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## RESEARCH

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# A Psychological Measure of Islamic Religiousness: Development and Evidence for Reliability and Validity

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A 60-item Psychological Measure of Islamic Religiousness (PMIR) was developed in three stages: (a) Domains of Islam relevant to physical and mental health were identified via theory and semistructured interviews with 25 Muslims; (b) an initial version of PMIR was pilot tested with 64 Muslims from the United States and Israel; and (c) desirable psychometric qualities of the final measure were established based on an international, Internet-solicited sample of 340 Muslims, as follows. The PMIR yielded seven distinct, highly reliable factors: Islamic Beliefs; Islamic Ethical Principles & Universality; Islamic Religious Struggle; Islamic Religious Duty, Obligation & Exclusivism; Islamic Positive Religious Coping & Identification; Punishing Allah Reappraisal; and Islamic Religious Conversion. All scales demonstrated desirable variability and strong discriminant, convergent, predictive, and incremental validity using multiple mental and physical criterion variables. The findings indicate that Islam is central to the well-being of Muslims and the PMIR provides a scientifically based, multidimensional understanding of Islam needed to advance the nearly nonexistent psychological theory, practice, and research focused on Muslims.

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Research in the psychology of religion has grown dramatically in the past 10 years (Pargament & Abu Raiya, 2007). Empirical studies have yielded an interesting picture of the relationship between religion and physical and mental health. However, this research has focused almost exclusively on Christian samples; other traditional faiths have been largely neglected. Empirical studies of Muslims have been particularly rare despite the fact that Islam is the second largest religion in the world. Progress in this area has been hampered by a lack of instrumentation that is relevant to Islam. For example, existing measures of religiousness and spirituality have been developed for use with Christians and Jews and have questionable applicability to other faiths. This study aims to address this gap in the literature and to establish a foundation for empirical research among Muslims by developing a valid and reliable Psychological Measure of Islamic Religiousness (PMIR) to be utilized in mental health research.

#### RATIONALE UNDERLYING THE DEVELOPMENT OF THE PMIR

Although an extensive amount of mental health research has been carried out in Muslim countries, most of this research has not considered the role of religion in mental health (al-Issa, 2000). Furthermore, this research has relied almost exclusively on clinical observations and anthropological methods of inquiry (e.g., Carter & Rashidi, 2003; MacPhee, 2003). Surprisingly, relatively few empirical studies have been carried out among Muslims, and very few have examined the role of Islam with respect to physical and psychological well-being. Moreover, most existing studies have been comparative in nature and do not focus exclusively on Muslims (e.g., Kamal & Loewenthal, 2002; Loewenthal & Cinnirella, 1999).

One of the reasons for the absence of empirical research about Islamic religiousness may be the unavailability of a relevant, valid, and reliable psychological scale. A few attempts were made to develop such a scale. For example, Wilde and Joseph (1997) devised, in English, the Muslim Attitudes Towards Religion (MARS) Scale and validated it in a sample of 50 British university Muslim students (31 male, 19 female). This scale included 14 items and three theoretically based factors. The first was called the *personal help* factor and included items such as "I find it inspiring to read the Qura'n." The second was labeled *Muslim worldview* factor and included items such as "I believe Allah helps people." The third was named the *Muslims' practices* factor and included items such as "I pray five times a day." However, it is difficult to evaluate this measure. The authors did not report how they generated the items or which statistical procedures they used to generate the factors. Furthermore,

they validated the scale in a very small sample and did not report evidence of validity. Ghorbani, Watson, Ghramaleki, Morris, and Hood (2000) used a sample of 178 Iranian university students (76 women, 102 men) to evaluate the validity and the factorial structure of a Persian version of the MARS. Using factor analysis, they found three internally consistent factors identical to what Wilde and Joseph hypothesized. They also found that these three factors were positively correlated with Allport's extrinsic and intrinsic religious orientations. However, the MARS failed to predict self-reported psychiatric symptoms (such as depression, anxiety, and psychoticism). They concluded that the MARS was a reliable measure of Iranian religiousness, but expressed concern about the predictive validity of the scale.

Working with a sample of 381 Muslim adolescents between the ages of 16 and 20 years living in the United Kingdom, Sahin and Francis (2002) developed the Attitude toward Islam Scale. This 23-item Likert-type instrument taps the affective reactions of Muslims to their religious practices and beliefs. This scale includes items such as, "I find it inspiring to listen to the Qura'n," "Allah means a lot to me," and "I think mosque sermons are boring." The researchers established the reliability and validity of this instrument using multiple outcome measures. Globally speaking, the researchers found that positive attitudes to Islam were associated with better well-being. The validity and reliability of the Attitude toward Islam Scale was confirmed in a Pakistani university students sample (Khan & Watson, 2006b). However, this scale targets only the *affective* ingredient of Islamic religiousness (i.e., attitudes) and does not assess actual practices and beliefs and other dimensions of Islamic religiousness. Further, this instrument was validated among adolescents in the United Kingdom and university students in Pakistan only, and therefore its applicability to other populations is still questionable.

Khan and Watson (2006a) developed the Pakistani Religious Coping Practices Scale to record Muslim religious approaches to coping. A sample of 129 Pakistani university students responded to Urdu versions of this new instrument along with two Brief Religious Coping (RCOPE; Pargament, Koenig, & Perez, 2000) scales; single-item assessments of religious orientation and religious interest; and scales measuring anxious, depressed, and hostile reactions to stress. They found the Pakistani Religious Coping Practices Scale and the two Brief RCOPE scales to be positively correlated. They also found that the new Muslim coping practices measure was linked to higher levels of religious motivation and interest and lower levels of depression. The authors concluded that the Pakistani Religious Coping Practices Scale was useful for examining how Pakistani Muslims cope with stress. However, this scale targeted religious coping practices only and did not tap into other religious dimensions (e.g., beliefs, religious motivation). It was also validated among Pakistani university students, and therefore the generalizability of its findings is limited.

In general then, the research with Muslims, though rare, suggests that there may be a link between Islamic beliefs and practices and Muslims' well-being. However, the scales that were developed to assess Islamic religiousness, though useful in some aspects, have shortcomings. To address these shortcomings and to extend the existing work on the assessment of Islamic religiousness, this study aimed to develop and validate a multidimensional, theoretically based, rigorously constructed, valid, and reliable measure of Islamic religiousness that is relevant to physical and mental health.

## METHOD

To develop and validate the PMIR, we followed three distinct stages. The first two stages consisted of preliminary efforts to ensure that the measure would adequately sample items from the domain of interest. The third stage is the focus of this study and involved administering the PMIR to 340 Muslims to verify its psychometric properties.

