

A Brief Review of Religious Beliefs in Research on Mental Health and ETAS Theory

KATHLEEN GALEK

The Spears Research Institute, HealthCare Chaplaincy, New York, New York, USA

MATTHEW PORTER

California School of Professional Psychology, Alliant International University, San Diego, California, USA

The present study briefly describes and critiques the kinds of variables used to measure religion in research on mental health and analyzes data from the Handbook of Religion and Health to assess what variables are most commonly used to do so. The analysis found that organizational religion and subjective religiosity were the most widely used measures in research on psychological well-being, depression, and anxiety, with 30%–52% of studies measuring organizational religion and 34%–36% measuring subjective religiosity. In contrast, only 9%–11% of studies measured religious beliefs. The paper discusses the associations between religious beliefs and mental health that have been reported and the value of measuring religious beliefs in light of ETAS Theory.

KEYWORDS *beliefs, Darwinian psychiatry, evolution, mental health, religion, religious beliefs*

Early research on religion and health consisted simply of health surveys “in which religion...made only rare ‘guest appearances’” (Levin & Schiller, 1987, p. 13). These guest appearances typically came in the form of a single survey question about a participant’s religious affiliation or denomination. A review of nearly 250 health surveys conducted between

Address correspondence to Kathleen Galek, PhD, The Spears Research Institute, HealthCare Chaplaincy, 307 E. 60th Street, New York, NY 10022. E-mail: kgalek@healthcare-chaplaincy.org

1837 and 1984 that measured some aspect of religion (Levin & Schiller, 1987) revealed that in “the overwhelming majority of these studies, the investigation of religion [was] confined to comparisons of morbidity and mortality rates across religious denominations” (Levin & Markides, 1986, p. 589).

In the 1960s, some health researchers began to ask survey participants how often they attended religious services (Levin & Vanderpool, 1987), a measure that became widely known as “church attendance” in the research literature (Hill & Pargament, 2003). It is usually measured by a single survey item, such as “How often do you attend Sunday worship services” (Hall, Meador, & Koenig, 2008, p. 140). While Levin and Vanderpool (1987) identified only 27 studies for inclusion in their review of church attendance and health, our own recent search of Medline identified over 230 articles that included the term “church attendance.” Attending religious services and other church-related activities are categorized by researchers as measures of organizational religion, in contrast to non-organizational religious activities such as private prayer, meditation, reading scripture, or watching/listening to religious broadcasts (Koenig, George, & Titus, 2004; Levin, Taylor, & Chatters, 1994).

Self-reported, global assessments of religiousness also have become common in health research, according to Hall et al. (2008). These global assessments, which Hall et al. call subjective measures of religion, often take the form of a question asking, “To what extent do you consider yourself to be a religious person?” (Hall et al., p. 142). Other types of religious measures have become more common, as well, according to Hall et al. Some of the newer measures are what Hall et al. refer to as functional measures, including religious coping. Chief among these are the religious coping measures developed by Pargament and colleagues (e.g., Pargament, Koenig, & Perez, 2000; Pargament et al., 2003; Phillips, Pargament, Lynn, & Crossley, 2004).

Hall et al.’s (2008) review of religious measures used in health research briefly discussed measures of religious beliefs and values, but they say the interpretation of existing scales “remains complex because values and beliefs differ according to the context of specific religious communities” (Hall et al., p. 151). This is an unfortunate circumstance, because a meta-analysis conducted by Hackney and Sanders (2003) provides evidence that beliefs may exert greater influence on mental health than other aspects of religion, such as organized religious activities (church attendance, etc.) or personal devotion (private prayer, personal devotion, etc.). However, they assigned studies of religious beliefs to a broad category they called “ideological religion,” which included religious fundamentalism and other religious attitudes.

Although only a handful of studies in Hackney and Sanders’ (2003) category of “ideological religion” measured beliefs, their findings raise

two important questions. First, what is the association between religious beliefs and mental health? And second, to what extent have researchers examined this relationship? We will explore both of these questions. Finally, we will briefly discuss the value of studying religious beliefs and mental health within the context of Evolutionary Treat Assessment Systems (ETAS) theory.

