CHAPTER

19

Measures of Religiosity

Harold G. Koenig[1,2], *Faten Al Zaben*[2], *Doaa Ahmed Khalifa*[2] *and Saad Al Shohaib*[2]

[1]Duke University, Durham, NC, USA; [2]King Abdulaziz University, Jeddah, Saudi Arabia

The construct 'religion' is defined as beliefs, practices, and rituals having to do with the 'Transcendent' or the 'Divine'. It is conceived as a multidimensional construct that covers both organizational and non-organizational kinds of activities, as well as personal beliefs, commitments, and experiences. In Western religious traditions, the Transcendent refers to God, Allah, or HaShem. In Eastern traditions, the Transcendent may be manifested as Vishnu or Krishna in Hinduism, or as Buddha in Buddhism. In Buddhism, depending on the particular tradition within Buddhism, the Transcendent is expressed in concepts such as Ultimate Truth or Reality, and may or may not involve Divine entities.

Religion can also involve beliefs about angels, demons, spirits, or other forces that exist outside of the natural world yet interact with humans on various levels. Religion typically includes beliefs about life after death, and how that life is influenced by a person's actions during the present life. These beliefs are organized into doctrines and teachings that serve to guide attitudes and behaviors of members of those organizations to maximize harmony and cooperation within the group. However, as indicated above, people may also have religious beliefs even if they are not members of a religious institution, yet share the beliefs held by members. This might include personal expressions of religiosity such as prayer, scripture reading, or rituals practiced alone or at home. Again, central to the definition of religion is that it involves a set of common beliefs, practices and rituals held by a group of people that are related to the Transcendent (Koenig, King, & Carson, 2012, pp. 35–50).

There are at least 10 major dimensions of religiosity that one should consider in the measurement of religion. The major dimensions of religiosity include belief, religious motivation, organizational religious activities (ORA), non-organizational activities (NORA), attachment to God, trust in God, religious experience, religious coping, religious maturity, and history of lifetime exposure to religion (also see Koenig, 2011, pp. 207–218). Note that only one of these 10 dimensions have to do with institutional religion (organizational religious activity), so one should not equate religiosity with only involvement in organized religion. The 10 dimensions above cover most aspects of religiosity, but they are not exhaustive. All, however, assess constructs that are directly connected with the Transcendent in one way or another, which in our opinion is the hallmark of what it means to be religious.

MEASURES REVIEWED HERE

The following 15 measures assess religiosity, and can be administered to people from a range of different religious backgrounds. Measures of spirituality will be presented briefly in a later section. Historically, most of these measures of religiosity were developed in Protestant and Catholic Christian populations. They apply to most branches of Christianity and even to Jewish and Muslim populations to some extent. However, this is not always the case (see religion-specific measures below).

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There are three classic single dimensional scales that we will briefly mention here so that the reader is aware of them, since they are used frequently in religion-health research. The first is the 7-item Christian Orthodoxy Index that is often used to measure religious belief in Christian traditions (Hill & Hood, 1999, pp. 280, 288–290). The second is the 21-item Religious Orientation Scale (ROS) that assesses both intrinsic and extrinsic religiosity (Hill & Hood, 1999, pp. 144–153), and the third scale is the 10-item Intrinsic Religiosity Scale (IRS) that more succinctly measures intrinsic religiosity (or the extent to which a person's religious faith is the object of their ultimate concern) (Hill & Hood, 1999, pp. 135–137). Even today, the ROS and IRS are some of the best measures for assessing a person's religious commitment.

The Attachment to God Scale (AGS), Trust/Mistrust in God Scale (TMGS), and the Religious Coping Scale (RCOPE) have subscales, but these are single dimensional scales that measure specific aspects of religious involvement (attachment, trust, religious coping). The subscales are not considered separate dimensions, but simply related aspects within each dimension (typically positive or negative aspects, which are often the opposite of each other or represent blocks of negatively or positively worded statements). In contrast, multi-dimensional instruments in this field assess different dimensions of religiosity in one measure – public religious practices, private religious practices, religious commitment, religious motivation, religious coping, etc. The latter are standard and well-accepted dimensions in the research field of religion and health, which may have different aspects to them measured by subscales. The approach we describe here is the same one taken by Hill & Hood in the now standard text on this subject in the field [Measures of Religiosity, 1999, Religious Education Press]. Scales that we examine in depth include the following.

Single Dimensional Scales

1. Attachment to God Scale (Rowatt & Kirkpatrick, 2002)
2. Trust/Mistrust in God Scale (Rosmarin, Pargament, & Mahoney, 2009a; Rosmarin, Pirutinsky, & Pargament, 2011)
3. Daily Spiritual Experiences Scale (Underwood & Teresi, 2002)
4. Religious Coping Index (Koenig, 1994; Koenig et al., 1992)
5. Religious Coping Scale (Pargament, Koenig, & Perez, 2000; Pargament, Smith, Koenig, & Perez, 1998)
6. Faith Maturity Scale (Benson, Donahue, & Erickson, 1993)
7. Religious History Scale (George, 1999)

Multidimensional Scales

1. Duke Religion Index (Koenig, Meador, & Parkerson, 1997a)
2. Springfield Religiosity Scale (Koenig, Smiley, & Gonzales, 1988a)
3. Fetzer Multidimensional Measure of Religiousness/Spirituality (Fetzer Institute, 1999)

Religion Specific Scales

1. JCOPE (Rosmarin, Pargament, & Krumrei, 2009b)
2. Muslim Religiosity Scale (Koenig, Sehlo, Khalifa, & Zaben, 2013)
3. Santosh-Francis Scale of Attitude towards Hinduism (Francis, Santosh, Robbins, & Vij, 2008)
4. Buddhist Beliefs and Practices Scale (Emavardhana & Tori, 1997)
5. New Age Orientation Scale (Granqvist & Hagekull, 2001)

OVERVIEW OF THE MEASURES

The measures described below represent those used today to examine many of the key dimensions of religiosity listed earlier. The criteria used to select these scales were that they were published relatively recently (at least since 1988) and are commonly used in religion-health research today. A third consideration is that the scale was not generally contaminated with items measuring health constructs (especially mental health) to which investigators might wish to relate religiosity. The latter consideration is particularly important since researchers might wish to determine whether religious involvement affects mental, social, behavioral, or physical health.

Some of these measures assess single dimensions, such as the Attachment to God Scale (Rowatt & Kirkpatrick, 2002) and Daily Spiritual Experiences Scale (Underwood & Teresi, 2002), whereas others measure more than one dimension, such as the Duke Religion Index (Koenig et al., 1997a) and the Multidimensional Measure of

Religiousness/Spirituality (Fetzer Institute, 1999). We also describe more general measures of religiosity, such as the Faith Maturity Scale (Benson et al., 1993) and the Religious History Scale (George, 1999) (largely developed within Christian populations) and specific measures that assess religiosity within non-Christian traditions, such as the Santosh-Francis Scale of Attitude Towards Hinduism (Francis et al., 2008) and the Buddhist Beliefs and Practices Scale (Emavardhana & Tori, 1997).

These measures will equip researchers with tools that they can use to investigate the relationships between religious involvement and a wide variety of health outcomes, including mental health, social health, behavioral health, and physical health. Such measures need to be reliable, in that they consistently measure the same thing, and valid, in that they are actually measuring what they claim to measure (and not some other closely related construct). Multi-item measures are also preferred over those that contain only one or two items in order to capture a sufficient variability in response and to cover a wide range of religious belief and activity. This will increase the likelihood of identifying an association between the measure and the health outcome being studied. We now turn to the scales themselves.

SINGLE DIMENSIONAL SCALES

Attachment to God Scale (AGS)

(Rowatt & Kirkpatrick, 2002).

Variable

Attachment to God involves the application of attachment theory to one's relationship with God. The question is whether people's attachment styles (which can be described as secure, anxious, and distant) with God is similar to their attachment styles with human attachment figures (parents, etc).

Description

This 9-item AGS scale assesses attachment to God, and is composed of a 6-item avoidance and a 3-item anxiety subscale. The purpose of the avoidance subscale is to determine whether a person's attachment to God is warm and close, or distant and avoidant. The anxiety subscale seeks to capture whether that attachment is safe and secure, or anxious and insecure. The attachment model on which the scale is based assumes that a healthy relationship with God is one that is close and personal, as well as consistent, predictable and readily available. The items on this scale determine the nature of the person's relationship with God based on these qualities. Responses to each item range on a 7-point Likert-type scale from 1 'not characteristic of me' to 7 'characteristic of me.' Avoidance and anxiety subscales are summed up separately (score range 6–42 for avoidance and 3–21 for anxiety scales). *Lower scores* indicate stronger attachment.

Sample

The AGS was developed using a community sample of 120 adults (76 women; 44 men) whose mean age was 42 years (95% Christian and 5% no affiliation) and 254 undergraduates (176 women; 76 men) whose mean age was 19 years (70% Baptists, Catholics, or other Christians) (Rowatt & Kirkpatrick, 2002).

Reliability

Internal Consistency

Cronbach alpha coefficients were reported for the avoidance and anxiety subscales as 0.92 and 0.80, respectively (Rowatt & Kirkpatrick, 2002).

Test–Retest

To our knowledge, no studies have reported test–retest reliability coefficients to-date.

Validity

Convergent/Concurrent

When items on the avoidance and anxiety subscales were reverse scored, they correlated positively with intrinsic religiosity (0.60 and 0.29, respectively), doctrinal orthodoxy (0.59 and 0.23, respectively), and a loving image of God (0.74 and 0.28, respectively) (Rowatt & Kirkpatrick, 2002).

Divergent/Discriminant

When items were reverse scored, relatively weak correlations were observed between avoidance and anxiety subscales with death anxiety (−0.17 and −0.12, respectively), manifest anxiety (−0.09 and −0.25, respectively), positive affect (0.17 for both avoidance and anxiety subscales), and negative affect (−0.12 and −0.25, respectively) (Rowatt & Kirkpatrick, 2002).

Construct/Factor Analytic

A principal components analysis with oblique rotation ($N = 374$) yielded loadings for the avoidance and anxiety subscales ranging from 0.81 to 0.87 and 0.74 to 0.94, respectively (Rowatt & Kirkpatrick, 2002). Confirmatory factor analyses were carried out via LISREL. With error variances allowed to correlate, the 9-item unidimensional model provided a good fit (AGFI = 0.91, NNFI = 0.97, RMSEA = 0.08, $\chi^2_{(18)} = 57.78$, $p < 0.0001$). Likewise, the two-dimensional model provided a good fit (AGFI = 0.94, NNFI = 0.98, RMSEA = 0.06, $\chi^2_{(18)} = 38.37$, $p < 0.003$).

Criterion/Predictive

The anxiety subscale positively predicts the anxiety dimension of adult attachment ($r = 0.29$), manifest anxiety ($r = 0.25$), neuroticism (0.31), a controlling image of God ($r = 0.35$), and extrinsic religious motivation ($r = 0.38$), whereas it negatively predicts of agreeableness ($r = 0.21$), a loving image of God ($r = 0.28$), and intrinsic religious motivation ($r = 0.29$). The avoidance subscale is similarly predictive of the anxiety dimension of adult attachment ($r = 0.21$), neuroticism ($r = 0.22$), and especially a controlling image of God ($r = 0.55$), and is strongly and (inversely) predictive of a loving image of God ($r = 0.74$), intrinsic religiosity ($r = 0.60$), and doctrinal orthodoxy ($r = 0.59$) (Rowatt & Kirkpatrick, 2002).

Location

Rowatt, W.C., & Kirkpatrick, L.A. (2002). Two dimensions of attachment to God and their relation to affect, religiosity, and personality constructs. *Journal for the Scientific Study of Religion, 41(4)*, 637–651.

Results and Comments

The theoretical importance of assessing attachment to God cannot be overemphasized given its importance as a driving factor for health outcomes related to religious involvement (Koenig et al., 2012). The scale is short and has reasonable face validity, and so appears to provide a good measure of this dimension.

ATTACHMENT TO GOD SCALE

Avoidance Dimension

1. God seems impersonal to me.
2. God seems to have little or no interest in my personal problems.
3. God seems to have little or no interest in my personal affairs.
4. I have a warm relationship with God (R).
5. I feel that God is generally responsive to me (R).