### Stage 1: Identifying Domains of Islam Relevant to Physical and Mental Health

Our first stage in developing the PMIR was to conduct preliminary interviews with 25 Muslims in the United States and Israel to ensure that we had a firm grasp of the theologically based Islamic constructs likely to be relevant to believers' physical and mental functioning. We used a two-part process to achieve this goal. First, we identified key Islamic beliefs and practices through a review of Islamic literature. This information helped to shape the development of our semistructured interview protocol. Second, we reviewed research in the psychology of religion that pertains to (a) the measurement of religion and (b) the links between indices of religion and mental health and physical health found with Christian, Jewish, and Hindu samples to inform our development of an initial interview protocol with Muslims. We found the interview protocol by Tarakeshwar, Pargament, and Mahoney (2003), who developed psychologically relevant measures of Hindu beliefs and practices, to be especially helpful. We chose to structure our semistructured interview in a parallel manner with this work, although we changed some questions to make them relevant to Islamic religious life and added new questions specific to the Islamic religion. Specifically, besides background demographic questions, this interview protocol included seven general open-ended questions (e.g., Would you say that Islam has affected your sense of meaning in life? If so, what about being a Muslim has affected your sense of meaning in life?). Each open-ended question was followed by specific close-ended questions (e.g., Would you say that prayer has affected

your sense of meaning in life? If so, what about prayer has affected your sense of meaning in life?), which were derived from the review of the psychology of religion and Islamic literature. These interviews were quantitatively and qualitatively analyzed (see Abu Raiya, 2005a, for further detail regarding the first stage).

Our analysis of the interviews pointed to two major conclusions. First, Islam seems to be related to almost every domain in Muslims' lives. Second, five core Islamic religious dimensions appear to be potentially relevant to the physical and mental health of Muslims: *beliefs* (the belief in Allah, predestination, the Day of Judgment, heaven and hell, etc.), *practices* (prayer, pilgrimage, almsgiving, fasting, reading the Holy Qura'n, etc.), *ethical conduct-dos* (being humble, honoring the parents, treating people equitably, helping relatives and neighbors, etc.), *ethical conduct-don'ts* (not eating pork, not drinking alcohol or using other drugs, not having sex outside marriage, etc.), and *Islamic universality* (viewing every Muslim in the world as a brother or sister, identifying with every Muslim's suffering, etc.).

Our analysis of the interviews also led us to identify seven religious dimensions that are not specific to Islam but nevertheless are likely to be relevant to the functioning of Islamic believers. These constructs overlap greatly with salient constructs identified in prior empirical studies in the field of the psychology of religion that have involved Christian samples. Thus, these seven dimensions extend the five core Islamic religious dimensions just listed. The first of these "nonspecific religious dimensions" is *religious conversion*, a process during which the individual moves from being a nonreligious person to a religious one. The second is *positive religious coping*. Following Pargament et al. (2000), the positive religious coping methods reflect a secure relationship with God, a belief that there is a greater meaning to be found, and a sense of spiritual connectedness with others. The third is *negative religious coping*, which involves expressions of an insecure relationship with God and a tenuous and ominous view of the world (Pargament et al., 2000). The fourth is *religious struggle*, which refers to difficulties, doubts, and conflicts that the individual experiences when adhering to a religious faith or doctrine. The fifth is *religious internalization-identification*. According to Ryan, Rigby, and King (1993), religious identification represents adoption of religious beliefs as personal values. The sixth is *religious internalization-introjection*. Introjected religious beliefs and behaviors are driven by other-approval, anxiety, and guilt (Ryan et al., 1993). The seventh is *religious exclusivism*, which reflects the assumption that there is an absolute reality and a single way to approach it (Pargament, 1997).

Overall, the findings from our semistructured interviews underscored the multidimensional nature and relevance of Islamic religiousness to the health and well-being of Muslims and provided valuable insights regarding the constructs that should be incorporated into the PMIR.

### Stage 2: Constructing and Pilot Testing an Initial Measure

The second stage in developing the PMIR was to construct and pilot test an initial set of items. There were 122 items created that mapped onto the core domains of Islam (beliefs, practices, ethical conduct—do, ethical conduct—don't, and Islamic universality) and nonspecific religious dimensions (Islamic religious conversion, Islamic positive religious coping, Islamic negative religious coping, Islamic religious struggle, Islamic religious internalization—identification, Islamic religious internalization—introjection, and Islamic religious exclusivism). Two steps were then used to ascertain the face validity of the items to Muslims, the variability of responses to each item, and the internal consistency of the theoretically based subscales. First, informal verbal and written feedback on the measure was gathered from a pilot sample of Muslim participants ( $N = 10$ ) in the United States and Israel. Second, modifications of wording of the items were made based on this initial feedback, and the revised items were administered to a convenience sample of 64 Muslim participants in Israel and in the United States. Descriptive statistics (means and standard deviations) of each item and subscale were computed, and the reliability coefficients (Cronbach's alphas) for each subscale were obtained. Overall, the results of that study showed that the subscales were meaningful to Muslims, demonstrated variability, and possessed high internal reliabilities (see Abu Raiya, 2005b, for further details regarding the second stage).

### Stage 3: Establishing the Factor Structure, Reliability, and Validity of the PMIR

The third stage in the development of the PMIR represents the focus of this study. To enhance the likelihood of participant completion, we shortened the 122-item measure used in Stage 2 to 70 items. The reduction of items was justified by the high to very high levels of internal consistency found for the subscales in the second stage. Then we sought to verify the factor structure, reliability, and validity of the final version of the PMIR using a sizable sample ( $N = 340$ ) of Muslims from around the world. Specifically, we examined the internal consistency of the theoretically derived subscales and performed a factor analysis on the items. We examined whether the subscales based on the factor analyses showed discriminant validity, and we expected no or few significant correlations between the scales and demographics and social desirability. We also examined convergent validity, expecting that the PMIR subscales would be modestly related to global single-item indices of general religiousness but not overlap fully with such indices because of the more in-depth and theoretically relevant nature of the PMIR's subscales. Most important, we examined the predictive validity of the measure by examining correlations between subscales

of the PMIR and diverse criteria of well-being including measures of physical health and mental health. Finally, we examined the evidence for incremental validity of the PMIR; that is, we examined the degree to which the PMIR subscales predict well-being beyond the effects of demographic variables, social desirability and global religiousness.

