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ORIGINAL PAPER

Relationships Among Spirituality, Religious Practices, Personality Factors, and Health for Five Different Faith Traditions

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Abstract To determine: (1) differences in spirituality, religiosity, personality, and health for different faith traditions; and (2) the relative degree to which demographic, spiritual, religious, and personality variables simultaneously predict health outcomes for different faith traditions. Cross-sectional analysis of 160 individuals from five different faith traditions including Buddhists (40), Catholics (41), Jews (22), Muslims (26), and Protestants (31). Brief multidimensional measure of religiousness/spirituality (BMMRS; Fetzer in Multidimensional measurement of religiousness/spirituality for use in health research, Fetzer Institute, Kalamazoo, 1999); NEO-five factor inventory (NEO-FFI; in Revised NEO personality inventory (NEO PI-R) and the NEO-five factor inventory (NEO-FFI) professional manual, Psychological Assessment Resources, Odessa, Costa and McCrae 1992); Medical outcomes scale-short form (SF-36; in SF-36 physical and mental health summary scores: A user's manual, The Health Institute, New England Medical Center, Boston, Ware et al. 1994). (1) ANOVAs indicated that there were no significant group differences in health status, but that there were group differences in spirituality and religiosity. (2) Pearson's correlations for the entire sample indicated that better mental health is significantly related to increased spirituality, increased positive personality traits

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(i.e., extraversion) and decreased personality traits (i.e., neuroticism and conscientiousness). In addition, spirituality is positively correlated with positive personality traits (i.e., extraversion) and negatively with negative personality traits (i.e., neuroticism). (3) Hierarchical regressions indicated that personality predicted a greater proportion of unique variance in health outcomes than spiritual variables. Different faith traditions have similar health status, but differ in terms of spiritual, religious, and personality factors. For all faith traditions, the presence of positive and absence of negative personality traits are primary predictors of positive health (and primarily mental health). Spiritual variables, other than forgiveness, add little to the prediction of unique variance in physical or mental health after considering personality. Spirituality can be conceptualized as a characterological aspect of personality or a distinct construct, but spiritual interventions should continue to be used in clinical practice and investigated in health research.

Keywords BMMRS · Health · NEO-FFI · Personality · Religion · SF-36 · Spirituality

Introduction

There has been considerable interest in determining the relationships that exist among spiritual, religious, and health variables. However, research remains limited due to the lack of investigation of a full range of religious and non-religious variables that may be associated with health. For example, the majority of research conducted in this area to date has primarily investigated variables in isolation, including studies that have utilized only spiritual/religious variables versus those that have utilized only personality variables. However, Piedmont (2005) has specifically stated that for spiritual and religion variables to be useful in health outcomes research, it is necessary to demonstrate that these constructs possess predictive power over and above established personality constructs. In addition, the majority of research in this area has been conducted only with Christian populations (Gorsuch 1984; Moberg 2002). Comprehensive studies that investigate the relationships that exist among spirituality, religiosity, personality characteristics, and health variables are needed, and particularly for a sample of individuals from diverse faith traditions.

Spirituality, Religion, and Health

Research has clearly indicated that individuals who report being more religious and spiritual report better physical and mental health (Koenig and Cohen 2002; Koenig et al. 2001; Oxman et al. 1995; Powell et al. 2003). The specific mechanisms are unclear, although it has been hypothesized that these relationships are likely related to several religious and non-religious factors. It has been argued that spiritual and religious factors are sufficient in and of themselves to improve health (e.g., belief in a loving God, etc.), which is supported by research that suggests that religious and spiritual coping explains variance in health outcomes beyond that explained solely by psychological coping (Pargament and Brant 1998; Pargament et al. 1990, 1994). Conversely, it has been argued that the better health of religious individuals is most likely attributable to their lifestyle behaviors (e.g., less substance use and better dietary habits; King 1990), the increased social support that is typically provided by religious congregations (Taylor and Chatters 1988) and/or a positive worldview, which promotes well-being (McIntosh 1995).

Personality and Health

Research has also consistently indicated that personality variables are predictive of health outcomes (Piedmont 2005), with recent research focusing on the utility of the NEO-Five Factory Inventory (NEO-FFI; Costa and McCrae 1992) as a predictor of health. The NEO-FFI measures five distinct aspects of personality including neuroticism, extraversion, openness to new experiences, agreeableness, and conscientiousness. Health research using the NEO-FFI has indicated that low neuroticism is the strongest predictor of better quality of life, less anxiety, and lower levels of depression for persons with epilepsy (Endemann and Zimmermann 2009), while high neuroticism and low openness are predictive of poor mental health for persons with chronic health conditions (Jerant et al. 2008). Notably, NEO-FFI personality characteristics have been shown to be even more relevant to illness perceptions than indices of physical functioning in persons with lung transplants (Goetzmann et al. 2005).

The Relationship Between Spirituality and Personality in the Prediction of Health

There is growing interest in determining the specific nature of the relationships that exist among health outcomes, spiritual constructs, and personality variables. Of primary interest is whether or not spirituality merely reflects qualities of personality. Piedmont (2005) states that the most important issue to be addressed in this area of research is the need "to determine whether numinous constructs tell us something about people not already described by current personality measures" (p. 261). However, research in this area has been relatively sparse.

In general, personality has been conceptualized as a construct composed of relatively stable temperaments (e.g., novelty seeking, harm avoidance, extraversion, introversion, etc.) that are genetically inherited and biologically based. Spirituality has been more difficult to define and has been conceptualized in many ways, including description in both numinous (e.g., a subjective experience of the sacred; Zinnbauer and Pargament 2005) and psychological terms (e.g., an emotional connection with a higher power; Johnstone and Glass 2008). Although spiritual and personality constructs have generally been assumed to be distinct, spirituality has also been hypothesized to be a specific sixth dimension of personality (i.e., based on the five-factor model of personality; Piedmont 1999), and/or a characterological dimension of personality (Cloninger et al. 1993). Character has been conceptualized as a dimension of personality/temperament that structures how individuals perceive stimuli, which in turn influences how they consistently respond to their environment (Cloninger et al. 1993, 1994). Self-transcendence, a proposed dimension of spirituality, is an example of one type of character trait that is related to personality.

Several recent studies have attempted to determine the relationships that exist among personality, spirituality, and health using the NEO-FFI. For example, Halama and Dedova (2007) indicated that personality factors predict a greater proportion of variance in life satisfaction (42 %) compared to hope (8 %) and meaning (4 %). Similarly, decreased neuroticism and increased spirituality have both been shown to be related to improvement in irritable bowel symptoms (Debruin 2006), and increased spirituality, conscientiousness, and religious orientation have all been shown to be predictive of other health behaviors (Smith 2000). Piedmont (1999), using an older version of the NEO-FFI (i.e., NEO PI-R; Costa and McCrae 1992) and the spiritual transcendence scale, demonstrated that spiritual transcendence predicts unique variance in psychological constructs (e.g., internal health,

stress, social support, interpersonal orientation, prosocial behavior) beyond that predicted by personality factors.