Anxiety Dimension

6. God sometimes seems responsive to my needs, but sometimes not.
7. God's reactions to me seem to be inconsistent.
8. God sometimes seems very warm and other times very cold to me.

Notes:
(R) Reverse scored item.
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Trust/Mistrust in God Scale (TMGS)

(Rosmarin et al., 2009a, 2011).

Variable

The construct 'trust in God' is similar to the construct 'love of God', and involves both positive and negative emotional feelings toward God (Rosmarin et al., 2009a).

Description

Rosmarin and colleagues (2009a) constructed both 16-item and 6-item versions of the TMGS. The scales consist of positive statements about love and trust in God (positive subscale) and negative statements (negative subscale). This measure is based on the work of Rabbi Bachaya entitled *Duties of the Heart*, which describes Jewish philosophical principles regarding human thought and emotion. This work specifically ties trust in the construct of God to decreased anxiety and depression and elevated levels of happiness. Scale development is based on six core beliefs related to trust in God: God has constant regard for all worldly affairs, God has absolute knowledge of people's best interests, no power is greater than God, God must be involved for anything to occur, God is merciful and generous, and God is righteous in judgement. Response options range on a 5-point Likert-type scale from 1 'not at all' to 5 'very much.' Scores are summed after reverse scoring of negatively-worded items (range 16−80 for 16-item version). Positive and negative subscale scores can also be reported separately.

Sample

The full 16-item TMGS scale was developed using a sample of 565 Jewish adults (58% female, mean age 37 years, one-third of whom had a college/university degree). Participants came from a range of Jewish denominations including Hassidic (9%), Orthodox (31%), Conservative (32%), Reform (13%), Reconstructionist (7%), and none 8%. The 6-item short-form of the TMGS scale was developed in three populations via the Internet: 120 Christians (74% female, mean age 34, 81% Protestant), 234 Jewish individuals (55% female, mean age 37, 60% Orthodox), and 262 Jewish individuals with high anxiety recruited from clinical trials (57% female, mean age 41, 49% Orthodox).

Reliability

Internal Consistency

For the 16-item TMGS scale, Cronbach alpha coefficients were reported for the trust (0.96) and for the mistrust subscale (0.76) (Rosmarin et al., 2009a). For the 6-item short-form, alpha coefficients have been high for both the positive subscales (ranging from 0.90 to 0.94) and negative subscales (ranging from 0.68 to 0.90), based on three separate studies reported in the original paper (Rosmarin et al., 2011).

Test−Retest

For the 16-item TMGS scale, four to eight week test−retest reliability was assessed in 140 participants and found to be high (0.93) for the trust subscale and acceptable for the mistrust subscale (0.76) (Rosmarin et al., 2009a). Test−retest reliability coefficients have not been reported for the 6-item short-form to date (to our knowledge).

Validity

Convergent/Concurrent

Significant positive correlations were found between the trust in God scale and prayer, religious attendance, religious study, and recitation of grace after meals (ranging from 0.46 to 0.72) (Rosmarin et al., 2009a).

Divergent/Discriminant

For the full TMGS scale, relatively low correlations have been found (ranging from 0.11 to 0.15) with diverse measures of psychological constructs (depression, anxiety, stress, and happiness). For the 6-item short-form, relatively low correlations have been reported with measures of depression (− 0.25 for trust, 0.31 for mistrust) and anxiety (− 0.18 and 0.22).

Construct/Factor Analytic

For the 16-item scale, a principal axis factor analysis with direct oblimin rotation of the item intercorrelations (selected to measure trust in God) revealed two underlying factors, resulting in a 12-item subscale of positively worded questions (trust) and a 4-item subscale of negatively worded questions (mistrust) (Rosmarin et al., 2009a). For the 6-item short-form, a principal components analysis with direct oblimin rotation of the item intercorrelations yielded loadings for the trust and mistrust subscales ranging from 0.75 to 0.98 and 0.68 to 0.94, respectively (Rosmarin et al., 2011).

> 'The two-factor model ... fit the data well (CFI = .99; NNFI = .98; RMSEA = .07; 90% CI = .66–.78), and provided a significantly better fit than a single factor model. The chi-square value for the overall model was within an acceptable range P2 ($n = 262$) 18.03, $p < .05$), and standardized coefficients were high for both trust (.75–.96) and mistrust (.68–.90) items. These results indicate good psychometric properties, and provide further support for the measure's two-factor structure.' (Rosmarin et al., 2011, pp. 256–258)

Criterion/Predictive

For the full TMGS scale, predictive correlations ranging from 0.46 to 0.72 were reported with prayer, synagogue attendance, religious study, and saying grace after meals. To our knowledge, predictive validity has not been examined for the 6-item short-form to date.

Location

Rosmarin, D.H., Pargament, K.I., & Mahoney, A. (2009a). The role of religiousness in anxiety, depression and happiness in a Jewish community sample: A preliminary investigation. *Mental Health Religion and Culture, 12(2)*, 97–113.

Rosmarin, D.H., Pirutinsky, S., & Pargament, K.I. (2011). A brief measure of core religious beliefs for use in psychiatric settings. *International Journal of Psychiatry in Medicine, 41(3)*, 253–261.

Results and Comments

The TMGS is a reliable and valid measure of a person's trust in God (when items on the mistrust subscale are reverse scored), whether used in Christians or Jews. This is especially true for the full 16-item TMGS scale.

TRUST/MISTRUST IN GOD SCALE

Trust in God

1. God is absolutely powerful.
2. I can't be successful without God's help.
3. Ultimately, there is Divine justice.
4. God is never ignorant of my concerns.
5. God is compassionate towards human suffering.
6. I cannot earn more money than God decrees.
7. None of my thoughts are hidden from God.
8. Nothing can occur without God's involvement in the process.
9. God knows what is in my best interests.
10. God is generous to me even when I don't deserve it.
11. God is constantly aware of what is harmful for me.
12. God rewards those who deserve it (during their lifetimes and/or in the afterlife).

Mistrust in God

13. Sometimes God is unkind to me for no reason.
14. God disregards my activities.
15. God's judgement is unfair.
16. God does not always know what is best for me.

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Daily Spiritual Experiences Scale (DSES)

(Underwood & Teresi, 2002).

Variable

The DSES measures experiences of God's love, presence, guidance, and closeness during daily life (Underwood & Teresi, 2002).

Description

The 16-item DSES is included as part of the NIA/Fetzer Multidimensional Measure of Religiousness/Spirituality booklet (1999). The DSES assesses common daily religious experiences of relationship with God or the transcendent, and positive feelings such as deep inner peace or harmony, sense of connection with others, and self-less caring, which many describe as spiritual feelings. There is both a 16-item form (contained within the MMRS booklet) and a 6-item short version. Response options range on a 6-point Likert-type scale from 1 'many times a day' to 6 'never or almost never,' except for item 16, where the response range is 1 'not at all close' to 4 'as close as possible.' After reverse scoring of item16, summing the scores gives a range of 16–92 for the 16-item scale. *Lower scores* indicate more daily spiritual experiences.

Sample

Four samples were involved in establishing the psychometrics of the DSES: 233 adult women from across the U.S. (60% Caucasian, 53% Catholic and 39% Protestant, mean age 47 years), 45 patients with arthritis pain from Ohio, 122 adults from the Chicago area (58% students, 61% women, mean age 28, 72% Caucasian, 49% Catholic), and 1445 from the 1998 General Social Survey (6-item DSE only) (45% women, 79% white, mean age 46 years). Development of the DSES also included hundreds of qualitative interviews to refine the items and assure construct validity in different populations (Underwood, 2006).

Reliability

Internal Consistency

For the full 16-item version, Cronbach alpha coefficients ranged from 0.91 to 0.95 (based on three samples; $N = 233$, $N = 122$, and $N = 1445$, respectively; Underwood & Teresi, 2002). Likewise, the 6-item short-form exhibited alpha coefficients ranging from 0.88 to 0.92 (Underwood & Teresi, 2002).

Test–Retest

Two-day test–retest reliability (intraclass correlation coefficient) of the full DSES ranged from 0.64 to 0.78 for the individual items (Underwood & Teresi, 2002). The intraclass correlation coefficient for the 6-item short-form was 0.73 (Underwood & Teresi, 2002).

Validity

Convergent/Concurrent

DSES scores have been positively correlated with measures of public religious practices (0.58), private religious practices (0.70), and positive religious coping (0.76) (Idler et al., 2003).

Divergent/Discriminant

Relatively low correlations have been reported with measures of mental health constructs, ranging from 0.16 to 0.39 (Underwood & Teresi, 2002).

Construct/Factor Analytic

A principal components analysis ($N = 233$) of the items in the 16-item DSES suggested a unidimensional scale. Underwood and Teresi (2002, p. 30) concluded that, '*Preliminary EFAs suggest that this scale is unidimensional*.'

Criterion/Predictive

Individuals with no religious affiliation score low on the DSES. Also, there is a predictive correlation with spiritual growth (0.57) and a modest (inverse) predictive correlation with spiritual decline (−0.30) (Cole, Hopkins, Tisak, Steel, & Carr, 2008). See www.dsescale.org/ to find additional information on predictive validity, or the Underwood (2011) paper on the scale, which summarizes the results of over 150 studies.

Location

Underwood, L.G., & Teresi, J.A. (2002). The daily spiritual experience scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. *Annals of Behavioral Medicine, 24(1)*, 22–33.

Underwood, L.G. (2011). The Daily Spiritual Experience Scale: Overview and Results. *Religions*, *2*(1), 29–50.

The 16 item and 6 item versions can be found in Underwood (2011) www.mdpi.com/2077-1444/2/1/29, accessed May 21, 2014.

Results and Comments

The scale contains some items that may represent good mental health in and of themselves (deep inner peace, feeling connected to the wider natural world) and this may affect its discriminant validity. Nevertheless, it appears to be a good scale for assessing religious/spiritual experiences and is one of the few validated scales that does this well. Users of the scale may wish to administer only selected items if any overlap with mental health is of concern; however, be aware that the scale was developed to consciously include a variety of items that describe experience of relationship with the transcendent for people of many religious beliefs and those who may not call themselves religious.

DAILY SPIRITUAL EXPERIENCES SCALE

Instructions: The list that follows includes items you may or may not experience. Please consider how often you directly have this experience, and try to disregard whether you feel you should or should not have these experiences. A number of items use the word 'God.' If this word is not a comfortable one for you, please substitute another word that calls to mind the divine or holy for you.

	Many times a day	Every day	Most days	Some days	Once in a while	Never
1. I feel God's presence.						
2. I experience a connection to all of life.						
3. During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.						
4. I find strength in my religion or spirituality.						
5. I find comfort in my religion or spirituality.						
6. I feel deep inner peace or harmony.						
7. I ask for God's help in the midst of daily activities.						
8. I feel guided by God in the midst of daily activities.						
9. I feel God's love for me, directly.						
10. I feel God's love for me, through others.						
11. I am spiritually touched by the beauty of creation.						
12. I feel thankful for my blessings.						
13. I feel a selfless caring for others.						
14. I accept others even when they do things I think are wrong.						
15. I desire to be closer to God or in union with the divine.						

	Not at all	Somewhat close	Very close	As close as possible
16. In general, how close do you feel to God?				

Religious Coping Index (RCI)

(Koenig, 1994; Koenig et al., 1992).

Variable

General religious coping (RC) is the extent to which a person uses religious beliefs and practices to cope with stress (Koenig et al., 1992). This particular variable is a global assessment of the degree to which a person relies on their religious faith to adapt and adjust to life stressors (compared with more specific ways of measuring religion as a coping mechanism developed by Pargament et al., 1998, 2000).

Description

The RCI is a 3-item measure of overall religious coping. This measure needs to be interviewer administered, since one of the three items requires interaction with the participant (see below). Each item has a maximum score of 10, and the total RCI score ranges from 0 to 30.

Sample

The RCI was developed in a medically ill sample of consecutively hospitalized male veterans aged 65 years or older ($N = 850$) or aged 18 to 40 years ($N = 161$) in North Carolina (Koenig, 1994). The majority of the sample comprised Conservative Protestants (38%) and Black Protestants (25%).