### *Participants*

The participants for this study consisted of 340 Muslims, 60.8% of whom were female. Most participants (78%) were between 18 and 45 years of age. With regard to marital status, 60.8% were never married, 32.2% were married, and 6.5% were divorced. The sample was fairly highly educated with 7.1% reporting less than 12 years of education, 45.8% between 12 and 15 years of education, 27.1% between 15 and 18 years of education, and 19.6% having more than 18 years of education. Slightly more than half of the sample (53.9%) specified North America as their continent of current residence, with another 17.9% from Europe, 14.9% from Asia, 7.1% from Africa, and the remaining 5.9% from Australia. Based on U.S. currency, 40.2% of the participants reported an annual household income as being less than \$25,000, 23.9% were in the range of \$25,000 to \$50,000, 19% were in the range of \$50,000 to \$75,000, and the remaining 16.9% were above \$75,000. Finally, on a 5-point scale, participants indicated moderate levels of self-rated religiousness ( $M = 3.23$ ,  $SD = 1.01$ ) and self-rated spirituality ( $M = 3.65$ ,  $SD = 1.02$ ).

### *Procedure*

All participants completed an online survey for this study. The sample was recruited by conducting an extensive search for Muslim groups, associations, and/or forums operating in the English language on the Web. Browsers and search tools like Google, Yahoo!, and beliefnet were used, and the key words *Muslim forums*, *Muslim associations*, and *Muslim groups* were inserted. When groups/associations/forums with high constituency and/or active Web sites were identified, the contact information of the owners, managers, presidents, and/or administrators (henceforth *administrators*) of these social networks were obtained via their Web pages. For example, the administrators of the Web sites of the Muslim student associations at Yale, Chicago, and Michigan Dearborn universities; the Federation of the Islamic Associations of New Zealand; the Australian New Muslim Association; and the Muslim Association of Britain were contacted. These administrators were contacted by e-mail, and the purpose of the study was explained to them. Then they were asked to send a message that included the survey-link via e-mail to all of the members in their groups, forums, and associations. All in all, about 100 recruiting messages were sent

to administrators, and about 30 of them confirmed receiving the message and forwarding it to their Listserv. In addition, a “snowball” sampling was applied; a message including the survey link was sent to about 30 of the first author’s Muslim friends and acquaintances who were asked to complete the survey and forward the message to any Muslim they know. A total of 362 individuals submitted online surveys. However, 22 surveys were dropped because the survey was either partially completed or submitted more than once.

### *Measures*

Participants completed a 70-item version of the PMIR, which consisted of two sets of religious dimensions—Core Islamic Religious Dimensions subscales and Non-Specific Religious Dimensions subscales. As previously noted, some of the nonspecific religious subscales were adapted from existing scales in the psychology of religion, but most items on the PMIR were newly constructed and tailored to the Islamic faith.

*PMIR’s Core Islamic Religious Dimensions subscales.* The five Core Islamic Religious Dimensions subscales on the PMIR assess constructs that are specific to Islam as a world religion.

**Beliefs Dimension subscale.** This five-item subscale taps into basic Islamic beliefs about the world (e.g., belief in Allah, belief in afterlife). Participants rated each item on a 3-point scale ranging from 0 (*no*) to 2 (*yes*); the higher the score, the stronger the belief.

**Practices Dimension subscale.** This six-item subscale assesses basic Islamic practices to demonstrate adherence to Islam (e.g., prayer, fasting, attending the mosque). One of these items (wearing hijab-headscarf) was gender specific. Participants rated each item in this subscale on a 6-point scale ranging from 0 to 5; the higher the score, the more of the practice is applied. Because of the different nature of each practice, the response categories for each item differed.

**Ethical Conduct–Do Dimension subscale.** This five-item subscale taps into basic ethical guidelines that Muslims are encouraged to follow (e.g., being humble, respecting the parents). Participants rated each item on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*); higher scores reflected greater use of the content of the subscale.

**Ethical Conduct–Don't Dimension subscale.** This five-item subscale assesses basic behaviors and attitudes that are discouraged among Muslims (e.g., eating pork, drinking alcohol). Participants rated each item on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*); higher scores reflected greater use of the content of the subscale.

**Islamic Universality Dimension subscale.** This five-item subscale assesses the degree to which a Muslim perceives himself or herself as belonging to the larger Islamic nation (e.g., identifying with every Muslim everywhere). Participants rated each item on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*); higher scores reflected greater use of the content of the subscale.

*PMIR's Non-Specific Religious Dimensions.* The seven Non-Specific Religious Dimensions subscales on the PMIR tap into elements of Islam that overlap with key features of other world religions.

**Islamic Religious Conversion subscale.** This six-item subscale assesses indicators of religious conversion among individuals who reported increased religiousness. Prior to completing this subscale, participants responded to a screening item ("In my life, I have changed from a nonreligious person to a religious person") with the response options of *yes* and *no*. Only participants who replied *yes* to this item completed this subscale. This subscale included items such as, "Becoming more involved in Islam was a turning point in my life" and "All at once, I felt that my life has no meaning without Islam." Participants were asked to respond to each of the six items in this subscale on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*); higher scores indicate more conversion-like experiences.

**Islamic Positive Religious Coping subscale.** This seven-item subscale assesses the extent to which Muslim individuals use positive religious coping methods to deal with general life stressors. This subscale included items such as, "When I face a problem in life, I look for a stronger connection with Allah" and "When I face a problem in life, I read the Holy Qura'n to find consolation." Items for this subscale were adapted from the RCOPE Scale developed by Pargament et al. (2000). The participants rated each item on a 4-point scale ranging from 1 (*I do not do this at all*) to 4 (*I do this a lot*). Higher scores on this subscale reflect more positive religious coping.

**Islamic Negative Religious Coping subscale.** This five-item subscale assesses the extent to which Muslim individuals engage in negative religious coping methods when facing general stressors and included items such as, “When I face a problem in life, I realize that Allah will not answer my supplications” and “When I face a problem in life, I feel punished by Allah for my lack of devotion.” Items for this subscale were adapted from the RCOPE Scale developed by Pargament et al. (2000). Participants rated each item on a 4-point scale ranging from 1 (*I do not do this at all*) to 4 (*I do this a lot*). Higher scores on this subscale reflect more negative religious coping.

**Islamic Religious Struggle subscale.** This six-item subscale assesses the occurrence of religious struggle among Muslim participants and included items such as, “I find myself doubting the existence of Allah” and “I find some aspects of Islam to be unfair.” Participants rated each item on a 5-point scale ranging from 0 (*never*) to 4 (*very often*); higher scores indicate more religious struggle.