METHODS

We used data presented in the *Handbook of Religion and Health* (Koenig, McCullough, & Larson, 2001) to examine the relative frequency with which different types of religious variables are used in research on different kinds of physical and mental health outcomes. The three mental health outcomes with the greatest number of studies were selected for analysis: psychological well-being (N = 108), depression (N = 122), and anxiety (N = 80).

The *Handbook of Religion and Health* lists the religious variables measured in each study, grouping the measures into 17 categories, some of which we combined and some of which we excluded because they were not specifically religious (e.g., distant mental healing, mysticism, spirituality, and spiritual well-being). In all, we used 10 of the *Handbook*'s categories to form the six categories used in Table 1. These six categories are: (1) Organizational Religion (religious attendance and church related activities); (2) Subjective Religion, which we combined with the *Handbook*'s categories of religious commitment and intrinsic religiosity; (3) Religious Affiliation, which combines denomination affiliation, church membership, and Seventh Day Adventist; (4) Non-organizational Religion (personal prayer, scripture reading, and religious media); (5) Religious Coping; and (6) Religious Beliefs.

TABLE 1 Percent of Studies Using each Type of Religious Measure by Mental Health Outcome Studied

Religious measure	Well-being (N = 108)	Depression (N = 122)	Anxiety (N = 80)
Organizational Religion	51.9	32.0	30.0
Subjective Religiosity	36.1	33.6	33.8
Religious Affiliation	19.4	34.4	25.0
Non-organizational Religion	22.2	16.4	10.0
Religious Coping	3.9	19.7	6.3
Religious Beliefs	9.3	9.0	21.3/11.3 ^a

^aPercentage is 11.3% if studies of death anxiety are excluded.

RESULTS

Table 1 shows the percentage of studies on each of the three outcomes that used various types of religious measures. The percentages listed in each column total over 100% because many studies used more than one type of religious measure.

The Table shows that subjective religiosity and organizational (or institutional) religious activities, such as church attendance, are the most widely used measures of religion in all three areas of mental-health research we examined. Religious affiliation was measured somewhat less often in studies of psychological well-being and anxiety, but it was measured most often in studies of depression. Subjective measures of religion were used in roughly a third of the studies on all three of the outcomes.

The remaining three types of measures were used less often, with religious coping being used most often in research on depression. Religious beliefs were measures in approximately 9% of studies on psychological well-being and depression. The relatively high use of religious measures in studies of anxiety (21.3%) is attributable to eight studies that examined belief in life-after-death and death anxiety. When these studies are removed from the analysis, the percentage of studies measuring religious beliefs and anxiety is 11.3%.

According to Koenig et al.'s (2001) interpretation of the findings given in the *Handbook of Religion and Health*, 6 of the 10 studies on religious beliefs and psychological well-being found a direct association between beliefs and well-being, and 5 of the 11 studies on depression found an inverse association between religious beliefs and depression. Religious beliefs had a salubrious association in roughly half the studies on death anxiety and half of those on other types of anxiety, according to the *Handbook of Religion and Health*.

DISCUSSION

Organizational religion, in the form of attending religious services and other church related activities, was the most commonly used measure of religion in all three research areas we examined. Yet, Hall and his colleagues (Hall et al., 2008) question the use of organizational religious activity, or "church attendance" in such research because it "may simply function as a proxy for more 'secular' pathways of healthy living," (p. 141). Flannelly, Ellison, and Strock (2004) further question the reliability of "church attendance," and suggested it is not a measure of attendance, per se, but a subjective measure of religiousness.