Reliability

Internal Consistency

A Cronbach alpha coefficient of 0.82 has been reported (Koenig et al., 1992).

Test–Retest

When the RCI was re-administered to 188 adults on separate occasions 24 hours apart by different interviewers with different religious backgrounds, the test–retest reliability correlation was found to be 0.81 (Koenig et al., 1992).

Validity

Convergent/Concurrent

The RCI correlates positively with measures of the importance of religion (0.84) (Meisenhelder & Chandler, 2002).

Divergent/Discriminant

Negative correlations have been reported between RCI scores and negative mental health states such as depressive symptoms (ranging from −0.14 to −0.16) (Koenig et al., 1992).

Construct/Factor Analytic

Factor analysis is not applicable for this 3-item scale.

Criterion/Predictive

Scores on the RCI are only marginally predictive of older age (0.05), Black race (0.15), being married (0.06), low rates of alcohol use (− 0.16), and are positively correlated with fundamentalist/evangelical affiliation (0.17) and negatively correlated with no religious affiliation (− 0.15).

Location

Koenig, H.G., Cohen, H.J., Blazer, D.G., Pieper, C., & Meador, K.G., Shelp, F., Goli, V., & DiPasquale, R. (1992). Religious coping and depression in elderly hospitalized medically ill men. *American Journal of Psychiatry, 149(12)*, 1693–1700.

Koenig, H.G. (1994). *Aging and God* (pp. 161–187). Binghamton, NY: Haworth.

Results and Comments

The RCI has been shown to predict fewer depressive symptoms in hospitalized patients in both cross-sectional and longitudinal studies (Abernethy et al., 2002; Koenig et al., 1992), as well as lower use of health services (Pearce et al., 2002). Several studies have used only the first one or two items of the RCI, eliminating the need for an interviewer (Krause, Ellison, Shaw, Marcum, & Boardman, 2001; Pearce et al., 2002).

RELIGIOUS COPING INDEX

1. 'How do you manage to cope with your situation? In other words, how do you keep yourself from getting depressed, sad, or discouraged, despite your current situation?'
   [*score 10 if religious, 0 if not religious*]
2. 'Do your religious beliefs or activities help you to cope with or handle your situation? Here is a scale ranging from 0 to 10. On this scale, 0 indicates that you do not use religion at all to cope and 10 indicates that religion is the most important thing that keeps you going. Please mark on this scale the extent to which you use religious belief or activity to help you to cope with or handle your situation.'
   [*subject marks on 0 to 10 visual analogue scale the extent to which he/she uses religion to cope*]
3. In the third item, the interviewer rates the subject's degree of religious coping based on a discussion with the subject about how he or she uses religion to cope. When was the last time religion was used to cope? What exactly was done? How frequently is religion used to cope in this way? All responses are recorded verbatim.
   [*interviewer rates on a 0 to 10 scale the extent to which the interviewer perceives that the subject uses religion to cope*]

Scoring: Sum scores on three items; score range 0–30, with higher scores indicating greater religious coping.

Note: No permission is required to use the RCI measure, although notification of the author is encouraged (contact Harold Koenig at: Harold.Koenig@duke.edu).

Religious Coping Scale (RCOPE)

(Pargament et al., 2000; Pargament et al., 1998).

Variable

Religious coping is assessed here by measuring specific ways that people use religion to cope, both positive and negative ways, an approach developed by Pargament and colleagues (see Pargament et al., 1998).

Description

The RCOPE consists of three versions, and all have been used extensively in research examining religion and health. The long version includes 100 items, a shorter version (Brief RCOPE) has 14 items, and the shortest version has only six items. The long version consists of 17 subscales (3 to 10 items per subscale, each rated on a 0–3 scale), which examine RC methods to find meaning in the stressful situation, gain control, gain comfort and closeness to God, gain intimacy with others, and achieve life transformation (Pargament et al., 2000). The 14-item Brief RCOPE consists of two 7-item subscales that assess positive RC and negative RC (Pargament et al., 1998). A 6-item short version contained within the Fetzer Institute (1999) MMRS consists of a 3-item positive and a 3-item negative RC subscale. Responses range from 1 'not at all' to 4 'a great deal.' Scores for positive and negative items are summed separately; for the 14-item brief RCOPE, scores range from 7–28 for each subscale.

Sample

The RCOPE scales were developed using a sample of college students in Ohio ($N = 540$, 69% female, 93% Caucasian, 70% freshman, 45% Catholic and 41% Protestant) and medically ill hospitalized patients ($N = 551$, 48% female, mean age 58 years, 62% Caucasian, mostly Protestant and Baptist) in North Carolina (Pargament et al., 2000). At least one study ($N = 305$) has examined the psychometric properties of the RCOPE in adolescents (Harris et al., 2008).

Reliability

Internal Consistency

For the 100-item 17 subscale RCOPE, Cronbach alpha coefficients were 0.80 or greater for all but two subscales (Pargament et al., 2000). For the 14-item Brief RCOPE, alpha coefficients were 0.90 for positive RC subscale and 0.81 for the negative RC subscale in a college sample, and 0.87 and 0.69, respectively, in an older hospitalized sample (Pargament et al., 1998). When a 10-item RCOPE (5-item positive and 5-item negative subscales) was assessed in an adolescent sample aged 12−18 years, the alpha coefficients were 0.88 and 0.54, respectively (Harris et al., 2008). For the 6-item RCOPE, in a general community sample ($N = 1445$), alpha coefficients were 0.81 for the 3-item positive RC subscale and 0.54 for the 3-item negative RC subscale (Idler et al., 2003).

Test−Retest

One week test−retest reliability for the 10-item RCOPE in the adolescent sample described above was 0.86 and 0.58 for positive and negative subscales, respectively (Harris et al., 2008). To our knowledge, test-retest reliability has not been reported for the 100-, 14-, or 6-item versions of the RCOPE.

Validity

Convergent/Concurrent

Scores on the 100-item RCOPE version are positively correlated with similar constructs such as religious growth/outcome (0.61). The 14-item RCOPE positive subscale also correlates positively with religious growth/outcome (0.58 to 0.73).

Divergent/Discriminant

The negative subscale has little/no correlation with religious growth/outcome (0.09). There are weak correlations between the 100-item RCOPE positive subscale scores and psychosocial constructs such as mental health measured via the General Health Questionnaire (GHQ, where higher scores indicate worse mental health) (0.00 to −0.14), current distress level (0.00 to −0.04), and physical health (−0.08 to 0.09) (Pargament et al., 2000). Negative subscale scores are weakly related to the GHQ (0.01 to 0.17), current distress (0.01 to 0.20), and to physical health (−0.02 to −0.18). This is also true for the 14-item RCOPE, where the positive subscale correlates weakly with emotional distress (0.01 to 0.04), GHQ (−0.10), and callousness (0.08), and negative subscale correlates weakly with emotional distress (0.00 to 0.18), stress-related growth (0.13), and GHQ mental distress (0.13) (Pargament et al., 1998).

Construct/Factor Analytic

A principal components analysis of the intercorrelations of the 100-item RCOPE revealed 17 components with loadings ranging from −0.83 to 0.87 in a student sample ($N = 540$) (Pargament et al., 2000). A principal components analysis of the full RCOPE was constrained to two dimensions (most of the items on the different subscales could be classified as either positive or negative methods of religious coping), and items were chosen based on those with the largest loadings to create the 14-item Brief RCOPE. Component loadings ranged from 0.53 to 0.78 for the positive subscale and 0.51 to 0.83 for the negative subscale (Pargament et al., 1998).

Criterion/Predictive

Positive religious coping is strongly predictive of measures of spiritual growth (0.34 to 0.62), whereas negative religious coping is inversely predictive of measures of spiritual growth (−0.20 to −0.41) (Koenig, Pargament, & Nielsen, 1998).

Location

Pargament, K.I., Koenig, H.G., & Perez, L.M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology, 56 (4)*, 519−543.

Pargament, K.I., Smith, B.W., Koenig, H.G., & Perez, L.M. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion, 37 (4)*, 710−724.

Results and Comments

The RCOPE scales have now been used in at least 100 studies examining health outcomes. The 14-item Brief RCOPE has particular utility in that it assesses both positive and negative ways of coping, and the 7-item

negative subscale (especially) has been associated with both mental and physical health outcomes, including mortality and immune function.

BRIEF RCOPE

Positive religious coping

1. I looked for a stronger connection with God.
2. I sought God's love and care.
3. I sought help from God in letting go of my anger.
4. I tried to put my plans into action together with God.
5. I tried to see how God might be trying to strengthen me in the situation.
6. I asked forgiveness for my sins.
7. I focused on religion to stop worrying about my problems.

Negative religious coping

8. I wondered whether God had abandoned me.
9. I felt punished by God for my lack of devotion.
10. I wondered what I did for God to punish.
11. I questioned God's love for me.
12. I wondered whether my church had abandoned me.
13. I decided the Devil made this happen.
14. I questioned the power of God.

Note: Reproduced with permission.

Faith Maturity Scale (FMS)

(Benson et al., 1993).

Variable

Religious maturity is the degree to which individuals have achieved a life that exemplifies the teachings of their religious faith (Benson et al., 1993).

Description

The FMS seeks to assess the 'priorities, commitments, and perspectives characteristic of a vibrant and life transforming faith' (Benson et al., 1993, p. 3). This measure is grounded within mainline Protestant Christianity. The scale contains 38 statements, which produces a global faith maturity score (FMS-T) and two subscale scores (vertical and horizontal dimensions) (FMS-V and FMS-H). Many items focus on altruistic attitudes and behaviors, consistent with mainline Christianity, although several include statements that reflect the mental and physical health consequences of a mature faith (rather than assessing exactly what a mature faith is). Response options range from 1 'never true' to 7 'always true.' Scores on each subscale are summed separately or combined together (after reverse scoring several items); score range is 38–266 if combined, with higher scores indicating greater faith maturity.

Sample

The FMS was examined in members of a nationally representative sample of U.S. congregations, involving adolescents, adults, Christian education teachers and coordinators, and pastors, with samples ranging in size from 404 Christian education coordinators to 3582 adults (Southern Baptists were excluded). Psychometric characteristics were also examined in a sample of 251 young adults at the University of Kentucky (Salsman & Carlson, 2005).

Reliability

Internal Consistency

Cronbach alpha coefficients ranged from 0.84 to 0.90 in the original study (Benson et al., 1993).

Test–Retest

To our knowledge, no test–retest reliability coefficients have been reported to date.

Validity

Convergent/Concurrent

FMS-V is strongly correlated with measures of intrinsic religiosity (0.80), whereas FMS-H is less strongly correlated with intrinsic religiosity (0.39) (Salsman & Carlson, 2005).

Divergent/Discriminant

FMS-V is weakly and inversely related to symptoms of mental distress (−0.11 to −0.23), whereas FMS-H is weakly and more likely to be positively related to distress (−0.07 to +0.19). FMS-V is weakly related to Quest (−0.12 and 0.13, respectively) (Salsman & Carlson, 2005).

Construct/Factor Analytic

A principal components analysis ($N = 2196$) (Christians) identified two dimensions with loadings ranging from 0.60 to 0.89 (Hui et al., 2011).

Criterion/Predictive

Religious ministers scored highest on the FMS global measure as compared with other groups in the original study (Benson et al., 1993).

Location

Benson, P.L., Donahue, M.J., & Erickson, J.A. (1993). The Faith Maturity Scale: Conceptualization, measurement, and empirical validation. In M.L. Lynn & D.O. Moberg (Eds.), *Research in the social scientific study of religion* (Vol. 5, pp. 1–26). Greenwich, CT: JAI Press.

Hill, P.C. & Roof, W.C. (1999). *Measures of religiosity* (pp. 172–173). Birmingham, AL: Religious Education Press.

Results and Comments

The FMS scale has not been used very often in religion-health research, although this measure has good face validity, high internal consistency (Benson et al., 1993), and the FMS-V subscale is highly correlated with measures of intrinsic religiosity (Salsman & Carlson, 2005).