**Islamic Religious Internalization–Identification subscale.** This five-item subscale assesses the degree of religious identification among participants and included items such as, “I pray because I enjoy it” and “I read the Holy Qura’n because I find it satisfying.” Items included in this subscale were adapted from the Identification factor of the Christian Religious Internalization Scale developed by Ryan et al. (1993). Participants rated each item on a 4-point scale ranging from 1 (*not true at all*) to 4 (*very true*); the higher the score, the more identification is manifested. For all items in this subscale, the option of “not applicable” was included in the response categories.

**Islamic Religious Internalization–Introjection subscale.** This five-item subscale assesses religious introjection and included items such as, “I fast in Ramadan because I would feel bad if I did not” and “I read the Holy Qura’n because I would feel guilty if I did not.” Items were adapted from the Introjection factor of the Christian Religious Internalization Scale developed by Ryan et al. (1993). Participants rated each item on a 4-point scale ranging from 1 (*not true at all*) to 4 (*very true*). For all items in this subscale, the option of “not applicable” was included in the response categories.

**Islamic Religious Exclusivism subscale.** This 10-item subscale assesses the extent of religious exclusivism and included items such as, “Islam is Allah’s complete, unfailing guide to happiness and salvation, which must be totally followed” and “Islam is the best way to worship Allah, and should never be compromised.” Items included in this subscale were adapted from the Religious

Fundamentalism Scale developed by Altemeyer and Hunsberger (1992) for use with Christian samples. Participants rated each item on an 8-point scale ranging from  $-4$  (*very strongly disagree*) to  $+4$  (*very strongly agree*). Higher scores reflect more exclusivism.

### *Psychological Well-Being Measures*

**General Islamic Well-Being scale.** This is a nine-item scale that assesses the degree to which the individual perceives Islam as affecting several aspects of his or her life (e.g., sense of meaning in life, sense of personal comfort) and was constructed during the first two stages of the development of the PMIR. This scale included items such as, "Islam affects my sense of personal identity" and "Islam affects my sense of meaning in life." The participants were asked to respond to each item on a 5-point scale ranging from  $-2$  (*very negatively*) to 2 (*very positively*); higher scores indicate greater general Islamic well-being.

**Depressed mood.** Depressive symptomatology was assessed via the 20-item Center for Epidemiological Research–Depressed Mood Scale (Radloff, 1977). Participants rated each item on a 4-point scale ranging from 1 (*rarely or none of the time*) to 4 (*most or all of the time*). A high score on this scale indicates greater depressive symptoms.

**Life satisfaction.** Life satisfaction among participants was assessed with the 5-item Satisfaction with Life Scale developed by Diener, Emmons, Larson, and Griffin (1985). Participants rated each item on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A higher score on this scale means a greater sense of life satisfaction.

**Positive relations with others.** Ryff and Keyes's (1995) nine-item Positive Relations with Others scale was used to assess the quality of relations that participants tend to form with others. Participants rated each item on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher scores indicate positive relations with others.

**Purpose in life.** Ryff and Keyes's (1995) 9-item Purpose in Life scale was used to assess this domain in participants' lives. Participants rated each item on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher scores denote greater purpose in life.

**Physical health.** The 5-item General Health Perception subscale of the Short-Form-36 Health Survey (Ware & Sherbourne, 1992) was used to measure participants' perception of their physical health. The participants rated four items on a 5-point scale ranging from 1 (*definitely true*) to 5 (*definitely false*). The remaining item is scored on a scale from 1 (*excellent*) to 5 (*poor*). An overall score was obtained by adding participants' responses to the five items such that a high score represents a perception of *poorer* health.

**Angry feelings.** The 10-item Anger Trait subscale from the State-Trait Anger Expression Inventory (Spielberger, 1988) was used to measure how often the participants experience angry feelings over time. The participants rated each item on a 4-point scale ranging from 1 (*almost never*) to 4 (*almost always*). Higher scores correspond to more trait anger.

**Alcohol use.** The 10-item Alcohol Use Disorders Identification Test (Saunders, Asland, Amundsen, & Grant, 1993) was used to identify serious drinking problems among participants. Participants rated the 7 items of the frequency of alcohol consumption on a 5-point scale ranging from 0 (*never*) to 4 (*daily or almost daily*). The remaining 3 items assess risk factors with the three response options scored as 0 for *no*; 2 for *yes, but not in the last year*; or 4 for *yes, during the last year*. The maximum score possible is 40. A total score of 8 or more indicates a strong likelihood of hazardous or harmful alcohol consumption.

#### *Other Measures*

**Global religiousness.** Two items (How do you describe your religiousness? How do you describe your spirituality?) were used to assess general perceptions of religiousness. The participants were asked to respond to each item on a 5-point scale ranging from 1 (*very low*) to 5 (*very high*). A higher score on this measure means greater perception of global religiousness.

**Social desirability.** The 13-item short version of the Marlowe-Crowne scale was used to measure social desirability. This version has demonstrated good reliability ( $\alpha = .88$ ; Reynolds, 1982). The participants indicated whether each of the items was true or false for them personally.

**Demographic variables.** The participants provided information regarding their age, gender, marital status, years of education, yearly household income, and continent of current residency.

## RESULTS

In what follows, descriptive statistics for the well-being measures and each of the *original* subscales of the PMIR are presented. Next, the results of the factor analyses and the reliability estimates of the factor-based subscales are reported. Finally, validity analyses conducted on the subscales are provided.

### Descriptive Statistics

Because the response options were not identical across all PMIR items, it was not possible to provide straightforward descriptive information on the factor analytically derived subscales. Thus, for descriptive purposes, we present information about the distributions and the means and standard deviations of the distinct subscales prior to factor analysis. This provides insight into the frequency with which various beliefs and practices were endorsed. It should be noted that after we conducted factor analysis, we dropped some items from these initial PMIR subscales. In addition, based on the results of the factor analysis, we combined items from different PMIR subscales to generate factor-derived subscales for all subsequent data analyses.

The mean and standard deviation of the total score of each of the PMIR subscales before factor analysis and the well-being measures are presented in Table 1. In general, participants indicated relatively moderate to high endorsement of the desirable well-being measures and relatively low to moderate endorsement of the undesirable well-being measures. Participants scored exceptionally high on the General Islamic Well-Being scale and exceptionally low on the Alcohol Use measure. As for the PMIR subscales, participants indicated moderate to high endorsement of most of the subscales. One exception was the Islamic Religious Struggle subscale in which participants scored remarkably low.

