures the major coping themes identified in a prior study of Latinos with arthritis (Abraído-Lanza et al., 1996). Criteria (a) and (b) are recommended as remedies for measurement problems that may account for the inconsistent research findings concerning the effects of active coping on mental and physical health outcomes (see Manne & Zautra, 1992). Criterion (c) assures that the scale taps culturally meaningful coping strategies.

On the basis of these criteria, coping was assessed with the Coping Strategies Questionnaire (CSQ; Rosenstiel & Keefe, 1983). The CSQ assesses the extent to which respondents use a number of strategies to cope with chronic pain, a common symptom of arthritis. The CSQ has been used extensively in arthritis research (Manne & Zautra, 1992), and it demonstrates excellent psychometric properties in these samples (e.g., Keefe et al., 1987). It contains a total of seven subscales, three of which were used in the present study. Passive coping was assessed with four items from the Catastrophizing subscale (e.g., “It's awful and I feel that it overwhelms me”). Two items from the Catastrophizing subscale were not used. The first item (“I feel my life isn't worth living”) was omitted because of its similarity to depressive symptoms. Although the CSQ Catastrophizing subscale has been criticized as being confounded with depression, there is evidence that catastrophizing is distinct from depression (see review by Jensen, Turner, Romano, & Karoly, 1991). Evidence for the discriminant validity of catastrophizing is found, for example, in longitudinal studies that document an independent effect of catastrophizing on depression, even after controlling for initial levels of depressive symptoms (e.g., Keefe, Brown, Wallston, & Caldwell, 1989). A second catastrophizing item (“I worry all the time about whether it will end”) was omitted to reduce the time burden on participants. Active coping was measured with the six-item Increasing Behavioral Activities subscale (e.g., “I leave the house and do something, such

as going to the movies or shopping”). The CSQ scale contains a six-item Praying/Hoping subscale, which includes three religious coping items (e.g., “I pray for the pain to stop”). Because the present study specifically focuses on religious coping, the hoping items were not used. Instead, we used three additional items from the Use of Religion subscale of the Vanderbilt Multidimensional Pain Coping Inventory (VMPCI; Smith et al., 1997): “I seek God's help,” “I put my trust in God,” and “I try to find comfort in my religion.” (A fourth item from the VMPCI Use of Religion subscale, “Pray more than usual,” was not used, as it is very similar to the “I pray for the pain to stop” item in the CSQ.) Like the CSQ, the VMPCI is specific to pain and has been validated on and shows high reliability in samples of people with arthritis (Smith et al., 1997). The factor structure of the coping measure and reliabilities of subscales are described in the Results section.

Data Analyses

To test the theoretical model, we conducted a path analysis with EQS version 5.7 software (Bentler, 1995). This method is more advantageous than hierarchical multiple regression analyses. Path analyses can simultaneously test the effects of independent variables on various dependent variables in one model as well as test direct and indirect (mediating) effects. Furthermore, the fit of different models to the data can be compared.

The path model contained 22 parameters to be estimated: variances of 3 independent variables (religious, passive, and active coping), 12 regression (path) coefficients, 2 covariances (i.e., correlations between religious coping and active coping and between passive coping and active coping), and 5 error variances for dependent variables (acceptance of illness, self-efficacy, pain, depression, and psychological well-being). For sufficient statistical power, a minimum of 5 participants per parameter has been proposed as a general guideline (Bentler, 1995). Thus, a sample size of 200 was adequate for testing the proposed model.

Goodness of fit was evaluated with the comparative fit index (CFI), as it avoids fit underestimation in small samples (Bentler, 1990). For models that were inadequately specified, post hoc modifications were incorporated. Lagrange multiplier modification indices were used to determine which path, if added to the model, would promote fit (Bentler, 1995; Byrne, 1994). Only theoretically meaningful paths were added. After modifying and reestimating the model, the change in chi-square and CFI were evaluated to determine model fit. Finally, to yield a parsimonious model, nonsignificant parameters were eliminated based on Wald test results.

Results

Principal-Components Analysis of Coping Items

We conducted a principal-components analysis on the coping items using an orthogonal rotation with three factors specified. The factors explained 52% of the total variance. The structure of the factors was as expected (see Table 2). Items assessing religious, passive/catastrophizing coping, and behavioral activities/active coping formed separate factors, as evidenced by loadings above .45 on one factor, and loadings of less than .30 on secondary factors. We labeled these factors Religious Coping, Passive Coping, and Active Coping.