Flannelly et al. (2004) also expressed reservations about the value of measuring religion affiliation, saying: "Although knowing that a person

belongs to a specific religious denomination implies something about the nature of one's beliefs, it does not provide information about the strength of those beliefs or one's adherence to the practices of that faith" (p. 1234). Yet religious affiliation is still widely used in research on religion and health. Subjective measures, in turn, have been criticized precisely for their subjectivity, as have been measures of non-organizational religious activity, such as prayer, scripture reading, etc. (Hall et al., 2008). Functional measures, such as religious coping, are a fairly recent approach to examine the pathways by which religion may affect health (Hill & Pargament, 2003). However, Hall et al. caution they may distort what it means to be religious, by subordinating the ultimate purpose of religion into a functional or proximate purpose (i.e., good health).

Examination of the *Handbook of Religion and Health* indicates the results are mixed with respect to the association between religious beliefs and mental health, and our own results have found that the strength and direction of the association depends on the beliefs being studied. For example, Flannelly, Koenig, Ellison, Galek, and Krause (2006) found belief in life-after-death was significantly related to better mental health in all six classes of psychiatric symptoms they studied. Further study, however, revealed that pleasant beliefs about the afterlife were inversely related to psychiatric symptoms, whereas unpleasant afterlife beliefs were directly related to symptomology (Flannelly, Ellison, Galek, & Koenig, 2008).

Other research indicates the strength of the associations between religious beliefs and psychiatric symptoms varies not only by the specific beliefs that are tested, but by the specific class of symptoms (e.g., general anxiety, paranoia, depression) that are tested. For example, Flannelly, Galek, Ellison, and Koenig (2009) found that different beliefs about God were found to be differentially related to various classes of psychiatric symptoms, with some (i.e., belief that God is close and loving) having a salubrious association and others (i.e., belief that God is the creator and judge) having little or no association.

Flannelly, Koenig, Galek, and Ellison (2007) synthesized the literature on evolutionary psychiatry and related fields to develop a theory that describes how brain systems, which have evolved for self-protection, underlie psychiatric symptoms. The theory proposes that: (a) certain classes of psychiatric symptoms are the product of neural threat assessment systems that process information about the degree to which different situations and inanimate and animate objects pose a potential threat of harm, and (b) beliefs about the world can modulate the threshold or sensitivity of these systems in determining what constitutes a threat. For example, the belief that human nature is basically evil will increase the tendency of the systems to decide that people pose a threat, thereby increasing symptoms of social anxiety and paranoia, whereas the belief that human nature is basically good will have the opposite effect. Some types of psychiatric symptoms may be less

influenced by beliefs because they are less affected by cognition (e.g., specific phobias), which helps to explain the findings of Flannelly et al. (2009) that were mentioned in the preceding paragraph.

Their theory, called Evolutionary Threat Assessment Systems Theory, or ETAS Theory, further proposes that the parts of the brain primarily involved in threat assessment are the prefrontal cortex, the limbic system, and the basal ganglia, which interact to varying degrees and that beliefs operate through the prefrontal cortex to directly affect threat assessments and, therefore, psychiatric symptoms. Finally, the theory proposes that beliefs affect prefrontal cortex activity, which, in turn, mediates the activation of limbic and basal ganglia structures. They called these systems Evolutionary Threat Assessment Systems because: (a) the prefrontal cortex, the limbic system, and the basal ganglia evolved in different points in our evolutionary history; (b), in part to assess threats; and (c) they may comprise one or more related neural systems.

A recent neuro-imaging study (Harris, Sheth, & Cohen, 2008) confirmed part of the theory by showing that activity in the prefrontal cortex and basal ganglia increases while people are thinking about religious and other beliefs. A related study (Inzlicht, McGregor, Hirsh, & Nash, 2009) found that belief in God was associated with reduced anxiety related to physiological activity in part of the limbic system that has been associated with the assessment of social threats (Eisenberger, Lieberman, & Williams, 2003). After years of relative neglect, it seems that religious beliefs may provide the key to understanding the relationship between religion and mental health.

We believe various kinds of chaplain interventions may tap into ETAS in the brain to reduce patient anxiety. We suspect that activating a patient's own beliefs that God is loving and caring, and/or that God positively intervenes in one's life, would be a particularly potent method of reducing anxiety through these brain mechanisms (Flannelly et al., 2009). Such beliefs might be activated in a number of ways, including bedside prayer with patients.