To determine whether personality or spiritual variables are most predictive of mental health, a recent study (Lockenhoff et al. 2009) utilized a set of hierarchical regressions in which demographic/disease characteristics were entered as initial predictors of mental health, followed by either personality variables and then spiritual/religious variables, or spiritual/religious variables and then personality variables. Demographic/disease characteristics were not significant predictors in either regression. When personality variables were entered into the regression first, they predicted 35 % of the variance in mental health, whereas spiritual/religious variables did not significantly predict any additional variance. In the second hierarchical regression in which spiritual/religious variables were added first, they accounted for 21 % of the total explained variance in mental health. The subsequent addition of personality variables significantly predicted an additional 19 % of the explained variance. The authors concluded that any beneficial effects of spiritual/religious variables on mental health can at least be partially accounted for by the effects of underlying personality traits. These results clearly indicate that personality explains a greater proportion of variance in mental health outcomes than spiritual variables, suggesting the spirituality may be best conceptualized as a characterological dimension of personality.

Faith Traditions and Spirituality/Religiosity

Several researchers (Gorsuch 1984; Moberg 2002; Piedmont 2005) suggest that a major weakness in the majority of spirituality/religion research to date involves a primary focus on Christian samples. As a result, spirituality and health research will be limited in the ability to generalize findings until future studies include individuals from a broad range of diverse faith traditions.

Although the relationships among spirituality, personality, and health have not been determined for different faith traditions, past research has investigated the degree to which different faith traditions differ in terms of religious practices and intensity of spiritual beliefs. For example, research has indicated that Protestants report the highest levels of intrinsic religion (i.e., spirituality, or the importance of a personal relationship with God), Jews report being the most involved in extrinsic religion (i.e., religious rituals/activities), and Catholics endorse levels in between (Cohen and Hill 2007). These findings support general beliefs that Protestants often focus most on their personal relationship with God, and Jews focus most on religious practices and community activities. Although members of these different faith traditions report differing levels of spiritual intensity and religious activity, it is not clear how differences in these spiritual and religious variables may differentially relate to health. Given that research has shown that aspects of spirituality and religion are differentially related to physical health (Campbell et al. 2010) and mental health (Cohen et al. 2009) for individuals with chronic health conditions, further research is warranted to determine the different relationships that exist among spiritual, religious, and health variables among diverse faith traditions.

Basis for the Current Study

Piedmont (2005) has proposed several key empirical issues for future research to consider when investigating the relationships that exist among personality, spirituality, and health.

He specifically suggested the need to determine "to what degree are spiritual constructs merely the 'religification' of already existing personality constructs" (p. 266), as well as the need to include samples with diverse faith traditions. He specifically suggested the use of hierarchical regressions as one method to determine the unique value of spiritual and religious constructs in the prediction of psychological and health outcomes.

The current study consisted of two parts. The first proposed to determine whether five different, diverse faith traditions differ in terms of demographic, religious, spiritual, congregational support, personality, and health variables. The second proposed to determine the degree to which spiritual variables predict unique variance in health outcomes after considering demographic and personality variables for a sample of five diverse faith traditions.

Methods

Participants

The total sample included 160 individuals from the following faith traditions: Buddhists (B; $n = 40$) from the local Dharma center, Catholics (C; $n = 41$) from the university affiliated Newman Center, Jews (J; $n = 22$) from the local Reform synagogue, Muslims (M; $n = 26$) from the local Mosque, and Protestants (P; $n = 31$) from a local Methodist church. Participants were recruited from congregations of different faith traditions in a mid-sized Midwestern university city if they were at least 18 years old, spoke English, and were able to complete the questionnaires independently. Although the participants were considered to be non-clinical (i.e., recruited from faith centers), twenty-six percent of the participants self-reported a medical condition [i.e., primarily cancer (10), diabetes (7), hypertension (6), asthma (4), and heart disease (4)]. In addition, twelve percent self-reported psychological conditions [i.e., primarily including depression (14) and anxiety (7)]. Demographic characteristics of the sample are provided in Table 1. All tables note where missing data are evident.

Procedure

This study sought participants who identify and align themselves as active members of various faith traditions. Potential participants were contacted in their centers of worship (i.e., church, synagogue, mosque, dharma center) by a faculty member or a research staff member and asked to participate in the study. If individuals expressed an interest in the study, a one page written description of the research was provided and written informed consent was obtained per procedures approved by the university's institutional review board. Participants were asked to complete a research packet consisting of paper-and-pencil measures of spirituality/religion, personality, health status, and demographic information (i.e., gender, age, marital status, ethnic group, education, annual income). Respondents received $10 for their participation.

Measures

Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS)

The brief multidimensional measure of religiousness/spirituality (BMMRS) is a 38-item self-report survey with Likert scale formats designed by the Fetzer Institute and the

Table 1 Characteristics of the participants

Variable	Frequency	Percentage
Gender ($n = 157$)		
Male	55	35.0
Female	102	65.0
Age ($n = 157$)		
<31	35	22.3
31–40	15	9.6
41–50	35	22.3
51–60	42	26.7
>60	30	19.1
M = 47, SD = 16.5, range = 18–82		
Ethnicity ($n = 157$)		
Caucasian	125	79.6
African American	11	7.0
Hispanic	1	0.6
Asian/Pacific Islander	14	8.9
Middle Eastern	5	3.3
Bi-racial	1	0.6
Marital status ($n = 157$)		
Married	102	65.0
Divorced	11	7.0
Separated	1	0.6
Widowed	3	1.9
Single	40	25.5
Education ($n = 156$)		
High school diploma	25	16.0
Some college	6	3.8
College degree	48	30.8
Master's degree	39	25.0
Ph.D/J.D/M.D	38	24.4
Annual income ($n = 126$)		
Under $20,001	25	19.8
$20,001 to $40,000	30	23.8
$40,001 to $60,000	29	23.0
$60,001 to $80,000	19	15.1
Over $80,000	23	18.3
Religion ($n = 160$)		
Protestant	31	19.4
Catholic	41	25.5
Muslim	26	16.3
Buddhist	40	25.0
Jewish	22	13.8

National Institute on Aging (NIA) for use in health-related research (Fetzer Institute/NIA Working Group 1999). Any reference to "God" in original BMMRS items was changed to "higher power" for this study to make the measure more suitable for individuals of varied

faith traditions. Lower scores indicate a greater degree of religiosity or spiritual experience for all BMMRS scales.

Rather than describe the results based on the eight BMMRS subscales, it was decided to conceptualize the BMMRS subscales based on more general categories. Specifically, based on a recent factor analysis of the BMMRS (Johnstone et al. 2009), the BMMRS subscales were conceptualized as measuring three general areas including: *Spiritual experiences* (i.e., emotional experience of feeling connected to a higher power), *Religious practices* (i.e., culturally based behaviors/activities), and *Congregational support* (i.e., social support provided by fellow congregants).