### Factor Analyses

Except for the six items of the Islamic Religious Conversion subscale that had a screening item, and the one gender-specific item in the Islamic Practices Dimension subscale, the remaining 63 items of the PMIR were entered into an exploratory factor analysis using principal components extraction and direct oblimin rotation. The direct oblimin rotation was selected because the various subscales of the measure were expected to be correlated. The factor analysis yielded 14 factors with eigenvalues greater than 1 and accounted for 70.25% of the variance. However, because these 14 factors were not conceptually meaningful, included single-item factors, and the scree plot bended around the fifth or the sixth factor, we sought more efficient solutions. Four-, five-, six-, and seven factor-solutions were examined. Among these, the six-factor solution proved

TABLE 1  
Descriptive Statistics for Well-Being Measures and the Non-Factor-Analytically Derived Psychological Measure of Islamic Religiousness Subscales

<i>Well-Being Measures</i>	$\alpha$	$M^a$	$SD$	<i>Obtained Range</i>
General Islamic Well-Being	.95	13.64	6.38	(-15)–(18)
Depressed Mood	.92	34.79	12.27	20–79
Positive Relations with Others	.86	41.21	9.14	15–54
Purpose in Life	.84	38.86	8.02	13–54
Physical Health	.76	11.55	4.12	5–25
Satisfaction in Life	.89	22.99	7.71	5–35
Angry Feelings	.87	19.87	5.83	10–32
Alcohol Use	.93	1.35	4.12	0–35
<i>Non-Factor-Analytically Derived PMIR Subscales</i>	<i>No. of Items</i>	<i>*M</i>	$SD$	<i>Obtained Range</i>
Islamic Beliefs	5	9.31	2.18	0–10
Islamic Ethical Conduct–Do	5	19.95	5.75	5–25
Islamic Ethical Conduct–Do Not	5	21.06	5.54	5–25
Islamic Universality	5	20.54	5.07	5–25
Islamic Practices–Men	5	17.49	5.91	0–25
Islamic Practices–Women	6	18.94	6.83	0–29
Islamic Religious Conversion	6	25.91	5.11	6–30
Islamic Positive Religious Coping	7	23.12	5.15	7–28
Islamic Negative Religious Coping	5	9.54	3.10	5–20
Islamic Religious Struggle	6	3.6	5.56	0–24
Islamic Religious Internalization–Identification	5	16.31	3.10	5–20
Islamic Religious Internalization–Introjection	5	12.60	3.52	5–20
Islamic Religious Exclusivism	10	18.07	19.14	(-40)–(+40)

Note. <sup>a</sup>Mean of total score.

to be the most conceptually meaningful. The eigenvalues of the six factors ranged from 2.35 to 15.37 and together accounted for 50.87% of the variance. A summary of the results of the factor analysis is presented in Table 2. The resulted six factors were named Islamic Beliefs; Islamic Ethical Principles & Universality; Islamic Religious Struggle; Islamic Religious Duty, Obligation & Exclusivism; Islamic Positive Religious Coping & Identification; and Punishing Allah Reappraisal.

The 6 items of the Islamic Religious Conversion subscale were entered into separate exploratory factor analysis using principal components extraction and direct oblimin rotation. This yielded one factor with eigenvalue of 3.93, which accounted for 65.51% of the variance.

TABLE 2  
Exploratory Factor Analyses of the Psychological Measure of Islamic Religiousness

Item	Factor					
	1	2	3	4	5	6
I believe in the existence of Allah.	<b>.91</b>	.06	.04	.08	-.01	.07
I believe in the Day of Judgment.	<b>.90</b>	.10	.04	.03	-.06	.02
I believe in the existence of paradise and hell.	<b>.91</b>	.00	-.03	-.07	.07	.01
I believe in the existence of the angels, the Jinn, and Satan.	<b>.92</b>	.05	-.01	-.09	.00	.00
I believe in all the prophets that Allah sent and in the sacred texts that were revealed to them.	<b>.79</b>	.08	.00	.18	.03	.09
Islam is the major reason why I am a humble person.	-.07	<b>.72</b>	.00	-.06	.11	-.10
Islam is the major reason why I honor my Parents.	.00	<b>.72</b>	-.02	-.11	.05	-.07
Islam is the major reason why I help my relatives and neighbors.	.07	<b>.72</b>	.05	-.15	.07	-.02
Islam is the major reason why I assist the needy and the orphans.	.10	<b>.69</b>	.00	-.09	.11	-.09
Islam is the major reason why I am a tolerant person.	.00	<b>.66</b>	-.03	-.03	.14	-.11
Islam is the major reason why I do not eat pork.	.06	<b>.76</b>	-.07	.09	-.13	-.01
Islam is the major reason why I do not drink alcohol.	.08	<b>.66</b>	-.09	-.12	-.09	.07
Islam is the major reason why I do not have sex before marriage or outside it.	.16	<b>.66</b>	.00	-.05	.01	.17
Islam is the major reason why I do not consider committing suicide.	.05	<b>.55</b>	.14	.16	.07	-.11
Islam is the major reason why I do not engage in gossip.	-.03	<b>.80</b>	.01	-.09	.00	.07
I consider every Muslim in the world as my brother or sister.	.00	<b>.60</b>	-.08	-.05	.07	.01
I identify with the suffering of every Muslim in the world.	.00	<b>.65</b>	.01	.04	.07	.03
One of my major sources of pride is being a Muslim.	.16	<b>.55</b>	.02	.01	.09	-.05
I believe that brotherhood and sisterhood is one the basic tenets of Islam.	-.05	<b>.73</b>	-.12	-.02	-.03	.03
When I face a problem in life, I try to make sense of the situation with no reference to Allah.	-.04	-.01	<b>.41</b>	-.05	-.02	-.16
When I face a problem in life, I realize that Allah will not answer my supplications.	.00	.09	<b>.45</b>	.13	-.12	-.33
I find myself doubting the existence of Allah.	.08	-.11	<b>.74</b>	-.15	-.03	.06
I find some aspects of Islam to be unfair.	-.17	-.21	<b>.46</b>	.19	-.10	.04
I find myself doubting the existence of afterlife.	.00	-.10	<b>.76</b>	-.07	-.12	.15
I think that Islam does not fit the modern time.	-.08	-.18	<b>.62</b>	.10	.15	.04
I doubt that the Holy Qura'n is the exact words of Allah.	-.02	-.08	<b>.70</b>	.00	.15	.10
I feel that Islam makes people intolerant.	-.14	-.04	<b>.58</b>	.04	-.12	.22
I go to the masjid because others would disapprove of me if I did not.	.08	.13	<b>.44</b>	-.25	-.20	-.24
How often do you pray?	.37	.09	.10	-.55	.32	.33
How often do you fast?	.04	.00	-.12	-.44	.17	.08
How often do you go to the masjid?	-.09	.17	.14	-.55	.02	.04
I pray because if I do not, Allah will disapprove of me.	-.06	.02	.00	-.62	.00	-.09