Table 2
Factor Loadings of Items in the Coping Measure

Coping	1	2	3
1. Religious Coping			
I seek God's help. [VMPCI]	.82	-.06	.09
I pray to God it won't last long.	.76	.18	.14
I try to find comfort in my religion. [VMPCI]	.75	.05	.23
I pray for the pain to stop.	.74	.23	.03
I rely on my faith in God.	.71	-.17	.12
I put my trust in God. [VMPCI]	.68	-.12	.13
2. Passive Coping/Catastrophizing			
It's awful and I feel that it overwhelms me.	-.09	.79	-.18
I feel I can't stand it anymore.	.07	.78	-.07
It's terrible and I feel it's never going to get any better.	.03	.75	-.02
I feel like I can't go on.	-.15	.67	-.04
3. Increasing Behavioral Activities/Active Coping			
I do something active, like household chores or projects.	-.04	-.29	.65
I try to be around other people.	.20	.14	.64
I leave the house and do something, such as going to the movies or shopping.	-.14	-.11	.61
I do anything to get my mind off the pain.	.28	-.03	.57
I do something I enjoy, such as watching TV or listening to music.	.19	-.01	.56
I read.	.22	-.15	.47

Notes. Items loading greater than .45 are shown in boldface. VMPCI = the Vanderbilt Multidimensional Pain Coping Inventory. VMPCI items are from "Beyond Good and Bad Coping: A Multidimensional Examination of Coping With Pain in Persons With Rheumatoid Arthritis," by C. A. Smith, K. A. Wallston, K. A., Dwyer, and S. W. Dowdy, 1997, *Annals of Behavioral Medicine*, 19, p. 13. Copyright by Erlbaum. Reprinted with permission. Other items are from "The Use of Coping Strategies in Chronic Low Back Pain Patients: Relationship to Patient Characteristics and Current Adjustment," by A. K. Rosentiel and F. J. Keefe, 1983, *Pain*, 17, p. 35. Copyright by Elsevier. Reprinted with permission.

Religious, passive and active coping scores were calculated for each participant by averaging across items in each factor. Reliabilities (Cronbach's alpha) for these scales were as follows: Religious Coping,.84; Passive Coping,.76; and Active Coping,.64.

Descriptive Statistics and Bivariate Analyses

The sample consisted of Latinos with various forms of arthritis (predominantly RA), all of which are characterized by pain. We examined whether type of diagnosis was associated with any of the predictors, mediators, or outcomes in this study to determine whether it would be necessary to adjust for type of rheumatic disease. A one-way analysis of variance of each of the key variables to be analyzed in this study indicated that self-efficacy, acceptance of illness, pain, depression, and psychological well-being did not vary as a function of diagnosis, nor did any of the coping strategies (all *F*s *ns*).

Descriptive statistics and the bivariate correlations among coping, self-efficacy, acceptance of illness, pain, and measures of psychological adjustment are shown in Table 3. Cronbach's alphas for each measure are shown in the diagonal of the table.

Table 3

Intercorrelations, Means, and Standard Deviations of Coping, Self-Efficacy, Acceptance of Disability, Pain, and Psychological Adjustment

Measure	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>
1. Religious Coping	.84								5.32	1.01
2. Passive Coping	.06	.76							3.10	1.60
3. Behavioral/Active Coping	.33***	-.21**	.64						3.18	1.27
4. Self-Efficacy	.12	-.36***	.32***	.87					31.51	14.00
5. Acceptance of Disability	.00	-.59***	.28***	.38***	.74				25.78	6.26
6. Pain	.06	.43**	-.18**	-.34***	-.42***	.85			33.50	7.83
7. Depression	-.03	-.55***	-.27***	-.38***	-.64***	.43***	.90		28.04	14.03
8. Psychological Well-Being	.15*	-.46***	.34***	.44***	.51***	-.39***	-.61***	.81	38.50	10.18

Note. Cronbach's alphas for each measure are shown in the diagonal of the table.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Respondents used high levels of religious coping, $M = 5.3$ ($SD = 1.0$), on a scale of 0 to 6. Passive coping was used less frequently, $M = 3.1$ ($SD = 1.6$), as was active coping, $M = 3.2$ ($SD = 1.3$).