BMMRS Spiritual Experience Subscales

Daily spiritual experience measures the individual's connection with a higher power in daily life (e.g., "I feel the presence of a higher power," "I desire to be closer to or in union with a higher power."). This subscale consists of 6 items rated on a 6-point response format, ranging from 1 (many times a day) to 6 (never). The Chronbach's alpha was 0.91.

Meaning measures a sense of purpose or meaning in life (e.g., "The events in my life unfold according to a divine or greater plan," "I have a sense of mission or calling in my own life."). This subscale is composed of 2 items with a 4-point response format, ranging from 1 (strongly agree) to 4 (strongly disagree). The Chronbach's alpha was 0.75.

Values/beliefs measures religious values and beliefs (e.g., "I feel a deep sense of responsibility for reducing pain and suffering in the world," "I believe in a higher power who watches over me."). This subscale is composed of 2 items with a 4-point response format, ranging from 1 (strongly agree) to 4 (strongly disagree). The Chronbach's alpha was 0.72.

Forgiveness measures the degree to which individuals forgive others, and the degree of belief in the forgiveness of a higher power (e.g., "I have forgiven those who hurt me," "I know that I am forgiven by a higher power."). The subscale consists of 3 items rated on a 4-point response format, ranging from 1 (always) to 4 (never). The Chronbach's alpha was 0.81.

Religious/spiritual coping purportedly measures religious and spiritual coping strategies (e.g., "I work together with a higher power as partners," "I look to a higher power for strength, support, and guidance."). Although its title suggests it measures both "religious" and "spiritual" coping, a previous factor analytic study indicates that items from this scale load on spirituality factors (Johnstone et al. 2009). As a result, for the purposes of this study, it was conceptualized as a "spiritual" subscale. This subscale consists of 7 items with a 4-point response format, ranging from 1 (a great deal) to 4 (not at all). The Chronbach's alpha was 0.85.

BMMRS Religious Practices Subscales

Private religious practices measures the frequency of religious behaviors (e.g., "Within your religious or spiritual tradition, how often do you meditate?" "How often do you watch or listen to religious programs on TV or radio?"). This subscale is composed of 5 items with an 8-point response format, ranging from 1 (more than once a day) to 8 (never). The Chronbach's alpha was 0.69.

Organizational religiousness measures the frequency of involvement in formal public religious institutions (e.g., "How often do you go to religious service?" "Besides religious service, how often do you take part in other activities at a place of worship?"). This

subscale consists of 2 items with a 6-point response format, ranging from 1 (more than once a week) to 6 (never). The Chronbach's alpha was 0.88.

Congregational Social Support Subscale

Religious support measures the degree to which individuals perceive that their local congregations as providing help, support, and comfort (e.g., "If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation be willing to give you?"). This subscale is composed of 4 items and a 4-point response format was used, ranging from 1 (very often) to 4 (never). The Chronbach's alpha was 0.73.

NEO-Five Factor Inventory (NEO-FFI)

The NEO-five factor inventory (NEO-FFI; Costa and McCrae 1992) is a 60-item measure of five common personality traits, with each of the five scales composed of 12 items. Items are rated on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5), with higher scores indicating a higher degree of the personality trait.

Neuroticism This scale measures anxiety, hostility, anger, depression, self-consciousness, and vulnerability (e.g., "When I'm under a great deal of stress, sometimes I feel like I'm going to pieces," "I often feel tense and jittery."). The Chronbach's alpha was 0.87.

Extraversion This scale includes items that assess warmth, gregariousness, assertiveness, and activity level (e.g., "I really enjoy talking to people," "I am a cheerful, high-spirited person."). The Chronbach's alpha was 0.84.

Openness This scale includes items that assess openness to new experiences, imagination, ideas, and values (e.g., "I believe we should look to our religious authorities for decisions on moral issues" (reverse scored), "I have a lot of intellectual curiosity."). The Chronbach's alpha was 0.91.

Agreeableness This scale measures items reflective of trustworthiness, altruism, compliance, modesty, and tenderness (e.g., "I would rather cooperate with others than compete with them," "I try to be courteous to everyone I meet."). The Chronbach's alpha was 0.79.

Conscientiousness This scale assesses competence, order, dutifulness, self-discipline, and deliberation. Persons with high scores on this scale are considered to be perfectionist, driven, and hasty (e.g., "I keep my belongings neat and clean," "I strive for excellence in everything I do."). The Chronbach's alpha was 0.83.

SF-36 Health Status Questionnaire

The *medical outcomes study short form version 2* (SF-36; Ware et al. 1994) is a 36-item questionnaire that assesses eight dimensions of self-perceived health. For the current study, the SF-36 general health perception (GHP) scale was used to measure general physical health, and the SF-36 general mental health (GMH) subscale was used to assess general mental health. Lower scores are indicative of better health.

General health perception (GHP) assesses individual's perceptions of themselves as physically healthy versus sick, with expectations for improving or declining health. This scale is composed of 5 items with a 5-point response format, ranging from 1 (definitely true) to 5 (definitely false).

General mental health (GMH) is composed of 5 items and a 6-point response format, ranging from 1 (all of the time) to 6 (none of the time), with items assessing constructs such as happiness, peace, nervousness, and sadness.

Data Analysis

For the first part of the study, analysis of variance (ANOVA) and Chi-square analyses were used to explore differences between the five different faith traditions in terms of demographics, religiousness/spirituality (BMMRS), personality (NEO-FFI), and health status (SF-36).

For the second part of the study, Pearson's correlations were conducted to determine the degree of association among the variables. Hierarchical regression analyses were then performed to determine the relative degree of association between faith tradition, demographic, NEO-FFI, and BMMRS variables and SF-36 health and mental health perception. Given the exploratory nature of the study, in the hierarchical regressions, all eight BMMRS variables and all five NEO-FFI variables were included in the models. Given the number of analyses compared to the sample size, ANOVA, Chi-square, correlation, and regression results were considered to be significant only at the $p < .05$ level.

Results

Characteristics of the Participants

Demographic characteristics of the five faith tradition groups are shown in Table 1. In general, the sample was primarily female, Caucasian, middle-aged, married, relatively well-educated, and with relatively high incomes. ANOVAs and Chi-squares indicated the five different faith tradition groups did not significantly differ in terms of demographics, other than for a higher percentage of Muslims being of Middle Eastern or Asian/Pacific Islander descent (50 %; Chi-square = 107.22, $p < .0001$).