FMS SAMPLE ITEMS

Items included in the scale ask questions about how faith affects the way the person thinks and acts each day (FMS-V) and to what extent the person is active in social justice issues (FMS-H). For example, statements for the FMS-V are those like 'My religious beliefs affect how I think and act in my everyday affairs' and 'In my daily life I constantly see evidence that God is involved in the world' (similar but not directly quoted). Examples of statements on the FMS-H are 'I am worried that our country doesn't do much to help the poor' and 'I feel responsible for doing something to relieve suffering in the world' (similar but not directly quoted).

Note: Permission from the Fuller Youth Institute is required to use the FMS scale http://fulleryouthinstitute.org/ (Retrieved May 21, 2014).

Religious History Scale (RHS)

(George, 1999).

Variable

Religious history involves degree of exposure to religious belief and practices across the life span (George, 1999).

Description

The 20-item RHS (brief religious history) measure, which is included within the Fetzer Institute MMRS, seeks to quantitatively assess lifetime exposure to religion. Items ask about religious transitions and the age at which these transitions occurred, as well as about the frequency of participation in religious activities at various ages. Both a 24-item long form (with multiple sub-questions depending on responses) and a two item short form of the scale exist (see below). For the long form, response options for the brief religious history section are 1 'low', 2 'medium', and 3 'high' for each question. For the 5-item history as a child section, the score range is 5–15 overall; for the 15-item history as an adult section, the score range is 5–15 for each of the three religious involvement

sections, with an overall 15–45 range. Adding child and adult history sections produces a total score with a range of 20–60 for the brief religious history section.

Sample

A three-item version was administered to an adolescent sample in Boston ($N = 305$; aged 12–18 years; 34% Catholic, 29% Christian/Protestant, 11% none; 67% female; 34% Black, 40% Hispanic, 15% Caucasian) (Harris et al., 2008).

Reliability

Internal Consistency

When administered in the adolescent sample above, that 3-item version of the religious history scale was found to have a Cronbach alpha coefficient of 0.86 (Harris et al., 2008).

Test–Retest

The 1-week test–retest reliability coefficient for the 3-item version based on a sample of 93 adolescents was 0.45 (Harris et al., 2008).

Validity

Convergent/Concurrent

Certain items on the religious history scale, such as having a life-changing religious experience and being a born-again Christian, are positively correlated with other religious measures ranging from 0.32 to 0.47 and 0.37 to 0.49, respectively (Idler et al., 2003).

Divergent/Discriminant

Discriminant validity is suggested by a very low correlation with negative religious coping (0.06), although to our knowledge, there is no information available on relationships with non-religious psychosocial variables.

Construct/Factor Analytic

To our knowledge, factor analysis has not been carried out on this scale to-date.

Criterion/Predictive

To our knowledge, no information is available on criterion/predictive validity.

Location

George, L.K. (1999). Religious/spiritual history. In *Multidimensional measurement of religiousness/spirituality for use in health research* (pp. 68–69). Kalamazoo, MI: Fetzer Institute.

Results and Comments

The internal consistency of the 3-item RHS used in adolescents is solid (0.86) and test–retest reliability is adequate (0.45) (Harris et al., 2008). The fact that it is only moderately correlated with other measures of religiosity suggests that instrument may be measuring something distinctive that other measures are not capturing (Idler et al., 2003). Although psychometric characteristics need to be developed for the long form of the RHS in adults, this is probably the best scale available that attempts to measure lifetime exposure to religion.

Permission is not required for use of the RHS scale.

RELIGIOUS/SPIRITUAL HISTORY – SHORT FORM

Did you ever have a religious or spiritual experience that changed your life?

1) No **2)** Yes

If YES, How old were you when this experience occurred? ___

Notes: www.gem-beta.org/public/DownloadMeasure.aspx?mid = 1155. (Retrieved September 26, 2013). Reproduced with permission.

MULTIDIMENSIONAL SCALES

Duke University Religion Index (DUREL)

(Koenig et al., 1997a).

Variables

Organizational religious activity (ORA), non-organizational religious activity (NORA), and intrinsic religiosity (IR) are assessed with the DUREL. ORA involves religious behaviors performed in a group or social setting; NORA are behaviors performed alone or in private; and IR involves the subjective or cognitive aspect of religious motivation (Koenig & Futterman, 1995).

Description

The 5-item DUREL assesses the three major dimensions of religiosity (ORA, NORA, and IR or subjective religiosity) identified during a National Institute on Aging–Fetzer Institute Consensus Conference (Koenig & Futterman, 1995). The index is designed for large epidemiological studies that have little room in their questionnaires to assess religiosity.

Sample

The first two items of the DUREL (ORA and NORA) were administered to two random community samples of 2962 adults of all ages and 3968 adults aged 65 years or over (Koenig, 1997). The 10-item Hoge Intrinsic Religiosity (IR) scale was administered to a consecutive series of 455 hospitalized adults aged 60 years or over (Koenig, George, & Peterson, 1997b). Three items from the Hoge scale were chosen for the IR dimension of the DUREL based on their loadings on the intrinsic component, correlation with the total score, and relationship with health outcomes (depressive symptoms, severity of medical illness, functional status, social support, and speed of recovery from depression).

Reliability

Internal Consistency

Cronbach alpha coefficients ranged from 0.78 to 0.91 across multiple studies and samples (Koenig & Bussing, 2010).

Test–Retest

The two-week test–retest reliability (intraclass correlation coefficient) was found to be 0.91 (Storch, Strawser, & Storch, 2004a).

Validity

Convergent/Concurrent

Strong positive correlations have been demonstrated with other measures of religiosity (0.71 to 0.86) (Koenig & Bussing, 2010).

Divergent/Discriminant

Relatively weak correlations between the three subscales and depression (−0.15 to 0.03), social support (0.08 to 0.24), and physical health outcomes (−0.20 to 0.04) have been reported (Koenig & Bussing, 2010).

Construct/Factor Analytic

Studies vary on how many factors have been identified for the index. A principal components analysis based on the item intercorrelations of the scale in a sample of 628 college students identified a single component with loadings ranging from 0.85 to 0.91 (Storch et al., 2004b). Likewise, a study of 557 medical students in Iran using the Farsi version of the scale found that a principal components analysis revealed a single factor with factor loadings ranging from 0.72 to 0.89 (Hafizi et al. 2013). However, a recent study conducted in China using the Chinese version of the scale revealed three factors, which is consistent with theoretical expectations (Wang, Sun, Rong, Zhang, & Wang, 2013). In the Chinese sample of 1285 college students and 387 community residents, exploratory factor analysis revealed the following variances explained: Factor 1 (ORA) 55.0% in students and 61.5% in

community residents; Factor 2 (NORA) 19.7% and 16.5%, respectively; and Factor 3 (IR) 11.3% and 10.4%, respectively.

Criterion/Predictive

The three-item intrinsic religiosity subscale is strongly predictive of scores on the original 10-item Hoge IR scale ($r = 0.85$) (Koenig & Bussing, 2010).

Location

Koenig, H.G., Meador, K.G., & Parkerson, G. (1997). Religion index for psychiatric research: A 5-item measure for use in health outcome studies. *American Journal of Psychiatry, 154(6)*, 885–886.

Results and Comments

Scores on the three dimensions of the DUREL have been shown to predict multiple health outcomes in both cross-sectional and longitudinal studies. It is available in Spanish, Portuguese, Chinese, Romanian, Japanese, Thai, Persian, Hebrew, German, Norwegian, Dutch, Danish, Italian, Malaysian, Filipino, Serbian, and Tamil.

DUKE RELIGION INDEX

'Please circle the number in front of the answer that most accurately describes your usual behavior or belief (circle only one answer for each question).'

(1) How often do you attend church or other religious meetings?
- **1.** More than once/week
- **2.** Once a week
- **3.** A few times a month
- **4.** A few times a year
- **5.** Once a year or less
- **6.** Never

(2) How often do you spend time in private religious activities, such as prayer, meditation or Bible study?
- **1.** More than once a day
- **2.** Daily
- **3.** Two or more times/week
- **4.** Once a week
- **5.** A few times a month
- **6.** Rarely or never

'The following section contains 3 statements about religious belief or experience. Please mark the extent to which each statement is true or not true for you.'

(3) In my life, I experience the presence of the Divine (i.e., God).
- **1.** Definitely true of me
- **2.** Tends to be true
- **3.** Unsure
- **4.** Tends *not* to be true
- **5.** Definitely *not* true

(4) My religious beliefs are what really lie behind my whole approach to life.
- **1.** Definitely true of me
- **2.** Tends to be true
- **3.** Unsure
- **4.** Tends *not* to be true
- **5.** Definitely *not* true

(5) I try hard to carry my religion over into all other dealings in life.
- **1.** Definitely true of me
- **2.** Tends to be true
- **3.** Unsure
- **4.** Tends *not* to be true
- **5.** Definitely *not* true

Scoring: Reverse score all items; score range for ORA (1) is 1–6, NORA (2) is 1–6, and IR (3–5) is 3–15; total score range 5–27 (but researchers should analyze each dimension separately).

Note: Permission is not required, but notification of the author is encouraged (contact Harold Koenig at the following email address: Harold.Koenig@duke.edu).

Springfield Religiosity Scale (SRS)

(Koenig et al., 1988a).

Variables

The SRS assesses multiple dimensions of religiosity, including affiliation, orthodoxy of belief, organizational religious activity (ORA), non-organizational religious activity (NORA), religious support, religious knowledge, religious experience, intrinsic religiosity (IR), and desire to have prayer with a physician (Koenig et al., 1988a).

Description

This 34-item measure is a compilation of existing scales and individual items that is used to comprehensively assess religiosity, largely within the Christian tradition. There is also an abbreviated 15-item version that assesses the above dimensions, although excludes religious affiliation, belief, experience, knowledge, and desire for prayer.

Sample

The full 34-item SRS was administered to 106 older adults seen in a geriatric medicine clinic (mean age 74) and 87 pastors, priests, and rabbis from the community (Koenig et al., 1988a). The abbreviated 15-item version of the SRS was administered to 836 community-dwelling older adults (including a group of retired Catholic sisters, older church members, and senior center participants) (Koenig, Kvale, & Ferrel, 1988b).

Reliability

Internal Consistency

Cronbach alpha coefficients of the abbreviated version of the SRS obtained in the study of 836 older adults were 0.61 for ORA, 0.63 for NORA, and 0.87 for IR subscales (Koenig et al., 1988b).

Test–Retest

Although test–retest correlations were not quantified, the six-week test–retest reliability in a small sample of 11 persons aged 60–92 years indicated >90% agreement. Highest stability was found for religious well-being (97%) and for intrinsic religiosity (91%), whereas the lowest stability was for organizational religious activity (76% agreement) (Koenig et al., 1988a).

Validity

Convergent/Concurrent

Average scores on the ORA, NORA, and IR subscales were compared between 183 retired Catholic sisters, 224 older church members, 95 geriatric clinic patients, and 318 older adults attending senior centers, with significantly higher scores achieved in the sisters and geriatric clinic patients (Koenig et al., 1988b). The 10-item intrinsic religiosity subscale (Hoge IR scale) was administered to 86 ministers representing 18 Christian denominations and two Jewish groups, who were asked to respond to the items as a truly religious person would and a mean score of 46.5 out of a maximum possible of 50 was the result (Koenig et al., 1988a). Positive intercorrelations exist between the various subscales (0.58 to 0.62) (Koenig et al., 1988b).

Divergent/Discriminant

Modest correlations have been reported between the three subscales of the 15-item SRS and psychological, social, and physical health measures (Koenig et al., 1988b). The IR subscale is weakly correlated with subjective coping (0.12), social support (0.09), and subjective health (0.03). Similar correlations have been found with the NORA subscale (0.12, 0.05, and −0.04, respectively), as well as correlations with the ORA subscale (0.14, 0.12, and 0.08, respectively). Discriminant correlation coefficients are similarly weak for the 34-item version (Koenig, Moberg, & Kvale, 1988c).

Construct/Factor Analytic

A principal components analysis of the 34-item version identified seven components (intrinsic religiosity, orthodoxy of belief, religious well-being, a communal factor that included number of friends in congregation, a negative factor with negatively worded items, and a factor on which the rest of the items loaded). A principal components analysis of the 15-item version revealed three dimensions (labeled: intrinsic religiosity, extrinsic religiosity, and religious ritual, respectively). Component loadings were not reported, however (Koenig et al., 1988a).

