

In Jeffrey S. Levin (Ed.), Religion in Aging and Health: Theoretical Foundations and Methodological Frontiers. Thousand Oaks, CA: Sage Publications, 1994.

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## *The Measurement of Religion in Epidemiologic Studies*

### *Problems and Prospects*

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#### *Background*

Within the last decade there has been a spate of reviews on the role of religion in physical and mental health (see Chapter 7 in this volume). However, it would be a mistake to perceive this interest as new, because a role for religion in health was explicit in the writings of several of the early social scientists. James (1902) distinguished healthy-minded religion from religion of the sick soul. The provision of social integration and meaning systems that Durkheim (1897/1951) and Weber (1964), respectively, attributed to religion have clear health consequences. Marx and Freud had decidedly uncharitable views of religion, but even they conceded that religion may have certain salutogenic effects. In the celebrated passage in which Marx described religion as the opium of the people, he also indicated that it was "the heart of a heartless world" and "the spirit of a spiritless situation" (Marx & Engels, 1964, p. 42). Although Freud (1963) regarded religion as an illusion and mass

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AUTHOR'S NOTE: Preparation of this chapter was supported by NIH Grant No. AG07904 from the National Institute on Aging. The author wishes to thank Max Herman for research assistance and Ann Fitzpatrick for preparing the manuscript.

neurosis, he also stated that "religion succeeds in sparing many people an individual neurosis" (pp. 21-22).

Despite the current resurgence of interest in religion, the epidemiology of religion is still in its infancy, and one recent study noted that this area is "better characterized as faith than as science" (Idler & Kasl, 1992, p. 1054). Religion is difficult to define and consensus has not yet emerged around particular empirical measures. At the same time, the ubiquity of religious organizations, the theorized effects that religious involvement can have on health, and the involvement of most of the population in some aspect of religion suggest that it is a topic that can no longer be ignored. However, advancement of our understanding of the ways in which religion affects illness, disability, and health requires more attention to the conceptualization and measurement of the religious variable.

This chapter focuses primarily on the measurement of religion in studies of religious commitment and health, but it also discusses other methodological issues relevant to the analysis of data from large survey samples. It will review and evaluate existing measures of religion as used in broad-based epidemiologic studies. It will describe limitations of current measurement approaches as well as propose the development of new measures as necessary. Epidemiologic studies of religion have typically not been informed by the long tradition of interest in the measurement of the religious variable among sociologists and psychologists of religion. This chapter highlights the importance of placing the assessment of religion in health research into this larger theoretically informed context of efforts to measure religion in all its complexity. What is needed for the field to move forward is well-designed empirical research that evaluates theoretical ideas about the relation between religion and health. This is necessary to provide confidence in both the theory and the measures employed.

### *Unidimensional Measures of Religion*

#### **Religious Affiliation**

Religious affiliation is the most commonly used measure of religion in research on religion and health (Craigie, Liu, Larson, & Lyons, 1988; Larson, Pattison, Blazer, Omran, & Kaplan, 1986; Levin & Schiller, 1987). This is most frequently operationalized as Catholic versus Protestant versus Jewish. This classification scheme is woefully inadequate

and does not capture the great variation that exists among religious groups. Students of religion have long noted that the Catholic-Protestant distinction is not very meaningful, because there is more variation within the Protestant category than between Protestants and Catholics (Glock & Stark, 1965; Schuman, 1971).

This issue has been addressed in the literature (Levin & Schiller, 1987; Levin & Vanderpool, 1987), but the use of the simple Catholic-Protestant-Jewish distinction is still evident in recent research. One reason for this is that most epidemiologic studies of religion use secondary data in which religion was not of central interest during the original data collection. Today's researcher is thus locked into the available measures. For example, a recent study by Idler and Kasl (1992) found that the relationship between religion and health status indicators was strong for Catholics and Jews but weak or nonexistent for Protestants. These researchers indicated that their data lacked detail on the various Protestant denominations and branches of Judaism. It is likely that a different pattern of results would have emerged if they had been able to account for the heterogeneity of these religious faiths.

The question of how to group together different denominations that share common characteristics has received extensive attention from sociologists of religion. One of the most influential typologies in the field is the distinction between church and sect (Troeltsch, 1950; Weber, 1958). Numerous ways of classifying Protestant denominations into churches or sects have been suggested by a variety of researchers (Knudsen, Erle, & Shrivier, 1978). Johnson (1963) sees rejection of its social environment as the key defining sectarian characteristic. Stark and Bainbridge (1985) agree that subcultural deviance is a key identifier of a sect. Sects not only tend to develop their own subculture but have a tendency to become total institutions (Iannaccone, 1988).