Group Differences in Religiousness/Spirituality (BMMRS)

For BMMRS variables, an ANOVA indicated that the groups differed at the $p < .01$ level for seven of eight BMMRS scales (see Table 2) as follows:

Spiritual Scales

Daily Spiritual Experiences

There were significant group differences in daily spiritual experiences ($F = 14.15$, $p < .001$), with the Scheffe's test revealing that Muslims reported higher scores than all other groups, with the Jewish group reporting the lowest level (M > P, C, B > J).

Table 2 One-way analysis of variance of group differences in BMMRS, NEO-FFI, and SF-36 variables

Variable	Protestant ($n = 31$) M (SD)	Catholic ($n = 40$) M (SD)	Muslim ($n = 26$) M (SD)	Buddhist ($n = 38$) M (SD)	Jewish ($n = 22$) M (SD)	Total ($n = 157$) M (SD)	F test
BMMRS spirituality							
Daily spiritual experiences	13.61 (5.19)	14.83 (4.87)	8.42 (3.87)	16.05 (6.72)	20.64 (7.99)	14.84 (6.65)	14.15***
Meaning	3.48 (1.03)	3.13 (0.85)	2.58 (0.99)	4.36 (1.37)	4.71 (1.71)	3.65 (1.36)	15.13***
Values and beliefs	3.00 (0.89)	2.83 (0.80)	2.15 (0.46)	4.08 (1.27)	3.86 (1.25)	3.18 (1.17)	19.44***
Forgiveness	4.48 (1.12)	4.61 (1.14)	6.08 (1.62)	5.59 (1.62)	6.41 (2.36)	5.39 (1.76)	8.90***
Religious and spiritual coping	11.52 (3.32)	11.93 (3.17)	11.17 (2.82)	13.15 (3.74)	15.50 (4.71)	12.53 (3.73)	5.93***
BMMRS religion							
Private religious practice	18.39 (6.16)	20.28 (6.43)	11.08 (3.98)	21.63 (5.88)	25.55 (6.95)	19.60 (7.46)	20.14***
Organizational religiousness	4.77 (1.94)	5.66 (1.44)	3.80 (2.47)	6.70 (2.50)	6.77 (2.27)	5.78 (2.42)	10.02***
BMMRS congregational support							
Religious support	5.62 (1.18)	5.97 (1.40)	6.50 (1.96)	5.94 (1.58)	7.05 (1.75)	6.15 (1.60)	3.01*
NEO-FFI							
Neuroticism	47.17 (11.37)	45.85 (9.78)	46.72 (9.69)	49.93 (9.32)	48.18 (11.99)	47.58 (10.06)	0.88
Extraversion	51.48 (10.87)	56.51 (11.52)	54.36 (8.12)	46.45 (9.77)	53.50 (11.79)	52.42 (10.87)	5.04**
Openness	56.41 (9.18)	55.85 (9.33)	51.96 (9.16)	66.25 (7.58)	62.05 (9.66)	58.37 (10.37)	12.92***
Agreeableness	55.86 (9.80)	55.90 (9.99)	54.00 (8.37)	55.40 (9.13)	55.86 (10.98)	55.14 (9.52)	0.19
Conscientiousness	50.34 (11.19)	52.71 (12.29)	51.84 (10.29)	48.65 (8.33)	50.45 (12.60)	50.99 (10.74)	0.79
SF-36							
Mental health	24.17 (4.19)	24.27 (3.85)	25.64 (4.38)	23.65 (3.55)	24.32 (3.75)	24.44 (3.85)	1.02
General health perception	19.29 (3.41)	20.54 (3.39)	21.01 (3.46)	20.09 (3.32)	19.24 (4.74)	20.19 (3.57)	1.26

* $p < .05$; ** $p < .01$; *** $p < .001$; *M* mean score; *SD* standard deviation

Meaning

Statistically significant differences were indicated in meaning ($F = 15.13$, $p < .001$), with the Scheffe's test indicating that Muslims were more likely than other groups to report a higher level of meaning, with Buddhists and Jews reporting the lowest ratings of meaning (M > P > B, J; C > B, J).

Values/Beliefs

There were significant group differences in spiritual values and beliefs ($F = 19.44$, $p < .001$), with the Scheffe's test revealing that Muslims had higher scores than all other groups, with Buddhists and Jews reporting the lowest levels (M > P > B & J; C > B, J).

Forgiveness

Statistically significant differences were indicated in forgiveness ($F = 8.90$, $p < .001$), with the Scheffe's test indicating that Protestants and Catholics were more likely than Muslims and Jews to report a higher level of forgiveness (P, C > M, J).

Religious/Spiritual Coping

There were significant group differences in spiritual coping ($F = 5.93$, $p < .001$), with the Scheffe's test revealing that Muslims, Protestants, and Catholics had higher scores in spiritual coping than did Jews (M, P, C > J).

Religious Subscales

Private Religious Practices

Statistically significant differences were found in frequency of religious practices ($F = 20.14$, $p < .001$), with the Scheffe's test revealing that Muslims were more likely than all groups to report more frequent religious practice; Protestants and Catholics also reported engaging in more religious practices than Jews (M > P, C, B, J; P, C > J).

Organizational Religiousness

There were significant group differences in frequency of participation in organized religion ($F = 10.02$, $p < .001$), with the Scheffe's test revealing that Protestants reported more frequent participation in organized religion than did Buddhists and Jews; Muslims had higher scores on organizational religiousness than did Buddhists, Jews, and Catholics (P > B, J; M > C, B, J).

Congregational Support

Religious Support

The ANOVA on the BMMRS religious support scale was non-significant ($F = 3.01$, $p < .05$).

Group Differences in Personality (NEO-FFI)

For NEO-FFI variables, ANOVAs indicated that the different groups differed in extraversion and openness, but not neuroticism, agreeableness, or conscientiousness.

Extraversion

Significant differences were found in *extraversion* ($F = 5.04$, $p < .01$), with the Scheffe's test indicating that Catholics and Muslims were more likely than Buddhists to report being extraverted (C, M > B).

Openness

There were significant group differences in openness to new experiences ($F = 12.92$, $p < .001$), with the Scheffe's test revealing that Buddhists had higher scores on openness than did Protestants, Catholics, and Muslims, and that Jews were more open to new experiences than Muslims (B > P, C, & M; J > M).

Group Differences in Health Status

ANOVAs indicated that there were no group differences in SF-36 GHP or GMH scores.

Correlations

Pearson's correlations were conducted for the entire sample between the SF-36 and BMMRS and NEO-FFI (Table 3) and the BMMRS and NEO-FFI (Table 4).

Spirituality, Religion, and Health

The results indicated that only one of eight BMMRS variables (i.e., *Daily spiritual experiences*) was significantly correlated with GHP. For GMH, four of eight BMMRS variables were significantly related (i.e., *Daily spiritual experiences, meaning, religious/spiritual coping, private religious practices*).

Personality and Health

Both the SF-36 GHP and GMH scores were significantly correlated with the *neuroticism*, *extraversion*, and *conscientiousness* scales. In general, increased extraversion and decreased neuroticism and conscientiousness were associated with better physical and mental health.