Criterion/Predictive

No information is currently available on criterion/predictive validity.

Location

Koenig, H.G., Smiley, M., & Gonzales, J. (1988). *Religion, health, and aging* (pp. 171–187). Westport, CT: Greenwood.

Results and Comments

Several studies have reported relationships with physical and mental health using the long version (Koenig et al., 1988b) and the abbreviated version (Koenig et al., 2004; Koenig et al., 1988c). This is a reasonable measure to use when questionnaire space is not an issue and a comprehensive measure is needed.

SPRINGFIELD RELIGIOSITY SCALE (ABBREVIATED VERSION)

Organizational Religious Activities (ORA)

1. How often do you attend church services?
   1. Several times a week
   2. About once a week
   3. Several times a month
   4. Several times a year
   5. Seldom
   6. Never
2. How often do you participate in other religious group activities (i.e., adult Sunday school classes, Bible study groups, prayer groups, etc.)?
   1. Several times a week
   2. About once a week
   3. Several times a month
   4. Several times a year
   5. Seldom
   6. Never

Nonorganizational Religious Activities (NORA)

3. How often do you pray privately?
   1. Not at all
   2. Only occasionally
   3. Several times a week
   4. Once a day
   5. Twice a day
   6. Three or more times a day
4. How often do you read the Bible or other religious literature (magazines, papers, books) at home?
   1. Several times a day
   2. Daily
   3. Several times a week
   4. Several times a month
   5. Only occasionally
   6. Not at all
5. How often do you listen to or watch religious programs on radio or TV?
   1. Not at all
   2. Only occasionally
   3. Several times a month
   4. Several times a week
   5. Daily
   6. Several times a day

Intrinsic Religiosity (IR) (adapted from Hill & Hood, 1999, pp. 135–137)

6. My faith involves all of my life
   1. Definitely not true of me
   2. Tends not to be true
   3. Unsure
   4. Tends to be true
   5. Definitely true of me
7. In my life, I experience the presence of the divine (that is, of God).
   1. Definitely not true of me
   2. Tends not to be true
   3. Unsure
   4. Tends to be true
   5. Definitely true of me
8. Although I am a religious person, I refuse to let religious considerations influence my everyday affairs.
   1. Definitely not true of me
   2. Tends not to be true
   3. Unsure
   4. Tends to be true
   5. Definitely true of me
9. Nothing is as important to me as serving God as best I know how.
   1. Definitely not true of me
   2. Tends to be true
   3. Unsure
   4. Tends to be true
   5. Definitely true of me
10. My faith sometimes restricts my actions.
    1. Definitely not true of me
    2. Tends to be true
    3. Unsure
    4. Tends to be true
    5. Definitely true of me
11. My religious beliefs are what really lie behind my whole approach to life.
    1. Definitely not true of me
    2. Tends not to be true
    3. Unsure
    4. Tends to be true
    5. Definitely true of me

12. I try hard to carry my religion over into all my other dealings in life.
    1. Definitely not true of me
    2. Tends not to be true
    3. Unsure
    4. Tends to be true
    5. Definitely true of me
13. One should seek God's guidance when making every important decision.
    1. Definitely disagree
    2. Tend to disagree
    3. Unsure
    4. Tend to agree
    5. Definitely agree
14. Although I believe in religion, I feel there are many more important things in life.
    1. Definitely disagree
    2. Tend to disagree
    3. Unsure
    4. Tend to agree
    5. Definitely agree
15. It doesn't matter so much what I believe as long as I lead a moral life.
    1. Definitely disagree
    2. Tend to disagree
    3. Unsure
    4. Tend to agree
    5. Definitely agree

Scoring: First, reverse score items 1, 2, 4, 8, 14, and 15. Then add up score for each subscale: Score range for ORA (items 1–2) is 2–12, NORA (items 3–5) is 3–18, and IR (items 6–15) is 10–50; total score range 15–77 (but should analyze each of these three dimensions separately, not combine them into a single score).

Note: The full 34-item SRS measure is published in the original source (Koenig et al., 1988a) or can be obtained directly from the author (contact Harold Koenig at the following email address: Harold.Koenig@duke.edu).

Multidimensional Measure of Religiousness/Spirituality (MMRS)

(Fetzer Institute, 1999).

Variables

The MMRS measures multiple dimensions, besides religious affiliation, including daily spiritual experiences (DSE), beliefs/values (BV), organizational activity (ORA), non-organizational activity (NORA), religious coping (RC), religious support (RS), religious history (RH), religious commitment (RCM), and religious/spiritual self-ratings (SR) (Fetzer Institute, 1999). Also measured are health outcomes that are not aspects of religiosity or spirituality, *per se*, including meaning (M), human values (HV), and forgiveness (F).

Description

There is both a long version (MMRS) and a brief version (BMMRS). The BMMRS was administered to a large U.S. national random sample of adults during the 1998 General Social Survey (GSS) ($N = 1445$) (Idler et al., 2003). As a result, there are excellent national norms available for 33 items contained in 10 of the subscales (Fetzer Institute, 1999).

Sample

The GSS sample (Idler et al., 2003) consisted of 1445 community-dwelling adults. Characteristics of the sample were the following. Religious affiliation was 54% Protestant, 26% Catholic, 2% Jewish, and 14% no religious affiliation; age range 18 to 65 years; 52% women; 14% African-American; and 55% currently married. The BMMRS was also administered to an adolescent sample in Boston ($N = 305$; aged 12–18 years; 34% Catholic, 29% Christian/Protestant, 11% none; 67% female; 34% Black, 40% Hispanic, 15% Caucasian) (Harris et al., 2008). Finally, the BMMRS was administered to college students at Syracuse University in New York ($N = 374$; aged 18 to 40 years; 34% Catholic, 20% Protestant, 15% Jewish) (Masters et al., 2009).

Reliability

Internal Consistency

For the GSS sample, Cronbach alpha coefficients were reported for the BMMRS subscales as follows: ORA (0.82), NORA (0.72), RS (0.64–0.86), RC (0.54–0.81), SR (0.77), DSE (0.91), BV (0.64), and F (0.66) (Idler et al., 2003). For the

adolescent sample, for the BMMRS subscales, alpha coefficients were found to be: ORA (0.73), NORA (0.76), RS (0.92), RC (0.54–0.88), SR (0.75), DSE (0.93), F (0.68), RH (0.45), and RCM (0.59) (Idler et al., 2003).

Test–Retest

To our knowledge, test-retest reliability is available only for the adolescent sample, in which the BMMRS was re-administered to 93 adolescents one week later. The intraclass correlation coefficients for the subscales were ORA (0.90), NORA (0.87), RS (0.95), RC (0.80), SR (0.78), DSE (0.93), F (0.81), RH (0.86), and RCM (0.73) (Harris et al., 2008).

Validity

Convergent/Concurrent

Among the adolescent sample, most BMMRS subscale scores were significantly higher among adolescents who reported a religious affiliation compared to those reporting their affiliation as none or atheist, after controlling for demographic variables (Harris et al., 2008). Furthermore, subscale scores for those who indicated 'don't know' or 'confused' were in between those with a religious affiliation and atheists/none. Likewise, in the community sample, BMMRS subscale scores were moderately to strongly related to hours spent doing religious activities at home, hours spent doing religious services outside the home, and strength of religious affiliation (with correlations as high as 0.61) (Idler et al., 2003).

Divergent/Discriminant

In the adolescent sample, correlations between BMMRS subscales and depressive symptoms ranged from −0.01 to −0.20 for positive subscales and from 0.17 to 0.37 for negative subscales (Harris et al., 2008). In the college sample, correlations of BMMRS subscales with the Brief Marlowe–Crowne Social Desirability Scale were weak, ranging from −0.5 to 0.07, with the only exception being a Punishing God factor (see below) (− 0.21) (Masters et al., 2009)

Construct/Factor Analytic

In the community sample, a principal components analysis identified two major components, one that contained all of the public and private practices and the other consisting of religious commitment (Idler et al., 2003). A principal components analysis with oblique rotation in the college sample, however, revealed seven components (comforting faith, negative religious interaction, personal spirituality, punishing God, religious community support, private religious practices, and forgiveness) with loadings ranging from 0.51 to 0.92 (Masters et al., 2009).

Location

Fetzer Institute (1999). Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging Working Group. Kalamazoo, MI: Fetzer Institute.

Results and Comments

The BMMRS (or individual subscales) have been used in many studies and correlated with a range of mental and physical health outcomes. However, some of the BMMRS subscales are contaminated by mental health outcomes. These include the Forgiveness, Values, and Meaning subscales, as well as some items on the Daily Spiritual Experiences (DSE) subscale. Furthermore, there is relatively little research on the psychometric characteristics of the BMMRS on adults in the general population.

We do not report all of the items on the BMMRS here. To illustrate the kinds of items included in this measure, we present questions that ask about belief in life after death (Beliefs), frequency of prayer (Private Religious Practices), and support received in a religious congregation (Religious Support). Below are examples of items in each of these scales:

BMMRS SAMPLE ITEMS

Beliefs

1. Do you believe in life after death?
2. I feel that it is important for my children to believe in God.

Private Religious Practices

1. How often do you pray privately in places other than church or synagogue?
2. How often do you read the Bible or other religious literature?

Religious Support

1. How often do the people in your congregation make you feel loved and cared for?
2. How often do you make the people in your congregation feel loved and cared for?

Note. No permission is needed to use the BMMRS measure or the individual subscales. *www.gem-beta.org/public/DownloadMeasure.aspx?mid = 1155* (Retrieved May 24, 2014).

RELIGION SPECIFIC MEASURES

To our knowledge, scales that assess non-traditional forms of Christianity (Mormon, Unitarian, Jehovah Witness) or American Indian religiosity do not exist. However, religion-specific measures have been developed to quantify religious involvement in Jewish, Muslim, Hindu, Buddhist, and New Age populations. We present some of these measures of religiosity below.

Jewish Religious Coping Scale (JCOPE)

(Rosmarin et al., 2009b).

Variable

The JCOPE measures religious coping within the Jewish religious tradition.

Description

The JCOPE measure of religious coping was developed for use within Jewish populations. The JCOPE consists of 16 items, including 12-item positive and 4-item negative RC subscales. Responses range on a Likert-type scale from 1 'never' to 5 'always'. Summing scores on the positive subscale produces a 12–60 score range, with higher scores indicating greater positive religious coping; summing scores on the negative subscale produces a 4–20 score range, with higher scores indicating greater negative religious coping (Rosmarin et al., 2009b).

Sample

The JCOPE was developed in a sample of 468 Jewish persons (59% female, mean age 48, 36% Orthodox and 36% Reform, 86% with college) from Jewish congregations in the greater New York area and a mid-western city) (Rosmarin et al., 2009b). Confirmatory factor analysis and relationships with anxiety and depression were assessed in a sample of 234 Jewish persons (55% female, mean age 37, 60% Orthodox and 21% Conservative) mostly from the U.S., Canada, and Israel (surveyed online).

Reliability

Internal Consistency

Cronbach alpha coefficients have been reported for both the positive subscale (0.93) and for the negative subscale (0.69) (Rosmarin et al., 2009b).

Test–Retest

To our knowledge, no studies have reported test–retest reliability coefficients to-date.

Validity

Convergent/Concurrent

Positive correlations exist between the positive subscale scores and measures of similar constructs: doctrinal beliefs (0.61), practices (0.48), and cultural practices (0.55) (Rosmarin et al., 2009b).

Divergent/Discriminant

Relatively weak correlations exist between positive and negative JCOPE subscales and measures of mental health outcomes: worry (− 0.22 and 0.15), anxiety (− 0.20 and 0.27), depression (− 0.19 and 0.34), and associations with demographic characteristics were even weaker (− 0.07 to 0.08).