REFERENCES

- Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, *302*(5643), 290–292.
- Flannelly, K. J., Ellison, C. G., Galek, K., & Koenig, H. G. (2008). Beliefs About Life-After-Death, Psychiatric Symptomology and Cognitive Theories of Psychopathology. *Journal of Psychology & Theology*, *36*, 94–103.
- Flannelly, K., Ellison, C., & Strock, A. (2004). Methodologic Issues in Research on Religion and Health. *Southern Medical Journal*, *97*(12), 1231–1241.
- Flannelly, K. J., Galek, K., Ellison, C. G., & Koenig, H. G. (2009). Beliefs about God, Psychiatric Symptoms, and Evolutionary Psychiatry. *Journal of Religion & Health*.

- Flannelly, K. J., Koenig, H. G., Ellison, C. G., Galek, K., & Krause, N. (2006). Belief in Life after Death and Mental Health: Findings from a National Survey. *Journal of Nervous and Mental Disease, 194*(7), 524–529.
- Flannelly, K. J., Koenig, H. G., Galek, K., & Ellison, C. G. (2007). Beliefs, Mental Health, and Evolutionary Threat Assessment Systems in the Brain. *Journal of Nervous and Mental Disease, 195*(12), 996–1003.
- Hackney, C. H., & Sanders, G. S. (2003). Religiosity and Mental Health: A Meta-Analysis of Recent Studies. *Journal for the Scientific Study of Religion, 42*(1), 43–55.
- Hall, D. E., Meador, K. G., & Koenig, H. G. (2008). Measuring Religiosity in and Health Research. *Journal of Religion & Health, 47*, 134–183.
- Harris, S., Sheth, S. A., & Cohen, M. S. (2008). Functional Neuroimaging of Belief, Disbelief, and Uncertainty. *Annals of Neurology, 63*(2), 141–147.
- Hill, P. C., & Pargament, K. I. (2003). Advances in the Conceptualization and Measurement of Religion and Spirituality: Implications for Physical and Mental Health Research. *American Psychologist, 58*(1), 64–74.
- Inzlicht, M., McGregor, I., Hirsh, J. B., & Nash, K. (2009). Neural Markers of Religious Conviction. *Psychological Science, 20*(3), 385–392.
- Koenig, H. G., George, L. K., & Titus, P. (2004). Religion, Spirituality, and Health in Medically Ill Hospitalized Older Patients. *Journal of the American Geriatrics Society, 52*(4), 554–562.
- Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of Religion and Health*. New York: Oxford University Press.
- Levin, J. S., & Markides, K. S. (1986). Religious Attendance and Subjective Health. *Journal for the Scientific Study of Religion, 25*(1), 31–40.
- Levin, J. S., & Schiller, P. L. (1987). Is There a Religious Factor in Health? *Journal of Religion & Health, 26*(1), 9–36.
- Levin, J. S., Taylor, R. J., & Chatters, L. M. (1994). Race and Gender Differences in Religiosity among Older Adults: Findings from Four National Surveys. *Journal Of Gerontology, 49*(3), S137–145.
- Levin, J. S., & Vanderpool, H. Y. (1987). Is Frequent Religious Attendance Really Conducive to Better Health?: Toward an Epidemiology of Religion. *Social Science & Medicine, 24*(7), 589–600.
- 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., Zinnbauer, B. J., Scott, A. B., Butter, E. M., Zerowin, J., & Stanik, P. (2003). Red Flags and Religious Coping: Identifying some Religious Warning Signs among People in Crisis. *Journal of Clinical Psychology, 59*(12), 1335–1348.
- Phillips, R. E., Pargament, K. I., Lynn, Q. K., & Crossley, C. D. (2004). Self-Directing Religious Coping: A Deistic God, Abandoning God, or No God at All? *Journal for the Scientific Study of Religion, 43*(3), 409–418.