The bivariate correlations indicated that, as anticipated, passive coping was related to greater pain and depression as well as to decreased psychological well-being. Passive coping was also related to decreased self-efficacy and acceptance of illness. In contrast, active coping was associated with less pain and depressive symptoms and with greater psychological well-being. In addition, active coping was related to self-efficacy and acceptance of illness. Of particular interest is that religious coping was correlated with greater psychological well-being. In addition, religious coping was associated with greater use of active but not of passive coping. Contrary to expectations, religious coping was not related to self-efficacy, acceptance of illness, or depression. The bivariate intercorrelations among self-efficacy, acceptance of illness, pain, and mental health measures were significant and in the expected direction.

Test of the Theoretical Model

We commenced by testing the direct paths illustrated in Figure 1. A model was specified whereby religious coping correlates with greater active but not passive coping and active coping correlates inversely with passive coping. Furthermore, religious, passive, and active coping predict acceptance of illness and self-efficacy, which in turn, predict pain, depressive symptoms, and psychological well-being.

The causal sequence hypothesized in the initial model indicated an adequate fit to the data, $\chi^2(11, N = 200) = 39.53, p < .001$; CFI = .94, but Lagrange multiplier tests suggested a modification to substantially increase model fit. This involved adding a direct path from passive coping to pain. Previous research on arthritis populations has documented that passive coping is associated with pain (Jensen et al., 1991; Keefe et al., 1989). Therefore, the path was incorporated and the model was reestimated.

The addition of this path substantially increased model fit, decreasing the chi-square value to 33.28 (10, $N = 200$), $p < .001$ ($\Delta\chi^2[1, N = 200] = 6.25, p < .02$). The CFI of .95 indicated that the model was better specified, but inspection of Lagrange modification indices revealed that model fit would be improved by adding an additional direct path from passive coping to depression.

Coping theory argues that passive coping is a “maladaptive” strategy because it is associated with psychological distress (i.e., depressive symptoms; Brown et al., 1989; Keefe et al., 1989; Manne & Zautra, 1992). Therefore, on the basis of prior empirical findings and on theoretical grounds, this modification was incorporated.

Adding a direct path from passive coping to depression improved model fit, reducing the chi-square value to 25.28 (9, $N=200$), $p < .003$ ($\chi^2[1, N=200] = 8, p < .01$), and yielding a CFI of .97. Lagrange multiplier tests, however, suggested adding a further path from passive coping to psychological well-being. Because this path is consistent with prior arthritis research findings that passive coping is associated with decreased positive affect (e.g., Zautra et al., 1995), as well as with theoretical assertions concerning the effects of passive coping on psychological adjustment (Manne & Zautra, 1992), the model was modified accordingly. This modification resulted in a better fitting model, $\chi^2(8, N=200) = 18.01, p < .02$ ($\chi^2[1, N=200] = 7.27, p < .01$), and yielding a CFI of .98.

Inspection of Lagrange multiplier tests indicated that one final path should be added to the model. This involved a direct path from religious coping to psychological well-being. Although there is a paucity of research on arthritis populations, religious coping is theorized to be associated with better mental health, and there is evidence that religious coping is related to psychological adjustment (see Pargament, 1997). On the basis of theoretical assertions and some prior empirical findings, the model was respecified with an additional direct path from religious coping to psychological well-being. This modification increased model fit, lowering the chi-square value to 12.44 (7, $N=200$), $p = .09$ ($\chi^2[1, N=200] = 5.57, p < .02$), and yielding a CFI of .99. The Lagrange multiplier tests did not identify any further paths to be added to the model.

Because a parsimonious model is preferable to one with more parameters (e.g., for replication purposes), we next examined Wald test results to identify nonsignificant paths that could be eliminated from the model. In selecting paths to be eliminated, the Wald test is more advantageous than relying on z -test statistics for individual paths. Whereas the latter reflects a univariate test for the individual path in question, the Wald procedure is a multivariate test for identifying a set of paths that can be eliminated without substantially degrading model fit (Bentler, 1995; Byrne, 1994). The Wald test identified two nonsignificant paths that could be dropped from the model. These involved the effects of religious coping on the mediating variables in the model: acceptance of illness and self-efficacy. The model was respecified, dropping these two nonsignificant paths, and reestimated. The resulting model maintained a good degree of fit to the data, $\chi^2(9, N=200) = 13.28, p = .15$; CFI = .99. The Lagrange multiplier test did not identify any other additional paths that would increase model fit, nor did the Wald test indicate further paths be dropped. Therefore, this model was accepted as best fitting the data.