Spirituality, Religion, and Personality

In general, all five BMMRS spirituality scales were significantly correlated with increased extraversion and decreased neuroticism. Increased meaning was significantly correlated with decreased conscientiousness, and increased values/beliefs were significantly associated with increased openness to new experiences. Increased congregational support was significantly associated with decreased neuroticism. No BMMRS religious subscales were significantly correlated with personality variables.

Table 3 Pearson's correlations for entire sample

Variable	SF-36	
	GHP	GMH
BMMRS		
Spiritual experiences		
Daily spiritual experience	.23**	.28**
Meaning	.14	.21**
Values/beliefs	.13	.14
Forgiveness	.10	.07
Spiritual coping	.15	.32**
Religious practices		
Private religious practice	.13	.26**
Organizational religiousness	.07	.08
Congregational support		
Religious support	−.02	.17
NEO-FFI		
Neuroticism	−.36**	−.65**
Extraversion	.41**	.31**
Openness	.02	.04
Agreeableness	.10	.14
Conscientiousness	−.27**	−.27**

** $p < .01$

Table 4 Pearson's correlations for entire sample

Variable	NEO-FFI				
	Neuro.	Extra.	Open.	Agree.	Consc.
BMMRS					
Spiritual experiences					
Daily spiritual experience	.26**	−.33**	.11	−.17*	−.15
Meaning	.23**	−.32**	.18*	−.18*	−.24**
Values/beliefs	.22**	−.30**	.28**	−.19*	−.16
Forgiveness	.30**	−.25**	.06	−.18*	−.15
Spiritual coping	.31**	−.22**	−.01	−.18*	−.12
Religious practices					
Private religious practice	.12	−.13	.16*	−.07	−.04
Organizational religiousness	.07	−.16*	.14	−.02	.15
Congregational support					
Religious support	.23**	.04	.00	−.11	−.01

** $p < .01$; * $p < .05$; *Neuro.* NEO-FFI neuroticism, *Extra.* Extraversion, *Open.* Openness, *Agree.* Agreeableness, *Consc.* Conscientiousness

Hierarchical Regressions

Consistent with Lockenhoff et al. (2009), two sets of hierarchical regression analyses were conducted to determine the relative degree of association between health variables and

Table 5 Summary of hierarchical regression analyses for variables predicting general health perception (standardized beta coefficients)

Variable	General health perception		
	Model 1	Model 2	Model 3
Demographics			
Age	− .19	−.21*	−.25**
Sex	.07	.02	.04
Education	.14	.07	.10
Household income	.06	.03	.10
Faith tradition	.01	.08	.13
NEO-FFI			
Neuroticism		−.18	−.10
Extraversion		.26	.27**
Openness		.10	.14
Agreeableness		.03	.07
Conscientiousness		.17	.14
BMMRS			
Daily spiritual experiences			.09
Meaning			.17
Values/beliefs			.06
Forgiveness			.21
Religious/spiritual coping			.03
Religious practice			.29*
Organizational religiousness			.28**
Religious support			.06
F	1.00	3.08**	2.93***
R^2/adjusted R^2	.05/.01	.25/.17	.38/.25

$n = 160$, * $p < .05$, ** $p < .01$, *** $p < .001$

personality versus spiritual variables. Specifically, in the first regression, demographic variables were entered first, followed by the NEO-FFI and then the BMMRS (i.e., to determine whether spiritual variables predict unique variance in health outcomes after considering personality). In the second regression, the order of entry for personality and spiritual/religious variables was reversed, with inclusion of the BMMRS into the regression model followed by the NEO-FFI (i.e., to determine whether personality variables predict unique variance in health outcomes after considering spiritual constructs).

For all hierarchical regressions, faith tradition and demographic variables were included as independent variables in the first model to predict outcome variables. The demographic variables consisted of age, gender (dichotomously coded as 1 = female, 0 = male), education (dichotomously coded as 1 = >college degree, 0 = ≤some college), and annual income (dichotomously coded as 1 = >$40,000, 0 = ≤$40,000). Given our results were generally consistent with those of Lockenhoff (i.e., personality was a stronger predictor of health than spirituality/religion), the results of the first regression (i.e., NEO-FFI followed by BMMRS) are presented in the text and Table 5, but the results of the second regression (i.e., BMMRS followed by NEO-FFI) are presented only in the text.

Hierarchical Regression Order of Variable Entry: Demographics, NEO-FFI, and BMMRS

Predicting General Health Perception

The total model predicted 25 % of the variance in GHP scores (Table 5). In model 1, demographic variables significantly predicted 1 % of the variance in GHP scores. In model 2, the addition of the NEO-FFI predicted an additional 16 % of GHP variance. In model 3, the addition of the BMMRS significantly predicted an additional 8 % of the variance beyond demographics and the NEO-FFI. In the final model, those who were younger ($\beta = -.25$) were more extraverted ($\beta = .27$), and who engaged in more frequent private religious practices ($\beta = .29$) and organized religion ($\beta = .28$) were more likely to report better general health perception.

Predicting General Mental Health

The total model predicted 48 % of the variance in GMH scores (Table 6). In model 1, demographics significantly predicted 7 % of the variance in GMH scores. In model 2, the addition of the NEO-FFI significantly predicted an additional 37 % of the variance in

Table 6 Summary of hierarchical regression analyses for variables predicting general mental health (standardized beta coefficients)

Variable	General mental health		
	Model 1	Model 2	Model3
Demographics			
Age	.28**	.21*	.15
Sex	.10	.01	.02
Education	.11	.01	.01
Household income	.03	.02	.02
Faith tradition	.03	.01	.04
NEO-FFI			
Neuroticism		−.55***	−.54***
Extraversion		.09	.08
Openness		.10	.05
Agreeableness		.06	.02
Conscientiousness		.11	.10
BMMRS			
Daily spiritual experiences			.06
Meaning			.15
Values/beliefs			.20
Forgiveness			.23*
Religious/spiritual coping			.16
Religious practice			.15
Organizational religiousness			.02
Religious support			.03
F	2.54*	8.97***	6.23***
R^2/adjusted R^2	.12/.07	.49/.44	.57/.48

$n = 160$, * $p < .05$, ** $p < .01$, *** $p < .001$

GMH scores. In model 3, addition of the BMMRS significantly predicted an additional 4 % of GMH scores beyond demographics and the NEO-FFI. In the final model, individuals who were less neurotic ($\beta = -.54$) and were more likely to forgive or feel forgiven ($\beta = .23$) were more likely to report statistically better mental health.