Construct/Factor Analytic

A principal components analysis with direct oblimin rotation ($N = 468$) revealed two dimensions (comprising positive and negative items). Loadings for the positive subscale ranged from 0.45 to 0.82, and for the negative subscale ranged from 0.37 to 0.73 (Rosmarin et al., 2009b). When subjected to confirmatory factor analysis ($N = 234$), a slightly modified two-dimensional model exhibited an acceptable fit, Satorra−Bentler $\chi^2_{(101)} = 206.70$, $p < 0.05$, CFI = 0.93, NNFI = 0.91, RMSEA = 0.069 (90% CI = 0.055−0.082) (Rosmarin et al., 2009b, p. 676).

Criterion/Predictive

The positive JCOPE subscale positively predicts Jewish beliefs ($r = 0.61$), Jewish practices ($r = 0.48$), and general religiosity ($r = 0.76$), whereas the negative JCOPE subscale is inversely predictive of beliefs, practices, and general religiosity ($r = -0.27$, $r = -0.20$, and $r = -0.29$, respectively) (Rosmarin et al., 2009b).

Location

Rosmarin, D.H., Pargament, K.I., & Krumrei, E.J. (2009b). Religious coping among Jews: Development and initial validation of the JCOPE. *Journal of Clinical Psychology, 65(7)*, 670−683.

Results and Comments

The JCOPE predicts mental health outcomes at significant levels, and is a good scale (the only one) to measure religious coping in Jewish populations. The JCOPE scale is readily available in the original article.

JEWISH RELIGIOUS COPING SCALE

Positive religious coping

1. I ask G-d to forgive me for things I did wrong
2. I try to be an inspiration to others
3. I try to see how G-d may be trying to teach me something
4. I think about what Judaism has to say about how to handle the problem
5. I do the best I can and know the rest is G-d's will
6. I look forward to Shabbat
7. I talk to my rabbi
8. I look for a stronger connection with G-d
9. I pray for the well-being of others
10. I pray for G-d's love and care
11. I try to do Mitzvot (good deeds)
12. I try to remember that my life is part of a larger spiritual force

Negative religious coping

13. I get mad at G-d
14. I question whether G-d can really do anything
15. I wonder if G-d cares about me
16. I question my religious beliefs, faith and practices

Note: Reproduced with permission.

Muslim Religiosity Scale (MRS)

(Koenig et al., 2013).

Variable

The MRS measures Muslim religious practices (both public and private) and assesses the extent to which a person's religious beliefs are the objective of their ultimate concern in life.

Description

We developed this brief measure of Muslim religious involvement for use in epidemiological studies. The 14-item scale covers the major Muslim practices and intrinsic religiosity (Koenig et al., 2013).

Sample

The MRS measure is currently being field-tested in samples of medical patients with colorectal cancer and those receiving hemodialysis in Jeddah, Saudi Arabia.

Reliability

Internal Consistency

No information on internal consistency is currently available.

Test–Retest

No information on test–retest reliability is currently available.

Validity

The MRS measure has strong face validity based on the item content developed by Muslim mental health professionals and theologians.

Convergent/Concurrent

No information on convergent/concurrent validity is currently available.

Divergent/Discriminant

No information on divergent/discriminant validity is currently available.

Construct/Factor Analytic

No information on construct/factor analytic validity is currently available.

Criterion/Predictive

No information on criterion/predictive validity is currently available.

Location

Koenig, H.G., Sehlo, M., Khalifa, D.A., & Zaben, F. (2013). A 14-item scale assessing Muslim religious practices and intrinsic commitment. Unpublished manuscript. Durham, NC: Center for Spirituality, Theology and Health.

Results and Comments

This measure has been developed in conjunction with Islamic theologians and mental health professionals. In order to establish its psychometric properties, the MRS is currently being field-tested in Jeddah, Saudi Arabia, in two samples of medical patients with colon cancer and with end-stage renal disease.

MUSLIM RELIGIOSITY SCALE

(1) How long have you been a Muslim?
- **(a)** Since birth 1. No 2. Yes
- **(b)** If no, how many years have you been a Muslim? [if not Muslim, put '0']
  _____ _____ years

(2) How often do you attend *group* religious services for worship and prayer at Mosque or in *small group* at work or in your home (obligatory prayers) (Fard)?
- **1.** 5 times/day
- **2.** 1 to 4 times/day
- **3.** Several times/week
- **4.** Several times/month
- **5.** Never

(3) How often do you pray *alone* in private (Nawafl)?
- **1.** Never
- **2.** Rarely
- **3.** Occasionally
- **4.** Often
- **5.** Very often

(4) Are you regular in prayer or do you sometimes sum 2 or more of your obligatory prayers (Fard) with each other or skip?
1. Always skip prayers
2. Often skip
3. Sometimes skip
4. Occasionally skip
5. Never skip (Regular)

(5) How often do you read or recite the Qur'an or other religious literature (magazines, papers, books) in your home?
1. Not at all or rarely
2. During Ramadan only
3. Occasionally, besides Ramadan, but less than several times per week
4. Several times/week
5. Once a day or more

(6) How often do you listen to or watch religious programs on radio or TV?
1. Not at all or rarely
2. During Ramadan only
3. Occasionally, besides Ramadan, but less than several times per week
4. Several times/week
5. Once a day or more

(7) Do you give Zakat to poor each year?
1. Never
2. Rarely
3. Occasionally
4. Often
5. Very often

(8) Do you give money to poor as a free gift (not obligatory like Zakat)?
1. Never
2. Rarely
3. Occasionally
4. Often
5. Very often

(9) How often do you fast from food/water (Sawm)?
1. Never
2. During Ramadan (part of month)
3. During Ramadan (all of month)
4. During Ramadan (all of month) + occasionally other times (Nawafl)
5. During Ramadan (all of month) + many other times (Nawafl)

(10) How often do you make Hajj?
1. Never
2. Once
3. Twice
4. Several times, but not yearly
5. Yearly

(11) How often do you make Umrah?
1. Never
2. Once
3. Several times
4. Every year
5. Several times per year

(12) In my life, I experience the presence of Allah/God
1. Definitely true of me
2. Tends to be true
3. Unsure
4. Tends *not* to be true
5. Definitely *not* true

(13) My religious beliefs are what really lie behind my whole approach to life
1. Definitely true of me
2. Tends to be true
3. Unsure
4. Tends *not* to be true
5. Definitely *not* true

(14) I try hard to carry my religion over into all my other dealings in life
1. Definitely true of me
2. Tends to be true
3. Unsure
4. Tends *not* to be true
5. Definitely *not* true

Scoring: First, reverse code items 2, 12, 13, 14. Second, add items 2 through 11 to create a religious practices subscale score (range 10–50). Third, add items 12 through 14 to create an intrinsic religiosity subscale score (range 3–15). Higher scores indicate greater religiosity.

Note: Permission from the authors is needed to use the scale (Harold.Koenig@duke.edu). We encourage researchers to use this scale and report its psychometric properties.

Santosh–Francis Scale of Attitude towards Hinduism (SFSAH)

(Francis et al., 2008).

Variable

The SFSAH measures religious commitment as determined by attitudes toward traditional Hindu beliefs and practices (Francis et al., 2008).

Description

The 19-item SFSAH assesses strength of the Hindu faith along a single dimension. Responses for each item are 1 'agree strongly', 2 'agree', 3 'uncertain', 4 'disagree', 5 'disagree strongly'. After reverse coding relevant items, summing scores produces a range of 19–95, with higher scores indicating greater religiosity.

Sample

The original scale was developed using a sample of 330 persons aged 12 to 35 years attending a Hindu youth festival (48% female, 94% under age 30) in London, England, in 2001 (Francis et al., 2008). The scale was later assessed in a sample of 305 Hindus in Indonesia (49% female, 33% university students, age range 14 to 43 years) (Lesmana, Tiliopoulos, & Francis, 2011).

Reliability

Internal Consistency

Cronbach alpha coefficients for the full scale range from 0.83 (Lesmana et al., 2011) to 0.87 (Francis et al., 2008).

Test–Retest

To our knowledge, no studies have reported test–retest reliability coefficients to-date.

Validity

Convergent/Concurrent

Moderate correlations were found with frequency of prayer (0.36) and frequency of visiting a place of worship (0.37) (Francis et al., 2008). In the second study, a moderate correlation was also found with frequency of prayer (0.35) (Lesmana et al., 2011).

Divergent/Discriminant

The SFSAH is weakly correlated with gender (0.15) and marital status (0.19) (Lesmana et al., 2011). To our knowledge, no other information on divergent/discriminant validity is currently available.

Construct/Factor Analytic

In the original study, a principal components analysis with varimax rotation in a sample of 330 individuals attending a Hindu youth festival revealed one component with loadings ranging from 0.31 to 0.74 (Francis et al., 2008). In a second study, an unrotated principal components analysis in a sample of 309 Balinese Hindus also revealed a single component with loadings ranging from 0.12 to 0.78 (Lesmana et al., 2011). The three reverse scored items exhibited low loadings (0.12, 0.29, and 0.23) suggesting they measure a somewhat different construct or reflect the reverse coding.

Criterion/Predictive

SFSAH scores positively predict frequency of prayer ($r = 0.36$) and frequency of visiting a place of worship ($r = 0.37$) (Francis et al., 2008).

Location

Francis, L.J., Santosh, R., Robbins, M., & Vij, S. (2008). Assessing attitude toward Hinduism: The Santosh-Francis Scale. *Mental Health, Religion and Culture, 11(6)*, 609–621.

Results and Comments

The SFSAH is the most accessible of the three measures assessing religious involvement within the Hindu faith tradition. The internal consistency and validity of the scale appear adequate.

SANTOSH–FRANCIS SCALE OF ATTITUDE TOWARDS HINDUISM

1. I find it hard to believe in God (reverse coded).
2. Spirituality is important in my life.
3. I have a close relationship with God.
4. I find it easy to understand Hinduism.

5. I think Hindu rituals are a waste of time (reverse coded).
6. Knowing about the law of Karma helps me to lead a better life.
7. I am happy to be a Hindu.
8. My religion helps me to lead a better life.
9. I find Hindu scriptures inspiring.
10. It is easy to understand Hindu rituals.
11. I benefit from attending services, prayer meetings or places of worship.
12. Prayer helps me a lot.
13. I am religious.
14. Reincarnation gives me hope.
15. It is important for me to practice my religion/spiritual beliefs.
16. In my experience meditation does have a positive impact.
17. I have noticed the benefits of practicing yoga.
18. I think Hindu scriptures are out of date (reverse coded).
19. Hindusim is relevant in the modern world.

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Buddhist Beliefs and Practices Scale (BBPS)

(Emavardhana & Tori, 1997).

Variable

The BBPS measures religious beliefs and practices within the Buddhist tradition (Emavardhana & Tori, 1997).

Description

The 11-item BBPS assesses Buddhist beliefs and practices. Response range for each item is uncertain, although the average total score for 11 items ranges from 21 to 26. Higher scores indicate greater religiosity.

Sample

In the original study, the BBPS was used in a study of 438 members of the Young Buddhist Association of Thailand (developed specifically for this study) (Emavardhana & Tori, 1997). Participants completed a weeklong Vispassana meditation retreat near Bangkok (63% female, mean age 18, 61% college students). They were compared to a control group of 281 control youth from the same area. A second study involved use of the scale in a sample of 2230 Buddhists, although details are few (Tori, 2004).

Reliability

Internal Consistency

A Cronbach alpha coefficient was reported to be 0.69 (Emavardhana & Tori, 1997). In the second sample of Buddhists, the alpha coefficient was found to be 0.87 (Tori, 2004).

Test–Retest

No studies have reported test–retest reliability coefficients to date.

Validity

Convergent/Concurrent

Change scores on the BBPS were found to correlate weakly to modestly with change scores on self-concept scales (0.11 to 0.45) and on defence mechanisms (0.10 to 0.43) (Tori, 2004).

Divergent/Discriminant

Tori (2004) reported that scores on the BBPS significantly differentiated ($p < 0.00001$) between Buddhists, Muslims, Christians and those with no religious affiliation.

Construct/Factor Analytic

When the 11 items of the BBPS were included with questions from the Tennessee Self-Concept Scale (TSCS) and subjected to exploratory factor analysis (Tori, 2004), a single 15-item factor emerged that included the 11

BBPS items and four statements from the TSCS concerning religiosity (e.g., *'I am a religious person,' 'I am as religious as I want to be'*).