Figure 2 illustrates direct effects of the final model. Pain, depressive symptoms, and psychological well-being were all predicted by acceptance of illness and self-efficacy. In addition, passive coping had a direct effect on pain, depression, and psychological well-being. Religious coping had a direct effect on psychological well-being. Contrary to expectations, religious coping did not have direct effects on acceptance of illness or self-efficacy. Passive and active coping were, however, directly related to acceptance of illness and self-efficacy in the expected direction. The model accounted for 24% of the variance in pain, 45% of the variance in

depression, and 36% of the variance in psychological well-being.

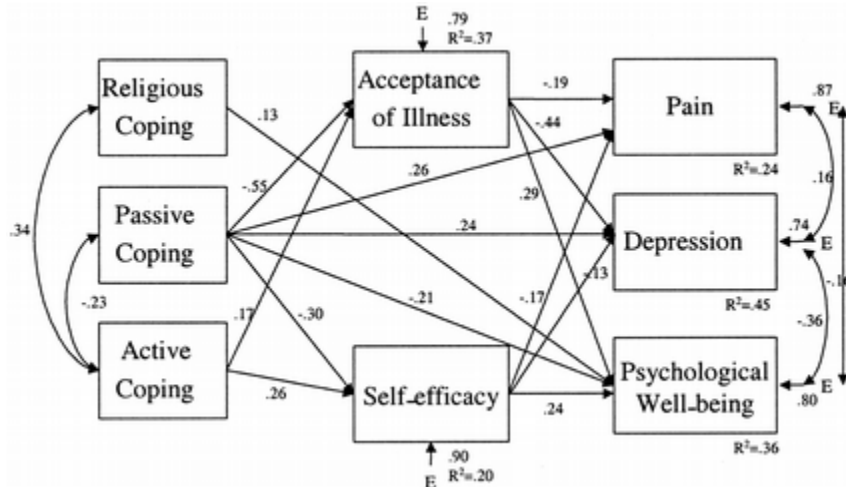


Figure 2. Final model: $\chi^2(9, N= 200) = 13.28, p = .15$, comparative fit index = .99. Correlations among variables are represented by lines with double-headed arrows. Paths (i.e., effects of particular variables on others) are shown with single-headed arrows. Error terms are shown as Es

We next examined indirect effects. The original theoretical model predicted that the effects of coping would be indirect, that is, mediated by acceptance of illness and self-efficacy. However, as noted above, religious coping had a direct effect on psychological well-being (note the lack of paths from religious coping to mediating variables). Passive coping also had direct effects on all three outcomes. Inspection of indirect effects, however, did indicate that acceptance of illness and self-efficacy mediated to some degree the effects of passive and active coping on pain and psychological adjustment. Passive coping had significant indirect effects on pain (.16), depression (.28), and psychological well-being (-.23). The effects of active coping on pain (-.08), depression (-.11), and psychological well-being (.11) were entirely indirect, mediated by acceptance of illness and self-efficacy.

Discussion

Our analyses clearly indicate that religion is an important form of coping for Latinos with arthritis. We found high levels of religious coping in our sample. These results complement those of a prior descriptive study of coping among Latina women with arthritis (Abraído-Lanza et al., 1996). In that study, 109 women were asked in an open-ended question to describe how they cope with their illness. Although engaging in activities was the most frequent response (mentioned by almost two thirds of the sample), religious coping was the second most frequently reported way of coping, named by about two out of every five respondents (38.1%) in the study.

Although not specifically designed to investigate coping, two other studies of Latinos indicate that religious coping is an important resource for dealing with arthritis. In a study of the self-care activities reported by ethnic groups to manage their arthritis, Bill-Harvey, Rippey, Abeles, and Pfeiffer (1989) used a checklist and found that 35% of Hispanics and 29% of Blacks reported using prayer at least once a week. However, the number of Latinos in that study was quite small

($N=23$). In a qualitative study of Latinos with arthritis, spiritual well-being emerged as an important component of quality of life (see Padilla & Perez, 1995).