Hierarchical Regression Order of Variable Entry: Demographics, BMMRS, and NEO-FFI

Predicting General Health Perception

In this regression, the total model predicted 24 % of the variance in GHP scores. In model 1, demographic variables predicted 1 % of the variance in GHP. In model 2, the addition of the BMMRS (i.e., *Organizational religiousness)* significantly predicted an additional 10 % of the variance in GHP scores beyond demographics. In model 3, the addition of the NEO-FFI (i.e., *Extraversion)* significantly predicted an additional 13 % of the variance beyond age and BMMRS variables (Table 5).

Predicting General Mental Health

In this regression, the total model predicted 51 % of the variance in GMH scores. In model 1, demographics (i.e., age) significantly predicted 9 % of the variance in GMH scores. In model 2, the BMMRS (i.e., *values/beliefs*) significantly predicted an additional 10 % of the variance in GMH scores. In model 3, the addition of the NEO-FFI (i.e., *neuroticism)* significantly predicted an additional 32 % of the variance in GMH scores (Table 6).

Discussion

Differences Among Faith Traditions

The first part of the study proposed to determine whether five different, diverse faith traditions differ in terms of demographic, religious, spiritual, congregational support, personality, and health variables. Following are general conclusions regarding the data, which are more specifically delineated in the following sections.

(a) Individuals of different faith traditions do not differ in terms of physical or mental health.
(b) Individuals of different faith traditions report differing levels of spirituality and religiosity, but not congregational support.
(c) Individuals of different faith traditions report having different personality characteristics.

Faith Tradition and Health

The results (i.e., ANOVAs, hierarchical regressions) indicate the individuals from the different faith traditions have similar physical and mental health (SF-36; Table 2). This is not surprising as choosing a faith to follow does not necessarily guarantee good health, as other factors are likely more important in determining health status (e.g., dietary habits, substance use, socioeconomic status, social support, etc.).

Faith Tradition and Spirituality, Religion, and Congregational Support

Table 2 indicates that the different faith traditions report statistically significant differences on seven of eight BMMRS variables (it is noted that *Religious support* was significant at the .05 level). Given the number of variables and analyses, the following conclusions are stated as concisely as possible and in general terms.

Overall, Muslims report being the most spiritual group, as they reported the highest scores on four of five BMMRS spiritual subscales (i.e., *Daily spiritual experiences, values/beliefs, meaning, religious/spiritual coping*). In contrast, the Jewish group reported the lowest scores on four of five BMMRS spiritual scales (all but *values/beliefs*) and Buddhists reported being the least spiritual on one of five BMMRS spiritual scales (i.e., *values/beliefs*).

Muslims also reported engaging most frequently in private religious practices. In contrast, Jews reported engaging the least frequently in private religious practices, which is common for Reform Jews who do not subscribe to anciently proscribed daily rituals. Muslims and Protestants reported engaging most frequently in organized religion, while Jews and Buddhists reporting the least frequent participation in organized religious activities. This may be explained by the solitary nature of Buddhist meditation practices, and to Jewish identity being tied more to a sense of common heritage than to participation in religious activities.

In sum, the Muslim sample generally reported being the most spiritual and religious group in the current study (i.e., highest scores on six of eight BMMRS variables; not *forgiveness* or *religious support*). This may be related to the proscribed frequency of required Muslim religious rituals (e.g., prayers five times per day, etc.). Alternatively, these findings may be due to the unique characteristics of the current sample given the relatively small number of Muslims in the local community (i.e., only one mosque in the community), the fact that the Muslim sample had a significantly greater proportion of persons of Middle Eastern and Asian/Pacific Islander descent (compared to the primarily Caucasian samples for the other faith traditions), and/or the Midwestern location of the sample. Due to these factors, it is possible that the current Muslim sample was the most dissimilar group when compared to the others and thus more socially cohesive and reliant on their beliefs, practices, and congregation. However, the fact that they did not report higher levels of congregational support than the other groups suggests this may not be the case.

The reasons that the Buddhists and Jews reported being the least spiritual and religious are likely related to several different factors. For the Buddhists, the BMMRS may not be the most appropriate instrument to measure their spiritual beliefs (as acknowledged by the developers of the BMMRS), given Buddhism's typically non-theological ideologies. Even though all references to "God" in the BMMRS were changed to "higher power," the BMMRS may not have adequately assessed the spiritual beliefs and practices of Buddhists. Similarly, Buddhists may engage less frequently in organized religious services based on the Buddhist emphasis on meditation as a spiritual, but often individually engaged practice. Furthermore, it is noted that the current "Buddhist" participants may not have been raised as Buddhists, as several participants who reported being Buddhist also reported affiliations with other faith traditions (i.e., individuals raised in other faith traditions who now practice Buddhism).

The reason that the Jewish sample reported being the least spiritual and least religious is difficult to determine. Consistent with Cohen and Hill (2007), the current study reported Jews to be less spiritual than Catholics and Protestants, possibly related to the general belief that the Jewish religion is focused on actions, community relationships, and rituals,

with a lesser focus on other-worldly or spiritual matters. However, it is difficult to determine why the Jewish participants reported less frequent religious practices than the other faith traditions in the current study, given Cohen and Hill indicated that they were more religious than Catholics and Protestants. It is possibly due to differences between the Orthodox Jewish sample participating in Cohen's study, compared to the wholly Reformed Jewish sample surveyed in the current study, as Orthodox Jews observe traditional Jewish religious rituals more routinely. Also, Jews tend to see their religious identity as tied to biological descent, as pointed out by Cohen and Hill, and predicated on a shared sense of community rather than on specific religious beliefs or practices.

One specific finding of interest related to differences reported in the practice of and beliefs in forgiveness between the faith traditions. Specifically, Protestants and Catholics reported being the most forgiving groups (and feeling the most capable of being forgiven), while Muslims and Jews reported being the least. This finding may relate to basic Christian tenets, which promote the salvational aspects of forgiveness. For Protestants, to ask for or to receive forgiveness was enumerated by Christ who specified the importance of forgiving enemies in order to receive God's mercy. In Protestant Christianity, only God can forgive sin, and the ability to obtain forgiveness is based entirely on faith in Christ's sacrifice for humanity, rather than on any specific actions one may undertake. In Catholicism, both faith and works (including penances) are very important for rectifying sin.

In this study, the reason for the relatively decreased focus on forgiveness for Muslims and Jews is difficult to determine, but it may be related to the different orientations to forgiveness found in traditional Islamic and Jewish belief systems. As in Christianity, forgiveness derives from God, but in both Judaism and Islam one must ask for forgiveness not only from God, but also from those who have been wronged. In Islam, forgiveness is needed either because of one's own spiritual ignorance or that of others. In Judaism, however, receiving God's forgiveness is based specifically on obtaining the forgiveness of others.