Criterion/Predictive

The BBPS score increased significantly following a 7-day Buddhist meditation retreat, as compared with controls, suggestive of predictive validity, although no validity correlations or standardized beta coefficients were reported (Emavardhana & Tori, 1997).

Location

Emavardhana, T., & Tori, C.D. (1997). Changes in self-concept, ego defense mechanisms, and religiosity following seven-day Vipassana meditation retreats. *Journal for the Scientific Study of Religion, 36(2)*, 194–206.

Results and Comments

An increase in the BBPS score was associated with an increase in overall self-esteem, self-concept, and reductions in self-criticism (Emavardhana & Tori, 1997). It was also associated with a decrease in ego defense mechanisms of compensation, displacement, projection, and regression, but was associated with a greater use of denial (Emavardhana & Tori, 1997). To our knowledge, the BBPS is the only measure that assesses Buddhist beliefs and practices.

BBPS SAMPLE ITEMS

1. I believe in the doctrine of no soul.
2. The teachings of the Buddha are very important in my life.
3. I observe the 5 precepts.

Notes: Reproduced with permission.
The BBPS scale is not included in the original article, so readers should contact the authors.

New Age Orientation Scale (NAOS)

(Granqvist & Hagekull, 2001).

Variable

The NAOS measures religious beliefs and practices in the New Age religious tradition.

Description

The 22-item NAOS assesses beliefs and practices within the emerging New Age faith tradition. The scale is rooted in Eastern religious orientations and parapsychology (Granqvist & Hagekull, 2001). Responses for each item range from 1 'strongly disagree' to 6 'strongly agree'. Summing scores produces scores that range from 22–132, with higher scores indicating greater New Age spirituality.

Sample

NAOS was developed in 50 participants (New Age Believers) from vegetarian cafes, alternative bookstores, and health/medicine centers (76% female, mean age 35 years) (Granqvist & Hagekull, 2001). Scores by New Agers were compared to those obtained by 143 adolescents and young adults from a Christian youth organization of the Lutheran Church of Sweden in Stockholm (66% female, mean age 18 years).

Reliability

Internal Consistency

The Cronbach alpha coefficient of the scale was found to be high (0.95) (Granqvist & Hagekull, 2001).

Test–Retest

To our knowledge, no studies have reported test–retest reliability coefficients to-date.

Validity

Convergent/Concurrent

The average score on the NAOS in a group of New Age believers was significantly higher than that in the adolescent control sample ($p < 0.00001$). The NAOS also correlated positively (0.25) with emotionally-based religiosity (turning to and maintaining contact with God and religion) (Granqvist & Hagekull, 2001).

Divergent/Discriminant

Weak relationships were found between the NAOS and adult attachment dimensions (− 0.04−0.10) (Granqvist & Hagekull, 2001).

Construct/Factor Analytic

Exploratory factor analysis based on the intercorrelations of a pool of 32 items produced five factors. As one factor loaded on 22 items and accounted for 73% of the variance, this was chosen for the single-factor NAOS scale (Granqvist & Hagekull, 2001).

Criterion/Predictive

The NAOS scale scores positively predicted emotionally-based religiosity ($r = 0.25$) and (inversely) predicted socialization-based religiosity ($r = -0.19$) (Granqvist & Hagekull, 2001).

Location

Granqvist, P., & Hagekull, B. (2001). Seeking security in the new age: On attachment and emotional compensation. *Journal for the Scientific Study of Religion, 40(3)*, 527−545.

Results and Comments

Among New Agers, scores on the NAOS were related to greater ambivalence in maternal attachment, less security in paternal attachment, and there was a trend toward a positive relationship with dismissing avoidance in adult attachment. The New Age religious movement is growing in the United States, especially on the West Coast, and to our knowledge, this is the only measure of religious beliefs and practices in this tradition.

NAOS SAMPLE ITEMS

1. I am convinced that thought transference and/or the ability to move things by mere thinking actually do work.
2. I've read some of the new, 'alternative' books that deal with how to teach spiritual or personal development (e.g., *The Celestine Prophecy, A Course in Miracles, The Sacred Self, Out on a Limb*).
3. The position of the stars at birth affects how one will live one's life or how one's personality will develop.
4. I think that we are now approaching an entirely new age, that will *radically* change our view of science, spiritual knowledge, or the true nature of man.
5. To reach one's personal, spiritual insight, every individual should combine or mix the truths that are hidden within different old traditions (e.g., Shamanism, the religions of the native people, astrology, Eastern wisdom, Kabbala).

Notes: Reproduced with permission.
The full NAOS scale is included in the original article, but permission must be sought from the author to use the measure (contact Berit Hagekull at berit.hagekull@psyk.uu.se).

FUTURE RESEARCH DIRECTIONS

The choice of which measure to use in research studies depends on: (1) the research question, (2) the religion of the sample being studied, and (3) the length of the overall questionnaire. For predominantly Christian populations (and to some extent, Muslim and Jewish samples), the Hoge intrinsic religiosity scale (Hill & Hood, 1999, pp. 35−37) is recommended. This scale is a measure of religious commitment that assesses the primary motivation for religious involvement, there is extensive experience with this scale, and the scale has been validated in at least two studies of ministers. If questionnaire space is limited, then the Duke University Religion Index (DUREL)

(Koenig et al., 1997) would be the measure of choice. This 5-item index covers the major dimensions of religious involvement (organizational, non-organizational, and intrinsic religiosity), takes less than 1 minute to complete, and is available in many different languages. If more space is available, use of the first two items of the DUREL and the full 10-item Hoge intrinsic religiosity measure (12 questions total), or perhaps the abbreviated version of the Springfield Religiosity Scale (15 questions) is recommended. If even more space is available, given the consistent relationship between negative religious coping and poor health outcomes, we would add the 7-item negative RCOPE (from the 14-item Brief RCOPE) (Pargament et al., 1998). After that, given its importance as a source of the benefits to health that religion may have (see Koenig et al., 2012), we recommend adding one of the God attachment or religious love/trust scales such as the 6-item Trust-Mistrust scale (Rosmarin et al., 2011). Thus, if questionnaire space is no issue, these 25-items would measure the major dimensions of religiosity.

An alternative approach might be to use the Fetzer Institute's (1999) Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS). However, some of the BMMRS subscales are contaminated by mental health outcomes, and should not be used as a measure of religiousness/spirituality, *per se* (see previous discussion). These include the 3-item Forgiveness, 1-item Values, and 2-item Meaning subscales, as well as questions 2, 3, and 6 of the Daily Spiritual Experiences (DSE) subscale. Eliminating these items reduces the measure from 40 to 31 items. Also, the psychometric characteristics of the BMMRS as a whole have mostly been established in adolescent and college samples (Harris et al., 2008; Idler et al., 2003; Masters et al., 2009). Thus, using a compilation of partial measures like those contained in the BMMRS, with established reliability and validity only in adolescents and college students, may be inferior to choosing specific scales whose psychometric characteristics have been well established (i.e., those recommended above).

With regard to populations that are predominantly non-Christian, particularly in Jewish and Muslim populations, we recommend the use of religion-specific scales and perhaps one or two general religiosity scales so that results can be compared with the more commonly used measures developed in Christian populations. The religion-specific scales should assess both religious beliefs/practices and religious coping behaviors, so that information can be collected in terms of belief, religious practice, and extent to which those beliefs and practices are used to cope with stress or loss. Thus, for predominantly Jewish populations we recommend using a measure of trust in God (Rosmarin et al., 2009a) and a measure of religious coping (JCOPE, Rosmarin et al., 2009b). Likewise, for Muslim populations, we recommend the 14-item Muslim Religiosity Scale (Koenig et al., 2013) and the 15-item Brief Arab Religious Coping Scale (BARCS) (Amer, Hovey, Fox, & Rezcallah, 2008), or perhaps the 60-item Psychological Measure of Islamic Religiousness (Raiya, Pargament, Mahoney, & Stein, 2008). The same would apply for measuring Hindu beliefs/practices (Francis et al., 2008) and coping behaviors (Tarakeshwar, Pargament, & Mahoney, 2003). For Buddhists, we recommend the 11-item Buddhist Beliefs and Practices Scale (Emavardhana & Tori, 1997) and the Buddhist COPE (Phillips, 2012).

Using the traditional definition of spirituality, we feel that spirituality should be assessed using measures of religiosity (Koenig, 2008). Those who score high on religiosity, then, would be considered more spiritual. However, we acknowledge that this is not the way spirituality is usually measured today, where investigators often use scales that are contaminated with items assessing mental health (purpose and meaning, connectedness, peacefulness, etc.), resulting in tautological associations that are not interpretable.

For example, a widely used measure of spirituality today, especially in cancer patients and those with chronic illness, is the *Functional Assessment of Chronic Illness Therapy-Spiritual Well-being* (FACIT-Sp) (Brady, Peterman, Fitchett, Mo, & Cella, 1999). This measure consists of two subscales: an 8-item 'meaning and peace' subscale and a 4-item 'faith' subscale. The first subscale assesses meaning and peace (i.e., indicators of good mental health). The second subscale assesses 'faith', although two of the four items are phrased in terms of feelings of comfort or strength (emotions seldom experienced by those with poor mental health). The third item simply assesses level of optimism, another indicator of good mental health ('I know that whatever happens with my illness, things will be okay'). We recommend that researchers avoid this scale because of its contamination by indicators of good mental health.

Another example of a contaminated spirituality scale is the *Spiritual Transcendence Scale* (SpTS), a 24-item measure that consists of three subscales: universality, prayer fulfillment, and connectedness (Piedmont, 1999). As with the FACIT-SP, each of the subscales contains indicators of mental health or well-being. The prayer fulfillment subscale includes items that assess positive emotions such as feeling fulfilled, having strength, experiencing peace, or other blissful emotions. Items on the universality subscale assess the inter-connectedness of all of life and the experience of meaning. These items tap the consequences or results (positive emotions) of genuine spirituality, not the core construct of spirituality itself. Finally, items on the connectedness subscale focus on

emotional bonds with those who have died and on giving back to the community. Given the issue of confounding, we don't recommend the use of this scale to assess spirituality.

A third scale often used to measure spirituality is a subscale of the Self-Transcendence Scale called the Spiritual Acceptance Scale, a section of Cloninger's widely used Temperament and Character Inventory (Cloninger et al., 1993). This measure consists of questions about the ability to predict the future, personal experiences having to do with telepathy, and belief in paranormal phenomena. These items, in our opinion, do not serve to identify the deeply spiritual person (at least not in the way that spirituality has been traditionally understood in the past).

We have already discussed the Daily Spiritual Experiences (DSE) Scale (Underwood & Teresi, 2001). While several items that assess mental health may contaminate the scale (#2, 3, 5, 6, 11–14), this problem can be handled by examining health outcomes with and without those items included (see Koenig, 2011, pp. 204–205). If results are the same, then this will demonstrate that contamination is minimal. The Spiritual Well-being Scale (SWBS) (Paloutzian & Ellison, 1982) is another commonly used scale, and while we consider the 10-item religious well-being (RWB) subscale a valid measure, the 10-item existential well-being (EWB) subscale is simply a measure of well-being or good mental health. If researchers decide to use the SWBS, relationships with RWB and EWB subscales should be analyzed and reported separately (and modeled correctly, i.e., RWB leading to EWB, which in turn leads to better mental health).

In summary, definitions are crucial to measurement. Constructs must be clear and distinct from one another. This is particularly important when dealing with constructs such as religion, spirituality, secular humanism, and mental health, where construct overlap has been a serious concern. To avoid such problems when undertaking research on religion/spirituality and health, we recommend that researchers use the traditional definition of spirituality that conceptualizes those who are spiritual as the deeply religious. Religious involvement has many dimensions, and we have described 10 of them in this chapter. Measures to assess each of these dimensions are presented and critiqued and psychometric characteristics are provided. A brief section is also devoted to commonly used measures of spirituality. Although most measures of religiosity have been developed in Christian populations, many of these instruments work well in other religious groups, particularly Jews and Muslims. However, given differences in the content of belief between faith traditions, we recommend in non-Christian populations both the use of religion-specific scales and the use of more established measures of religiosity developed in largely Christian populations (for comparison). Finally, we make recommendations on the best scales to use depending on the researchers' specific aims, the religious composition of their samples, and the space available in their questionnaires, ensuring the assessment of both religious beliefs/practices and religious coping behaviors.