One implication of these findings is that researchers studying coping and psychosocial processes among Latino populations should use scales that tap religious coping. Failure to do so may result in the oversight or misunderstanding of cultural mechanisms used in adapting to chronic illness.

Religion Is Not a Passive Form of Coping

One of the most significant findings of this study concerns the relationship between religious and active coping. As anticipated, religious coping was positively correlated with active but not with passive coping. This finding supports the hypothesis that religious coping is not a passive form of coping, and it challenges notions concerning the “passive” nature of religious strategies. Instead, religious coping is associated with active, action-oriented responses to pain. Similarly, qualitative studies of Hispanics indicate that prayer is an active form of seeking help (Guarnaccia et al., 1992). In one previous study of Latinas with arthritis (Abraído-Lanza et al., 1996), respondents indicated that they used prayer to actively cope with their illness. Women reported, for example, that by actively asking for help through prayer, God would assist them. These findings contradict coping theory, traditionally based on non-Latino populations, which considers religious coping to be a passive means of dealing with stress (e.g., Carver et al., 1989; Lazarus & Folkman, 1984). These assumptions have been questioned by scholars who argue that religion is an active means of coping (e.g., Pargament & Park, 1995). The present study contributes to the perspective that religious coping is not a form of passive coping, at least not in this population. It is notable, furthermore, that in this study, religious coping items loaded on a distinct, separate factor. This underscores the importance of including an adequate number of religious items in studies assessing coping with chronic illness.

Religious Coping, Pain, and Psychological Adjustment

Contrary to expectations, religious coping was not related to pain or depression. In addition, religious coping was not associated with self-efficacy or acceptance of illness. Religious coping was associated with greater psychological well-being, although the effect was modest ($\beta = .13$).

The few prior studies of religious coping among non-Latinos with arthritis have yielded mixed results. Some report cross-sectional relationships between religious coping and *increased* physical disability (Smith et al., 1997). However, prayer may be used during times of high disability. Consistent with this, longitudinal analyses have shown that the relationship disappears when controlling for earlier levels of disability (Smith et al., 1997). With the exception of one study (Keefe et al., 2001), relationships between religious coping and psychological adjustment have not been found in studies of people with arthritis (Affleck et al., 1999; Malcarne & Greenbergs, 1996; Smith et al., 1997). Results of the present study suggest that religious coping is associated with psychological *well-being*, but it is not associated with psychological *ill-being* (i.e., psychological distress).

The relationship between religious coping and mental and physical health among people with arthritis requires further study. Longitudinal analyses are especially needed. The cross-sectional

nature of this and other studies cannot address the direction or potential long-term effects of religious and other forms of coping on health. In addition, it would be important to study a variety of other religious coping strategies. The items used in this study tapped specific forms of religious coping (i.e., the use of prayer; the request for help from God; and religious faith, trust, and comfort) derived from scales that have been validated among people with arthritis, as well as in our prior work (Abraído-Lanza et al., 1996). However, individuals may also experience a number of other religious responses to stressful life circumstances, including feeling anger toward or punished by God, and there is evidence that these reactions are associated with worse psychological and physical well-being (Koenig, Pargament, & Nielsen, 1998; Pargament, Koenig, & Perez, 2000). Importantly, the results of our study do not eliminate the possibility that these other forms of religious coping are differentially associated with pain, psychological adjustment, acceptance, and self-efficacy among people with arthritis. These issues pose additional questions for future research.

Although there is a paucity of longitudinal research on religious coping, there are even fewer studies on coping among Latino populations. No comparable studies exist of Latinos coping with arthritis. There are, however, a handful of studies on religiosity and health among Latinos. These larger Latino community studies have not specifically examined chronic illness populations, and their focus has been on other measures of religiosity (e.g., participation in religious activities, such as church attendance) rather than on religious coping. It is important to note that religious coping is distinct from global *religiosity* (e.g., intrinsic or self-rated religiousness, church attendance). Religious coping predicts mental and other health outcomes even after controlling for global religiosity (Pargament, 1997), but most of this research has been based on non-Latino samples. Nevertheless, in the studies that examined religiosity among Latino community samples, there is some evidence that greater use of religion is related to decreased depression, although the relationship varies with acculturation status (Neff & Hoppe, 1993). In a large, three-generation community study of Mexican Americans, religiosity was related to several health indicators, such as lower hypertension (Levin & Markides, 1985). In addition, religious attendance showed positive cross-sectional relationships with mental health (i.e., greater life satisfaction), among older generations, and beneficial longitudinal effects in the youngest generation (i.e., lower depression), even after controlling for physical health (Levin, Markides, & Ray, 1996). The lack of a prospective relationship between measures of religious attendance and mental health may be due to the effects of functional disability, especially among older adults for whom physical limitations may prevent or restrict attendance of religious services (Levin & Markides, 1986; Markides, Levin, & Ray, 1987). Overall, the relationship between religious coping and health outcomes among Latinos has not been adequately studied, nor have the mechanisms linking coping to health.