Although Judaism places great emphasis on receiving the forgiveness of God, (e.g., *Yom Kippur* known as the "*Day of Atonement*" is the holiest and most important annual Jewish observance), asking for the forgiveness of others (or even of oneself) is also always crucial. One cannot receive God's forgiveness until one has asked for the victim's forgiveness, and Judaism contains clearly defined rules for when a victim should forgive (Rye et al. 2001). For Jews, it is necessary that forgiveness is conferred by the person who has been wronged and not merely given by others on behalf of a victim. In Islam, it is said to be the sincerity of forgiveness that is crucial, for any offense against a creation of God is also seen as a direct offense against God, and therefore only God may grant forgiveness (Rye et al. 2001). This suggests that perhaps outright forgiveness may be a less compelling spiritual component within these two faith traditions, in comparison with Christianity where through faith (and works) one can receive God's forgiveness directly.

After Jewish and Islamic groups, Buddhists displayed the weakest level of belief/practice in forgiveness. While Buddhist aspects of compassion may value forgiveness, Buddhism traditionally questions the desires that may underlie forgiveness, as well as the ultimate reality of an agent (i.e., the "self") that needs to either give or receive forgiveness.

Faith Tradition and Personality

Different faith traditions report having different personality characteristics in terms of *extraversion* and *openness*, but not *neuroticism*, *agreeableness*, or *conscientiousness*. In general, Muslims and Catholics reported being the most extraverted and Buddhists

reported being the least. Conversely, Buddhists reported being the most open to new experiences, while Muslims reported being the least open to new experiences.

These findings are generally consistent with common conceptualizations regarding the faith traditions included in the current sample. Buddhists, due to the introspective nature of their faith, may be considered to be more open to mystical experiences and non-dogmatic in their beliefs about the nature of the universe and different paths to achieve enlightenment. In contrast, Muslims and Catholics may be less open to new experiences given the more structured nature of their religious practices and beliefs, usually requiring strict adherence to specific religious routines. This is not surprising as the different traditions place different values on the importance of the need for regular, frequent religious activities (e.g., daily, regular prayer and rituals versus more independent meditation, etc.) and intensity of spiritual beliefs (e.g., degree of importance to core identity). Buddhists may be less extraverted given the introspective nature of their tradition, but it is difficult to determine why Catholics and Muslims are the most extroverted. The question arises as to whether individuals of certain personality characteristics are attracted to certain faith traditions, if different faith traditions influence the development of specific personality characteristics through long-term practices and teachings, or if it is a combination of both.

Relationships Among Personality, Spiritual, and Health Variables

The second part of the study proposed to determine the relative degree of association between health outcomes and personality versus spiritual variables for a sample of five diverse faith traditions. Overall, the results of the correlations and hierarchical regressions may be summarized as follows:

(a) Physical health perception is primarily related to positive personality traits (i.e., extraversion), the lack of negative personality traits (e.g., neuroticism, conscientiousness), and increased frequency of religious activities.
(b) Mental health perception is primarily related to the lack of negative personality traits (i.e., neuroticism, perfectionism), but increased willingness to forgive or believe in a forgiving higher power.
(c) Personality variables have a stronger relationship with health outcomes than spiritual and religious variables, consistent with previous studies (Lockenhoff et al. 2009).
(d) Spiritual variables add little to the prediction of unique variance in physical or mental health scores after considering personality.

Relationships Between Health and Spirituality/Religiousness

Correlations between the SF-36 GHP and BMMRS variables for the entire sample suggest that spiritual, religious, and congregational support factors have minimal relationship to physical health perceptions for diverse faith traditions, with only one of eight BMMRS variables (i.e., *Organizational religiousness*) significantly correlated with GHP. In fact, the exact same results were also reported from another recent study completed with populations with chronic health conditions (i.e., cancer, brain injury, stroke, spinal cord injury; Campbell et al. 2010), although this previous sample was primarily Christian. Given the cross-sectional nature of the research, the causative relationship between attendance at religious activities and health cannot be determined. Increased attendance at religious activities may lead to better health, or, more likely, healthier individuals are more likely to be able to attend organized religious activities (Berges et al. 2007).

In contrast to current findings regarding the BMMRS and physical health perceptions, the data indicate that mental health perceptions are significantly associated with both spiritual and religious variables for the entire sample of different faith traditions. Specifically, GMH was significantly correlated with four of eight BMMRS variables including spiritual (i.e., *Daily spiritual experiences, meaning, religious/spiritual coping*) and religious (i.e., *Private religious practices*) scales. These results are supportive of previous research that suggests that better mental health is related to positive spiritual beliefs (Giaquinto et al. 2007; Taylor and Chatters 1988) and support models that suggest that spiritual variables are primarily related to mental health compared to physical health. For example, it has been suggested that spiritual beliefs may be best considered as a coping strategy used by individuals to assist them in emotionally adjusting to life circumstances and stressors, consistent with the buffer hypothesis proposed by Wink et al. (2007). In essence, individuals rely on their beliefs in a loving, supportive higher power to help them emotionally adjust to stress. This hypothesis is consistent with psychoneuroimmunological models of health that empathize the importance of positive thoughts (i.e., spiritual and non-spiritual) in promoting positive health (Ray 2004).

Relationships Between Health and Personality

For all faith traditions, correlational analyses indicated that both physical and mental health perceptions are related to certain aspects of personality (i.e., *neuroticism, extraversion,* and *conscientiousness*) but not others (i.e., *openness* or *agreeableness*). In general, individuals report both better physical and mental health if they are extraverted (i.e., outgoing, socially comfortable, etc.), but less conscientious (i.e., perfectionistic) and less neurotic (i.e., nervous, worriers). This finding is generally consistent with previous research with the NEO-FFI that indicated that neuroticism is negatively associated with positive health (Debruin 2006; Endemann and Zimmermann 2009; Jerant et al. 2008; Lockenhoff et al. 2009). Whether or not individuals are open to new experiences or agreeable appear to be less important in impacting health.

Relationships Between Personality, Spirituality, and Religion

Table 4 indicates that all five BMMRS spirituality scales are positively and significantly correlated with the NEO-FFI Extraversion and Agreeableness scales and negatively and significantly associated with the NEO-FFI neuroticism scale. Only two of the ten correlations among the BMMRS religious subscales and NEO-FFI were significant, and only one of the five correlations between the BMMRS religious (i.e., congregational) Support subscale and NEO-FFI variables were significant. This suggests that personality variables are primarily related to spirituality, rather than frequency of participation in religious activities or perceived degree of congregational support.

Hierarchical Prediction of Physical Health

The following narrative describes only the regressions in which the NEO-FFI was entered into the regression equations prior to the BMMRS. In general, the results indicated that younger age, increased extraversion, and increased participation in personal and organized religious activities significantly predicted physical health perception (Table 5). Extraversion accounted for the most unique variance in physical health perception (i.e., increased

extraversion is associated with better health), generally consistent with psychoneuroimmunological models that indicate that positive personality traits are related to improved health (Endemann and Zimmermann 2009; Jerant et al. 2008). Review of the items on the NEO-FFI *Extraversion* scale illustrates this positive mind set (e.g., "I really enjoy talking to people;" "I am a cheerful, high-spirited person."). That fact that increased frequency of religious activity was associated with better physical health may be related to the fact that better physical health allows individuals to more regularly participate in religious activities and particularly organized gatherings (Berges et al. 2007). Of note, none of the BMMRS spiritual scales predicted variance in GHP scores after consideration of NEO-FFI scales. Thus, it appears that spiritual variables have minimal impact on physical health perceptions beyond that accounted for by personality factors for healthy individuals from diverse faith traditions.