References

Abernethy, A. D., Chang, H. T., Seidlitz, L., Evinger, J. S., & Duberstein, P. R. (2002). Religious coping and depression among spouses of people with lung cancer. *Psychosomatics*, *43*(6), 456–463.

Amer, M. M., Hovey, J. D., Fox, C. M., & Rezcallah, A. (2008). Initial development of the Brief Arab Religious Coping Scale (BARCS). *Journal of Muslim Mental Health*, *3*(1), 69–88.

Benson, P. L., Donahue, M. J., & Erickson, J. A. (1993). The Faith Maturity Scale: Conceptualization, measurement, and empirical validation. In M. L. Lynn, & D. O. Moberg (Eds.), *Research in the social scientific study of religion* (pp. 1–26). Greenwich, CT: JAI Press.

Brady, M. J., Peterman, A. H., Fitchett, G., Mo, M., & Cella, D. (1999). A case for including spirituality in quality of life measurement in oncology. *Psycho-Oncology*, *8*(5), 417–428.

Cloninger, C. R., Svrakic, D. M., & Przybeck, T. R. (1993). A psychobiological model of temperament and character. *Archives of General Psychiatry*, *50*(12), 975–990.

Cole, B. S., Hopkins, C. M., Tisak, J., Steel, J. L., & Carr, B. I. (2008). Assessing spiritual growth and spiritual decline following a diagnosis of cancer: Reliability and validity of the spiritual transformation scale. *Psycho-Oncology*, *17*(2), 112–121.

Emavardhana, T., & Tori, C. D. (1997). Changes in self-concept, ego defense mechanisms, and religiosity following seven-day Vipassana meditation retreats. *Journal for the Scientific Study of Religion*, *36*(2), 194–206.

Fetzer Institute (1999). *Multidimensional measurement of religiousness/spirituality for use in health research*: A report of the Fetzer Institute/National Institute on Aging Working Group. Kalamazoo, MI: John E. Fetzer Institute. Retrieved on 9-25-13 from: <www.fetzer.org/images/stories/pdf/MultidimensionalBooklet.pdf>.

Francis, L. J., Santosh, R., Robbins, M., & Vij, S. (2008). Assessing attitude toward Hinduism: The Santosh-Francis Scale. *Mental Health, Religion and Culture*, *11*(6), 609–621.

George, L. K. (1999). *Religious/spiritual history* (pp. 65–69). *Multidimensional measurement of religiousness/spirituality for use in health research*. Kalamazoo, MI: Fetzer Institute.

Granqvist, P., & Hagekull, B. (2001). Seeking security in the new age: On attachment and emotional compensation. *Journal for the Scientific Study of Religion*, *40*(3), 527–545.

Hafizi, S., Memari, A. H., Pakrah, M., Mohebi, F., Saghazadeh, A., & Koenig, H. G. (2013). The Duke University religion Index (DUREL): Validation and reliability of the Farsi version. *Psychological Reports*, *112*(1), 151–159.
Harris, S. K., Sherritt, L. R., Holder, D. W., Kulig, J., Shrier, L. A., & Knight, J. R. (2008). Reliability and validity of the Brief Multidimensional Measurement of Religiousness/Spirituality among adolescents. *Journal of Religion and Health*, *47*(4), 438–457.
Hill, P. C., & Hood, R. (1999). *Measures of religiosity*. Birmingham, AL: Religious Education Press.
Hui, C. H., Ng, E. C. W., Mok, D. Y., Lau, E. Y. Y., & Cheung, S. F. (2011). 'Faith Maturity Scale' for Chinese: A revision and construct validation. *International Journal for the Psychology of Religion*, *21*(4), 308–322.
Idler, E. L., Musick, M. A., Ellison, C. G., George, L. K., Krause, N., & Ory, M. G. (2003). Measuring multiple dimensions of religion and spirituality for health research: Conceptual background and findings from the 1998 General Social Survey. *Research on Aging*, *25*(4), 327–365.
Koenig, H. G. (1994). *Aging and God: Spiritual pathways to mental health in midlife and the later years*. Binghamton, NY: Haworth.
Koenig, H. G. (1997). *Normative data on responses to items administered in the National Institute of Mental Health's Epidemiologic Catchment Area (ECA) Survey and National Institute on Aging's Established Populations for Epidemiologic Studies in the Elderly (EPESE) Survey*. Durham, NC: Center for the Study of Religion, Spirituality and Health, Duke University Medical Center.
Koenig, H. G. (2008). Concerns about measuring 'spirituality' in research. *Journal of Nervous & Mental Disease*, *196*(5), 349–355.
Koenig, H. G. (2011). *Spirituality and health research: Methods, measurement, statistics, and resources*. Philadelphia, PA: Templeton Foundation Press.
Koenig, H. G., & Bussing, A. (2010). The Duke University Religion Index: A five-item measure for use in epidemiological studies. *Religions*, *1* (no issue number), 78–85. Available from http://dx.doi.org/doi:10.3390/rel1010078.
Koenig, H. G., Cohen, H. J., Blazer, D. G., Pieper, C., Meador, K. G., Shelp, F., et al. (1992). Religious coping and depression in elderly hospitalized medically ill men. *American Journal of Psychiatry*, *149*(12), 1693–1700.
Koenig, H. G., & Futterman, A. (1995). *Religion and health outcomes: A review and synthesis of the literature* (March 16–17). *Conference on methodological approaches to the study of religion, aging, and health*. Bethesda, MD: National Institute on Aging and the Fetzer Institute.
Koenig, H. G., George, L. K., & Peterson, B. L. (1997b). Religiosity and remission from depression in medically ill older patients. *American Journal of Psychiatry*, *155*(4), 536–542.
Koenig, H. G., George, L. K., & Titus, P. (2004). Religion, spirituality, and health in medically ill hospitalized older adults. *Journal of the American Geriatrics Society*, *52*(4), 554–562.
Koenig, H. G., King, D. E., & Carson, V. B. (2012). *Handbook of religion and health* (2nd ed.). New York: Oxford University Press.
Koenig, H. G., Kvale, J. N., & Ferrel, C. (1988b). Religion and well-being in later life. *The Gerontologist*, *28*(1), 18–28.
Koenig, H. G., Meador, K. G., & Parkerson, G. (1997a). Religion index for psychiatric research: A 5-item measure for use in health outcome studies. *American Journal of Psychiatry*, *154*(6), 885–886.
Koenig, H. G., Moberg, D. O., & Kvale, J. N. (1988c). Religious activities and attitudes of older adults in a geriatric assessment clinic. *Journal of the American Geriatrics Society*, *36*(4), 362–374.
Koenig, H. G., Pargament, K. I., & Nielsen, J. (1998). Religious coping and health outcomes in medically ill hospitalized older adults. *Journal of Nervous and Mental Disorders*, *186*(9), 513–521.
Koenig, H. G., Sehlo, M., Khalifa, D. A., & Zaben, F. (2013). *A 14-item scale assessing Muslim religious practices and intrinsic commitment*. Unpublished manuscript. Durham, NC: Center for Spirituality, Theology and Health.
Koenig, H. G., Smiley, M., & Gonzales, J. (1988a). *Religion, health, and aging*. Westport, CT: Greenwood.
Krause, N., Ellison, C. G., Shaw, B. A., Marcum, J. P., & Boardman, J. D. (2001). Church-based social support and religious coping. *Journal for the Scientific Study of Religion*, *40*(4), 637–656.
Lesmana, C. B. J., Tiliopoulos, N., & Francis, L. J. (2011). The internal consistency reliability of the Santosh-Francis Scale of Attitude toward Hinduism among Balinese Hindus. *International Journal of Hindu Studies*, *15*(3), 293–301.
Masters, K. S., Carey, K. B., Maisto, S. A., Caldwell, P. E., Wolfe, T. V., & Hackney, H. L. (2009). Psychometric examination of brief multidimensional measure of religiousness/spirituality among college students. *International Journal for the Psychology of Religion*, *39*(2), 106–120.
Meisenhelder, J. B., & Chandler, E. N. (2002). Spirituality and health outcomes in the elderly. *Journal of Religion and Health*, *41*(3), 243–252.
Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, *56*(4), 519–543.
Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion*, *37*(4), 710–724.
Pearce, M. L., Chen, J., Silverman, G. K., Kasl, S. V., Rosenheck, R., & Prigerson, H. G. (2002). Religious coping, health, and health service use among bereaved adults. *International Journal of Psychiatry in Medicine*, *32*(2), 179–199.
Phillips, R. E. (2012). *Initial validation of a brief Buddhist coping measure*. St. Joseph, MO: Missouri Western State University. (unpublished manuscript, available from Russell Phillips, <rphillips2@gmail.com>).
Piedmont, R. (1999). Does spirituality represent the sixth factor of personality? Spiritual transcendence and the five-factor model. *Journal of Personality*, *67*(6), 985–1013.
Raiya, H. A., Pargament, K. I., Mahoney, A., & Stein, C. (2008). A psychological measure of Islamic religiousness: Development and evidence for reliability and validity. *International Journal for the Psychology of Religion*, *18*(4), 291–315.
Rosmarin, D. H., Pargament, K. I., & Krumrei, E. J. (2009b). Religious coping among Jews: Development and initial validation of the JCOPE. *Journal of Clinical Psychology*, *65*(7), 670–683.
Rosmarin, D. H., Pargament, K. I., & Mahoney, A. (2009a). The role of religiousness in anxiety, depression and happiness in a Jewish community sample: A preliminary investigation. *Mental Health Religion and Culture*, *12*(2), 97–113.
Rosmarin, D. H., Pirutinsky, S., & Pargament, K. I. (2011). A brief measure of core religious beliefs for use in psychiatric settings. *International Journal of Psychiatry in Medicine*, *41*(3), 253–261.
Rowatt, W. C., & Kirkpatrick, L. A. (2002). Two dimensions of attachment to God and their relation to affect, religiosity, and personality constructs. *Journal for the Scientific Study of Religion*, *41*(4), 637–651.

Salsman, J. M., & Carlson, C. R. (2005). Religious orientation, mature faith, and psychological distress: Elements of positive and negative associations. *Journal for the Scientific Study of Religion*, *44*(2), 201–209.

Storch, E. A., Roberti, J. W., Heidgerken, A. D., Storch, J. B., Lewin, A. B., Killiany, E. M., et al. (2004b). The Duke Religion Index: A psychometric investigation. *Pastoral Psychology*, *53*(2), 175–181.

Storch, E. A., Strawser, M. S., & Storch, J. B. (2004a). Two-week test–retest reliability of the Duke Religion Index. *Psychological Reports*, *94*(3, Pt 1), 993–994.

Tarakeshwar, N., Pargament, K. I., & Mahoney, A. (2003). Initial development of a measure of religious coping among Hindus. *Journal of Community Psychology*, *31*(6), 607–628.

Tori, C. D. (2004). Self-representation in a selfless society: Reliability and validity of the Tennessee Self-Concept Scale in Thailand. In S. P. Shohov (Ed.), *Advances in psychology research* (Vol. 30, pp. 35–56). Hauppauge, NY: Nova Science Publishers.

Underwood, L. G. (2006). Ordinary spiritual experience: Qualitative research, interpretive guidelines, and population distribution for the daily spiritual experience scale. *Archive for the Psychology of Religion*, *28*, 181–218.

Underwood, L. G. (2011). The daily spiritual experience scale: Overview and results. *Religions*, *2*(1), 29–50. Available from http://dx.doi.org/doi:10.3390/rel2010029.

Underwood, L. G., & Teresi, J. A. (2002). The daily spiritual experience scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. *Annals of Behavioral Medicine*, *24*(1), 22–33.

Wang, J., Sun, Y. L., Rong, Y., Zhang, Y. H., & Wang, Z. Z. (2013). The reliability of Chinese version DUREL scale. *Journal of Ningxia Medical University*, *35*(5), 550–552.