The Mediating Role of Self-Efficacy and Acceptance of Illness: Implications for Coping Theory

Despite a rich history and literature on coping theory, with few exceptions (Cohen & Lazarus, 1979), there is little discussion of potential mechanisms by which coping is associated with mental health. In this study, self-efficacy and acceptance of illness mediated the effects of passive and active coping on pain and psychological adjustment.

Several theories of adaptation to chronic illness (e.g., Moos, 1982; Taylor, 1983) maintain that a sense of competence—specifically, self-efficacy and mastery—are essential to promoting psychological adjustment. Supporting these theories, studies of non-Latinos with arthritis indicate that feelings of self-efficacy over the illness play important roles in adjustment (DeVellis & DeVellis, 2001; Keefe et al., 2002; O'Leary, Shoor, Lorig, & Holman, 1988; Schiaffino & Revenson, 1992; Smith, Dobbins, & Wallston, 1991; Tennen, Affleck, Urrows, Higgins, & Mendola, 1992). This finding was replicated in a study of Latinas with arthritis (Abraído-Lanza, 1997). In the present study, self-efficacy was associated with less pain and depression and with greater psychological well-being. These results add to the literature documenting the important role of self-efficacy in psychological well-being among historically under-studied individuals with arthritis.

It is notable that in this study, the effects of active coping on pain, depression, and psychological well-being were entirely indirect. That is, the effects were mediated by self-efficacy and acceptance of illness. These findings may help to reconcile some inconsistent results observed concerning active coping and psychological adjustment among non-Latinos (see Manne & Zautra, 1992). Specifically, active coping may affect psychological and physical health by increasing self-efficacy and other illness cognitions (such as acceptance), which in turn, affect outcomes. The failure to examine mediating mechanisms may lead researchers to erroneously conclude that active coping plays an inconsistent or limited role in pain and mental health outcomes.

Acceptance is hypothesized to play an important role in adaptation to stressful circumstances (e.g., White, 1974). Consistent with these theoretical perspectives, in several studies of people with chronic health conditions, acceptance is associated with better mental health and less pain (e.g., Evers et al., 2001; Li & Moore, 1998; McCracken, 1998; Revenson & Felton, 1989). In this study, acceptance was associated with decreased pain and depression and with increased psychological well-being. Moreover, acceptance mediated the effects of active and passive coping on pain and psychological adjustment. These results suggest that greater attention should be directed toward studying acceptance among individuals with chronic illness. As described later, however, longitudinal studies on these issues are especially needed, as reverse-order hypotheses (that lower levels of pain are easier to accept) cannot be ruled out with cross-sectional data.

A number of mechanisms accounting for the beneficial effects of religious coping on mental and physical health outcomes have been proposed (e.g., Dull & Skokan, 1995; George et al., 2002; Jarvis & Northcott, 1987), but few studies have tested mediation effects. We expected, but did not find, that religious coping would result in greater acceptance of illness and self-efficacy, which in turn would predict decreased pain and better psychological adjustment. Instead, religious coping had a direct effect on psychological well-being. These results suggest that religious coping does not operate on psychological adjustment by means of beliefs about control over or acceptance of the illness. We should note, however, that in our study, respondents were specifically asked about the extent to which they use religious strategies (e.g., prayer) to cope with *pain*. Yet, our measure of acceptance tapped a broader cognition, acceptance of illness, rather than acceptance of pain. Nonetheless, our results are consistent with other studies that also failed to find mediating effects of other variables in the association between religious coping

(Tix & Frazier, 1998) or religiosity (McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000) and health outcomes. Combined, these studies suggest that religious coping may have unique effects on health and well-being, but more research is needed in this area, as there have been some published reports providing evidence of mediation (McIntosh et al., 1993; Simoni & Ortiz, 2003). As George et al. (2002) noted in their review of the literature on religious involvement and health, “Clearly, no conclusions are possible about the extent to which psychosocial resources mediate the effects of religious involvement on ... health outcomes. Additional research on this possible pathway by which religion promotes health is badly needed” (p. 195).