Hierarchical Prediction of Mental Health

Consistent with the hierarchical regressions regarding physical health, the current results suggest that personality variables are stronger predictors of mental health outcomes than spiritual variables. The full model predicting GMH scores indicated that decreased neuroticism, and forgiveness to a lesser extent, was primarily related to positive mental health perception. The majority of BMMRS spiritual subscales (i.e., Daily spiritual experiences, values/beliefs, meaning, religious/spiritual coping) did not significantly predict mental health. The results were generally consistent with previous research that reported that decreased neuroticism is a primary personality feature associated with better mental health (Endemann and Zimmermann 2009; Jerant et al. 2008).

Of note, the current results suggest that forgiveness was the only BMMRS spiritual subscale that was predictive of mental health after considering personality variables. This finding is consistent with research on forgiveness that indicates that the willingness to forgive others for perceived wrongs, or to feel forgiven by others/higher power, is associated with better mental health. For example, the BMMRS forgiveness subscale has been associated with positive physical and mental health for individuals with chronic disabling conditions (e.g., brain injury, spinal cord injury, stroke, cancer; Johnstone and Yoon 2009). In addition, a number of studies conclude that individuals who are more likely to forgive or feel forgiven tend to demonstrate better overall mental health with higher self-esteem, less anger, depression, and anxiety, and greater satisfaction with life (Witvliet 2001; Yamhure Thompson et al. 2005). Similarly, certain personality factors (i.e., neuroticism, social introversion, and tendency toward depression and anxiety) have been described as capable of mediating the level of forgiveness (Maltby et al. 2001).

It is also important to consider that forgiveness, although conceptualized as a spiritual construct in the BMMRS, can be offered in non-religious and non-spiritual contexts. As a result, it does not necessarily need to be conceptualized as a dimension of spirituality. According to a review by DiBlasio and Proctor (1993), therapists who identified as both religious and non-religious equally viewed forgiveness as an important treatment intervention. Forgiveness may thus be best conceptualized as a coping strategy that is related to but also distinct from both personality and spiritual constructs. Individuals may practice the act of forgiveness or feel forgiven based on their cultural/religious upbringing, rather than inherit forgiveness as a personality construct (i.e., "a basic tendency rooted in biology"; McCrae and Costa 2008).

Of interest, none of the BMMRS religious scales were predictive of mental health outcomes. This finding does not suggest that religious practices are not important coping

strategies for assisting individuals in adjusting to health conditions, as many individuals increase prayer as the result of increasing medical problems while others will offer prayers of thankfulness as they recover from illness or injury (Haley et al. 2001; Idler and Kasl 1997). As a result, from a statistical standpoint, it is difficult to demonstrate a consistent statistical relationship between religious activities and health (i.e., increasing prayer is related to both declining and improving health status).

Summary of Hierarchical Predictions

In sum, the current study and previous research regarding the relationships among personality, spirituality, and health are variable. For example, Lockenhoff et al. (2009) suggested that spiritual variables do not account for any variance in health outcomes after accounting for personality, as did one analysis of the current study (i.e., the hierarchical prediction of physical health). These results suggest that spirituality may be best conceptualized as a characterological dimension of personality. In contrast, the research of Halama and Dedova (2007) and one analysis of the current study (i.e., hierarchical prediction of mental health) indicate that spirituality does predict health above and beyond personality and therefore may be best conceptualized as a construct that is distinct from personality. Obviously, the relationships among these variables are complex but do suggest that spiritual beliefs, experiences, and coping strategies are important in impacting one's health, regardless of how they are conceptualized, and should continue to be used in clinical practice and investigated in health research.

Practical Considerations and Future Directions

The current results provide suggestions for practical psychological and spiritual interventions to be used to enhance health, and particularly mental health. In general, the results suggest that increased positive personality traits (e.g., more outgoing, socially engaging, etc.), decreased negative personality traits (e.g., less anxious and perfectionistic), and increased willingness to forgive or believe that one is forgiven (i.e., coping strategies that can be offered in spiritual and non-spiritual contexts) are associated with better health. These results suggest that individuals may benefit from both psychological and spiritual interventions aimed at fostering positive coping strategies (Richards 2002), as well as reducing negative psychological and spiritual coping strategies (e.g., anxiety, belief in a punishing, abandoning higher power). In addition to standard interventions used by health psychologists to promote health (e.g., stress management, biofeedback, cognitive restructuring, etc.), other positive spiritual interventions may include religious-based counseling (Sperry and Shafranske 2005), meditation (Kabat-Zinn et al. 1998), and/or forgiveness protocols (Baskin and Enright 2004; Carson et al. 2005).

Future research will benefit from further distinguishing differences between spirituality, personality, psychological constructs, and health outcomes. Although Piedmont (1999) found that spirituality variables significantly predicted a wide range of psychological constructs (e.g., attitudes, internal locus of control, perceived social support, prosocial behaviors) after considering the effects of personality, the current study suggests that spiritual variables do not necessarily predict health outcomes after considering the effects of personality. Additional research can also determine differences in the relationships that exist among health outcomes and different types of forgiveness (e.g., offered in religious or non-religious contexts; importance between the act of forgiving versus a belief in a forgiving higher power, etc.).

Limitations

The conclusions of the current study are limited by several factors. First, the sample was drawn from a relatively small Midwestern community, which is not likely representative of the general US population. The sample was primarily Caucasian, relatively highly educated, and with higher income than the average American population, which may be due to the fact that the sample was drawn from a town that is home to a major state university. The Muslim and Jewish groups constituted relatively small proportions of the community (i.e., there is only one mosque and one synagogue), and as a result, these groups may not be truly representative of other Muslim and Jewish samples from larger areas in the US with a higher percentage of individuals from these religions. It is also recognized that there are many different sects among each of these diverse faith traditions and that the results of the current study cannot be generalized to all. The ethnic diversity of the Muslim group and the more narrow religious orientation of the Jewish group (i.e., Reform Jewish) may have also affected the results.

Similarly, the BMMRS was primarily designed for Judeo-Christian populations, and as a result, it may not have been the most appropriate measure to use with the current sample. This is particularly true for the Buddhist group, given the non-theological nature of this tradition. Furthermore, although the results provide suggestions regarding the mechanisms that exist among health and religious, spiritual, and personality constructs, longitudinal research is warranted in order to make causal inferences regarding the effect of spirituality and personality on health.

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