(Continued)

TABLE 2  
(Continued)

Item	Factor					
	1	2	3	4	5	6
I read the Holy Qura'n because I would feel guilty if I did not.	.02	.00	.18	<b>-.53</b>	.17	-.31
I go to the masjid because one is supposed to go to the masjid.	.01	.09	.13	<b>-.44</b>	.12	-.16
Islam is Allah's complete, unfailing guide to happiness and salvation, which must be totally followed.	.09	.02	-.33	<b>-.45</b>	.16	-.05
Of all the people on this earth, Muslims have a special relationship with Allah because they believe the most in his revealed truths and try the hardest to follow his laws.	.08	.11	.00	<b>-.56</b>	-.03	-.12
It is more important to be a good person than to believe in Allah and the right religion.	.01	.02	-.20	<b>-.54</b>	-.07	.10
Islam is the best way to worship Allah, and should never be compromised.	-.05	.05	-.18	<b>-.45</b>	.12	-.08
No one religion is especially close to Allah, nor does Allah favors any particular believers.	.00	.10	-.01	<b>-.53</b>	-.17	.37
Except in prayers, how often do you read or listen to the Holy Qura'n?	.08	.00	.04	-.31	<b>.51</b>	.10
Except in prayers, how often do you engage in d'iker or tasbih?	.00	.15	.08	-.26	<b>.43</b>	.27
When I face a problem in life, I look for a stronger connection with Allah.	-.19	.17	-.02	.19	<b>.68</b>	.00
When I face a problem in life, I consider that a test from Allah to deepen my belief.	-.04	.29	-.03	.13	<b>.60</b>	.01
When I face a problem in life, I seek Allah's love and care.	-.21	.26	-.12	.09	<b>.62</b>	.09
When I face a problem in life, I read the Holy Qura'n to find consolation.	.01	.14	.19	-.03	<b>.63</b>	.04
When I face a problem in life, I ask for Allah's forgiveness.	-.09	.16	-.10	.02	<b>.55</b>	-.17
When I face a problem in life, I remind myself that Allah commanded me to be patient.	-.11	.18	.02	-.04	<b>.56</b>	.00
When I face a problem in life, I do what I can and put the rest in Allah's hands.	-.11	.18	.00	-.03	<b>.57</b>	.15
I pray because I enjoy it.	.15	-.15	-.07	.00	<b>.67</b>	-.14
I pray because I find it satisfying.	.21	-.02	-.14	.03	<b>.59</b>	-.16
I read the Holy Qura'n because I feel that Allah is talking to me when I do that.	.07	-.04	-.06	-.07	<b>.66</b>	-.09
I read the Holy Qura'n because I find it satisfying.	.10	-.13	-.17	-.12	<b>.65</b>	.00
I fast in Ramadan because when I fast I feel close to Allah.	.04	-.02	-.35	-.17	<b>.46</b>	-.01
When I face a problem in life, I believe that I am being punished by Allah for bad actions I did.	-.10	.06	-.02	-.08	.09	<b>-.70</b>
When I face a problem in life, I wonder what I did for Allah to punish me.	.11	.11	.43	.12	-.03	<b>-.58</b>
When I face a problem in life, I feel punished by Allah for my lack of devotion.	-.07	.19	.00	.03	-.09	<b>-.70</b>
I would like to live in a world ruled by the Islamic laws.	.19	.38	-.14	-.27	.10	-.08
I fast in Ramadan because I would feel bad if I did not.	-.07	.09	.00	-.32	.01	-.18
"Satan" is just the name people give to their own bad impulses. There really is no such thing as Satan who tempts us.	.00	.14	-.38	-.27	-.01	-.09
Allah will punish most severely those who abandon his true religion.	.04	.00	-.12	-.31	.00	-.38
The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against Allah.	-.04	-.06	-.08	-.18	.10	-.34
No single book of religious writings contains all the important truths about life.	.12	.17	-.29	-.29	-.01	.04
There is no body of teachings, or set of scriptures, which is completely without error.	-.02	.17	-.31	-.23	-.06	.27

Note. Bold numbers listed under each factor indicate that the corresponding item loaded significantly with the factor.

Thus, in subsequent analyses, the final 60-item version of the PMIR was split into seven subscales: Islamic Beliefs subscale (5 items;  $\alpha = .97$ ); Islamic Ethical Principles & Universality subscale (14 items;  $\alpha = .96$ ); Islamic Religious Duty, Obligation & Exclusivism subscale (12 items;  $\alpha = .77$ ); Islamic Religious Struggle subscale (6 items;  $\alpha = .90$ ); Islamic Positive Religious Coping & Identification subscale (14 items;  $\alpha = .88$ ); Punishing Allah Reappraisal subscale (3 items;  $\alpha = .77$ ); and Islamic Religious Conversion subscale (6 items;  $\alpha = .89$ ). Scores for each of the seven subscales were calculated by adding all the items comprising the subscale; higher scores reflected greater use of the content of the subscale.

Finally, the PMIR subscales were only modestly correlated with one another. This indicates that each of the subscales fall within the same general domain but is sufficiently independent to represent distinct constructs, as would be expected based on factor analytic results. Except for the Islamic Religious Struggle subscale, which was significantly negatively associated with all the other subscales ( $r_s = -.18$  to  $-.61$ ), the remaining six subscales were positively intercorrelated ( $r_s = .15-.70$ ). Surprisingly, the Punishing Allah Reappraisal subscale was significantly positively correlated with the Islamic Beliefs subscale ( $r = .25, p < .01$ ) and the Islamic Ethical Principles & Universality subscale ( $r = .29, p < .01$ ).

### Validity Analyses

#### *Convergent Validity: Correlations With Global Religiousness and Religious Well-Being*

As expected, the PMIR subscales were modestly related to global single-item indices of general religiousness but did not overlap fully with these indices. Specifically, greater levels of general religiousness were associated significantly with higher scores on all of the religious subscales ( $r_s = .15-.56$ ) except the Islamic Religious Identification & Positive Coping and the Islamic Religious Struggle subscales. Greater levels of global religiousness were significantly related to lower scores of Islamic Religious Struggle ( $r = -.61$ ) and not significantly related to Islamic Religious Identification & Positive Coping. In addition, the PMIR subscales were tied to indices of spiritual well-being. Specifically, greater levels of General Islamic Well-Being were related significantly to higher scores on all of the religious subscales ( $r_s = .17-.70$ ), except the Islamic Religious Struggle subscale ( $r = -.75$ ); greater levels of General Islamic Well-Being were related significantly to lower scores on this subscale.