Our results indicate that more conceptual and empirical work should be conducted on acceptance of illness. The construct of acceptance of pain, in particular, has received surprisingly little research attention (McCracken, 1998). Our brief review of the available literature indicates that there is a great deal of conceptual ambiguity concerning acceptance. Whereas some of the literature classifies acceptance as a form of passive “giving up” (see Moos & Schaefer, 1993), our conceptualization is more in line with that of McCracken (1998) and others (Evers et al., 2001), who argue that acceptance entails acknowledging pain or illness, yet “getting on with life” despite the pain. As argued by noted stress and coping theorists,

[M]any sources of stress cannot be mastered, and effective coping under these conditions is that which allows the person to tolerate, minimize, *accept*, or ignore what cannot be mastered. (Lazarus & Folkman, 1984, p. 140, italics added)

Arthritis, an ongoing, often painful illness with no available cure, clearly qualifies as a source of stress that may not be mastered. It is interesting, therefore, that, with a few notable exceptions (e.g., Felton & Revenson, 1984; Revenson & Felton, 1989), acceptance has been ignored in psychosocial arthritis research. Instead, research on adaptation to chronic illness has been somewhat preoccupied by the concept of “denial.” We argue, however, that acceptance is distinct from denial. Acceptance is not the flip side—or absence—of denial, much as psychological well-being is not the mere absence of psychological distress. Although there have been recent attempts to develop better measures of acceptance and other illness cognitions (Evers et al., 2001), more work should be directed at the measurement of acceptance, the factors and processes that promote acceptance, and the impact of acceptance on adjustment to arthritis and other chronic conditions.

Finally, we would like to emphasize that, in this study, both self-efficacy and acceptance of illness predicted pain and psychological adjustment. Perhaps, as the prayer suggests, the recipe for adjustment to arthritis involves both the ability to overcome what can be changed (i.e., self-efficacy), and the wisdom to accept what cannot.

Limitations of the Study

Several limitations of the study must be acknowledged. First, the term *Latino* was used to describe the sample, but two thirds of the sample was from the Dominican Republic. There are demographic, socioeconomic, political, migrant status, and other differences between Latino groups (Ortiz, 1995) that could relate to variables in this study. Separate path analyses could not be conducted for the different Latino groups in this study, however, because of sample size

limitations. Nonetheless, in a prior descriptive study of Latinas with arthritis, roughly one half of whom were Puerto Rican women with a similar SES-profile as the respondents in this study, a high rate of religious coping was also found (Abraído-Lanza et al., 1996). Importantly, it should be noted that there is almost no research (on any topic) concerning Latinos from the Dominican Republic living in the United States. Therefore, what could be cited as a limitation of the study (in terms of generalizability to other Latino groups) is also a strength, in that it is contributing to a body of literature on a subgroup of Latinos for which there are literally almost no data. Second, reflecting the disproportionate rates of poverty among Latinos in the United States, the sample was predominantly of low SES. Limited income and education contributes to morbidity and mortality (Adler et al., 1994; Callahan & Pincus, 1995) and to reduced psychological well-being (Belle, 1990). Arthritis stressors may be relatively minor compared with the larger social problems that people with limited economic resources encounter on a daily basis. The extent to which the stress of poverty affected variables in the present study cannot be estimated. The SES confound also raises issues of generalizability to other Latino (and non-Latino) samples of different SES levels. Finally, this study used a cross-sectional design and path analysis. The words *effect* and *predict*, common path analytic terminology, were used to describe results. Causal directionality cannot be inferred, however, without longitudinal data, nor can the potential long-term effects of coping on pain and psychological adjustment.

Despite its cross-sectional design and other limitations, this study contributes to the understanding of psychosocial adjustment among a largely neglected research population, Latinas with arthritis, while simultaneously contributing to the literature on a somewhat controversial topic: religious coping and health. The results of this study indicate that, as the Spanish expression implies, putting oneself “en las manos de Dios” [in God's hands] is not a passive form of coping, and this response to illness is associated with better psychological well-being.

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