*Discriminant Validity: Correlations With Social Desirability and Demographics*

None of the seven PMIR subscales was significantly correlated with social desirability. In contrast, greater levels of social desirability were significantly tied to higher levels of Positive Relations with Others ( $r = .17, p < .01$ ), Purpose in Life ( $r = .13, p < .05$ ), and Satisfaction with Life ( $r = .12, p < .01$ ) and lower levels of Depressed Mood ( $r = -.20, p < .01$ ). In addition, correlational analyses revealed a relatively few significant correlations between the PMIR subscales and demographic variables.

*Predictive Validity: Correlations With the Well-Being Measures*

Correlations between the religious subscales and the well-being measures are provided in Table 3. In general, each of the subscales was associated with various well-being indices, supporting the predictive validity of the PMIR.

*Incremental Validity: Hierarchical Regression Analyses*

In the first step of the hierarchical regression analysis, all the demographic variables, social desirability and global religiousness were entered. In the second step, the factor analytically derived subscales of the PMIR were entered as one block, and the significance of change in  $R^2$  was tested. When the results of the second step revealed that the change in  $R^2$  was significant, then the beta weights associated with each subscale were examined for statistical significance. This process was repeated for each criterion or outcome measure. Because the Islamic Conversion subscale was not included in the factor analyses of the whole PMIR, it was subjected to a separate hierarchical regression analysis.

After controlling for the demographic variables, social desirability and global religiousness, the six factor analytically derived subscales combined accounted for unique variance in all of the outcome measures (see Table 4). They explained between 6% (Positive Relations with Others) and 35% (General Islamic Well-Being) of the variance.

After controlling for the demographic variables, social desirability and global religiousness, the Islamic Religious Conversion subscale accounted for unique variance on General Islamic Well-Being ( $\Delta R^2 = .20, p < .01$ ), Depressed Mood ( $\Delta R^2 = .025, p < .05$ ), Satisfaction with Life ( $\Delta R^2 = .03, p < .05$ ), and Angry Feelings ( $\Delta R^2 = .03, p < .05$ ). More specifically, higher scores on Islamic Religious Conversion were tied to higher scores on General Islamic Well-Being ( $\beta = .49, p < .01$ ) and Satisfaction with Life ( $\beta = .20, p < .05$ ) and lower scores on Depressed Mood ( $\beta = -.15, p < .05$ ), and Angry Feeling ( $\beta = -.17, p < .05$ ).

TABLE 3  
Correlations Between the Factor Analytically Derived Psychological Measure  
of Islamic Religiousness Subscales and the Outcome Measures

<i>Variable</i>	<i>General Islamic Well-Being</i>	<i>Depressed Mood</i>	<i>Positive Relations With Others</i>	<i>Purpose in Life</i>	<i>Physical Health</i>	<i>Satisfaction With Life</i>	<i>Angry Feelings</i>	<i>Alcohol Use</i>
Islamic Beliefs	.47**	-.23**	.29**	.21**	-.23**	.23**	-.16**	-.48**
Islamic Ethical Principles & Universality	.68**	-.24**	.28**	.27**	-.22**	.33**	-.23**	-.45**
Islamic Religious Conversion	.44**	-.11	.12	.11	-.13	.23**	-.18**	-.14
Islamic Religious Struggle	-.75**	.35**	-.44**	-.41**	.35**	-.31**	.32**	.62**
Islamic Religious Duty, Obligation & Exclusivism	.43**	-.20**	.10	.20**	-.03	.07	-.15*	-.14*
Islamic Positive Religious Coping & Identification	.70**	-.11	.24**	.29**	-.22**	.30**	-.21**	-.13*
Punishing Allah Reappraisal	.17**	.04	.00	-.05	.00	-.03	.15**	-.12*

Note. \* $p < .05$ . \*\* $p < .01$ .

TABLE 4  
Regression Estimates of Outcome Measures on Demographic Variables and Social Desirability,  
and the Factor Analytically Derived Psychological Measure of Islamic Religiousness Subscales

<i>Variable</i>	<i>General Islamic Well-Being</i>	<i>Depressed Mood</i>	<i>Positive Relations With Others</i>	<i>Purpose in Life</i>	<i>Physical Health</i>	<i>Satisfaction With Life</i>	<i>Angry Feelings</i>	<i>Alcohol Use</i>
Demographics, social desirability and global religiousness								
$R^2$	.24**	.10*	.17**	.14**	.08*	.14**	.05*	.04
Islamic Beliefs	.04	0.03	-.07	0.00	-.05	-.07	.11	-.04
Islamic Ethical Principles & Universality	.10	-.02	-.08	-.01	.01	.19*	-.08	-.08
Islamic Religious Struggle	-.18**	.27**	-.21*	-.14*	.18*	.06	.31**	.71**
Islamic Religious Duty, Obligation & Exclusivism	.11*	-.09	.01	.09	-.17*	-.09	-.04	.01
Punishing Allah Reappraisal	-.08	.14*	-.08	-.14*	.04	-.09	.20*	.16*
Islamic Positive Religious Coping & Identification	.42**	-.05	.11	.10*	-.24**	.18*	-.02	-.27**
$R^2$	.59**	.20**	.23*	.22**	.17**	.20**	.19**	.43**
$\Delta R^2$	.35**	.11**	.06*	.08**	.09**	.06**	.14**	.39**

*Note.* The coefficients listed are standardized regression weights obtained at the end of the analyses.

\* $p < .05$ . \*\* $p < .01$ .

## DISCUSSION

Using a three-stage process, we developed the PMIR. The first stage involved a review of literature within the general psychology of religion, a review of Islamic religion, and 25 semistructured interviews conducted with Muslims in Israel and the United States. These efforts provided the conceptual foundation to the initial generation of items that took place in the second stage. Specifically, in the second stage, we generated 122 survey items that assessed core dimensions of the Islamic faith and other religious dimensions not specific to Islam. Then we pilot tested this 122-item version of the PMIR among a sample of 64 Muslim participants recruited in Israel and the United States. In the third stage, we reduced the number of items to 70 and we subjected this measure to rigorous psychometric analyses using an international sample of 340 Muslim participants. The findings from this stage indicate that the resulting PMIR is a reliable, valid, multidimensional measure that can help advance the nearly nonexistent psychological theory, practice, and research focused on Muslims.

### Key Findings

Overall, the results were noteworthy in several respects. First, the results of this study demonstrated that the PMIR is relevant to Muslims. The participants reportedly adhered to different Islamic beliefs, adopted various Islamic religious attitudes, and observed a diverse array of Islamic religious practices. Participants also varied in their responses to the different items of the measure.

Second, the dimensions that emerged from the factor analyses made intuitive sense for the most part. Some of these dimensions (the Islamic Beliefs, the Islamic Religious Struggle, and the Islamic Religious Conversion) were identical to what was originally created based on interviews and initial piloting of PMIR items. Other factor-derived subscales (Islamic Ethical Conduct & Universality and Islamic Positive Religious Coping & Identification) were combinations of two dimensions that were highly correlated in the second stage of this program of research. Another (Punishing Allah Reappraisal) is a known coping method used by adherents to other religious traditions (Pargament et al., 2000). Furthermore, except for two subscales (Islamic Religious Duty, Obligation & Exclusivism and Punishing Allah Reappraisal), the remaining subscales had internal consistencies that were higher than .80, the recommended guideline by Nunnally (1978). Punishing Allah Reappraisal ( $\alpha = .77$ ) had only three items, which might explain the relatively low internal consistency of this subscale. Future research could increase the reliability of the Punishing Allah Reappraisal subscale by adding more items reflecting the construct (Clark & Watson, 1995).

Third, the analyses also provided support for the discriminant validity of the PMIR subscales. Despite the fact that most of the subscales were significantly

related to each other, these correlations were modest for the most part. Further, none of the seven PMIR subscales was significantly correlated with social desirability, and relatively few significant links were found between these subscales and demographics.

Fourth, the PMIR subscales were modestly related to global single-item indices of general religiousness but did not overlap fully with such indices. This provided support for the convergent validity of the subscales. The modest correlations among the subscales provided further support for their convergent validity. Based on the assumption that the different subscales measure different aspects of the same construct (Islamic religiousness), we expected them to be moderately correlated. This assumption grew out of interviews with Muslims and Islamic theology which postulates that the different aspects of Islam are not exclusive of each other, rather Islam is “one package” (Abu Raiya, 2005a).

Fifth, the subscales of the PMIR demonstrated predictive validity. Each of the subscales was associated with various well-being indices. It should be emphasized that this study utilized a wide range of outcome measures (General Islamic Well-Being, Satisfaction with Life, Positive Relations with Others, Purpose in Life, Physical Health, Alcohol Use, Depressed Mood, Angry Feelings) that represented different aspects of well-being (i.e., positive functioning, ability/disability, negative feelings, and functioning). Thus, the connection between Islam and different domains in life was established.

Finally, the PMIR demonstrated evidence of incremental validity. Significant relationships between the PMIR subscales and the well-being measures were maintained after controlling for the effects of the demographic variables, social desirability and global religiousness. Thus, the links between Islamic religiousness and psychological well-being could not be explained by these potentially confounding explanatory variables.

In sum, this study yielded substantial evidence for the relevance, reliability, and validity of the different subscales of the PMIR. Overall, the PMIR demonstrated promise as a measure of Islamic beliefs and practices with potentially significant implications for physical and mental health.

### Implications for Psychological Theory and Research

The findings of this study have several implications for psychological theory and research. First, they underscore the relevance of Islam to Muslims' lives and well-being and therefore highlight the need for greater attention to the Islamic religion when dealing with Muslim populations. Failure to do so could lead to an incomplete and perhaps distorted picture of the lives of Muslims. Further, the findings of this study strongly challenge commonplace misconceptions and stereotypes of Islam (e.g., Islam is dangerous to the health and well-being of Muslims). For example, one current widespread stereotype is that

Islam promotes anger and violence. A very different picture emerged from this study. Except for Islamic Religious Struggle and Punishing Allah Reappraisal, higher scores on all the other dimensions of Islamic religiousness identified in this study were tied to lower scores on angry feelings. With respect to Islamic Religious Struggle and Punishing Allah Reappraisal, it should be noted that these constructs have been tied to negative outcomes in other traditions too (Pargament et al., 2000). Additional empirical data are needed to clarify misconceptions of the role of Islam in individuals' lives and replace them with concrete knowledge.

Second, the multidimensional nature of Islam established in this study highlights the need to view Islam from a broad perspective; Islam might mean different things to different people, and some people might adhere to some of its elements but not to others. Therefore, using a few items (i.e., prayer, masjid attendance) to measure Islamic religiousness fails to capture the multifaceted nature of Islam and may render the results simplistic and uninformative (Pargament, 1997).

Finally, though the findings of the study pointed to the fact that Islam is similar to other religious traditions in many ways, it is distinctive in other ways. Therefore, applying existing psychological theories and conceptual frameworks that have been developed mainly within western cultural contexts to Islam might not fully capture the uniqueness of this religion and might be ethnocentric (Sue, 1992).

### Limitations and Future Directions

Given the dearth of empirical studies conducted among Muslims regarding the link between Islam and physical and mental health, this study should still be considered exploratory. Its main goal was to provide a foundation for future research with Muslims. As such, its results should be considered with caution. More specifically, the results of the study should be interpreted in light of the following limitations. First, larger samples of Muslims are needed to verify the results of this study. Future samples should include Muslims who are less religious and less educated than this sample. Moreover, studies with larger samples of Muslims of different marital status could further distinguish among the "bitter" and the "sweet" of Islam. Second, the results of the present investigation are cross-sectional and consequently do not allow causal inferences; different elements of Islamic religiousness could be the cause or result of well-being. Longitudinal studies are needed to assess the causal connections between Islamic religiousness and well-being. Finally, the study utilized an online survey format and its findings were based on self-report data. Future studies that utilize different research methods (e.g., observer reports, direct observation) would provide further support for the results obtained in this study.

Despite these limitations, the findings of the study point to several directions for future research. First, studies that examine the links between Islam and other variables such as mortality, marital functioning, parenting practices, spiritual well-being, and tolerance/prejudice may help in addressing more comprehensively the connections between Islamic religiousness and the mental, physical, and spiritual well-being of Muslims. Second, given that religious conversion is reportedly popular among Muslims and linked with indices of health and well-being, it might be valuable to further investigate this phenomenon among Muslims. Studies that aim to answer questions such as when Islamic religious conversion typically happens, what are some of the reasons for its occurrence, and whether it applies to specific groups of Muslims, might shed further light on this phenomenon. Finally, comparative studies are needed to discover similarities and differences between Islam and other religious faiths. These studies might help advance the field of psychology of religion and widen our knowledge of the influence of religion on personal well-being.

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