Data from a study of San Francisco Bay Area church members reveal that across a broad range of social and behavioral variables, Protestant denominations fall along a unidimensional continuum that corresponds to the church-sect distinction (Glock & Stark, 1966; Iannaccone, 1988). Using large national surveys and a similar denominational ordering, Roof and McKinney (1987) obtained very similar results. Compared with members of churches, members of sects are poorer, less educated, contribute more money to their religious organizations, attend more services, hold stronger and more distinctive religious beliefs, belong to smaller congregations, and have more of their friends as members of their denomination.

Kelley (1972) used a typology similar to the church-sect classification scheme to explain different patterns of growth within Protestant denominations. Kelley distinguished exclusivist (sectlike) denominations from ecumenical (churchlike) ones, and found that the small exclusivist denominations were growing rapidly whereas the large ecumenical ones were losing membership. Kelley (1972) suggested that the key underlying characteristic that explained the patterns of growth was the strict attitudinal and behavioral demands that conservative denominations made on their members.

Similarly, Iannaccone (1988) indicates that what is common to most definitions of a sect is the denomination's emphasis on a distinctive lifestyle and morality. Consistent with this perspective, Hoge (1979) reported that a single item assessing the extent to which a Protestant denomination emphasized a distinctive lifestyle and morality accounted for all of the observed variations in growth rates of 16 major denominations between 1965 and 1975. The simple bivariate correlation between this measure and growth rates was 0.97. Controls for socioeconomic status and region of the country did not markedly reduce the strength of this association. Research on the church-sect distinction is an important direction for future work on religion and health. Researchers should not only classify religious denominations using the church-sect typology but should also measure the extent to which an individual's religious denomination emphasizes a distinctive lifestyle.

#### Religious Attendance

The frequency of religious attendance is the second most commonly used measure of religious involvement in health research (Larson et al., 1986; Levin & Schiller, 1987). The association between this indicator of religious participation and health status appears to be fairly robust. Levin and Vanderpool (1987) documented that religious attendance is positively associated with health status across a broad range of health outcomes. Similarly, a recent review of the religious variable in mental health research concluded that measures of actual religious behavior like religious attendance were more strongly linked to mental health than were more subjective measures of religiosity (Gartner, Larson, & Allen, 1991). Similarly, Adlaf and Smart (1985) found that religious attendance is more strongly linked to drug abuse than the intensity of religious feelings.

Despite its popularity, there are several problems associated with the use of religious attendance as a primary measure of religious involvement. First, it is not clear that religious attendance per se is indicative of anything intrinsically religious (Williams, Larson, Buckler, Heckmann, & Pyle, 1991). Religious attendance is frequently a badge of social status, secular in character, and of no greater religious significance than participation in other community organizations (Goode, 1966; Wilson, 1978). Religious attendance may also be a proxy for physical health status (Levin & Vanderpool, 1987). Especially in studies of older populations, public participation in religious activities requires a certain degree of physical health. Levin and Markides (1986) found that a positive association between religion and health was reduced to non-significance once controlled for activity limitation.

Second, a simple measure of the frequency of religious attendance is not an adequate measure of public religious participation. Measuring public religious involvement requires the assessment of religious attendance at meetings other than the main weekly worship service, financial support of religious organizations, and holding leadership and volunteer positions in religious groups (Ainlay & Smith, 1984).

Third, the conventional coding of the religious attendance variable provides data that may be badly skewed (Levin & Vanderpool, 1987). Typically, the highest category of religious attendance is once a week or more. Levin and Vanderpool (1987) indicate that at least half of persons who go to religious services attend them at least once per week. Given the high level of religious attendance in the United States, the most extreme category of attending services (once a week or more) is likely to be the mean, median, and mode for the frequency distribution of religious attendance. They indicate that this restricted variation at the high end of religious attendance probably leads to underestimation of positive associations between religion and health. These researchers suggest that the number of times per week that an individual attends religious services and other religious meetings should also be assessed.

Fourth, religious attendance captures only a small part of religious commitment and activity. Many researchers view religious attendance as a proxy for the larger universe of religious involvement, but the empirical evidence indicates that religious attendance is relatively insensitive to other forms of religious involvement (Jones, 1969; Kenney, Cromwell, & Vaughan, 1977; Stark & Glock, 1968). That is, measures of religious attendance do not capture attitudes, beliefs, religiously

motivated behavior outside of religious settings, or the extent of religious commitment. Many persons who do not attend religious services report high levels of religious involvement according to other indicators of religion. In the United Kingdom, for example, only a small minority of the population regularly attends religious services, but the presence of religious belief is pervasive (Davie, 1990).

### *Multidimensional Measures of Religion*

Both religious affiliation and attendance are unidimensional indicators of religion. They do not capture the quality of friendship and fellowship within congregations, the impact of religious ritual or symbolism on health, the therapeutic aspects of religious worship services, or the particular belief systems that may enhance or impair health. As a result, at the present time, researchers do not know with any precision what types, amounts, and aspects of religious involvement are most consequential for health. What is needed is a comprehensive but parsimonious set of conceptually based measures of religious involvement to study the effects of religion on health.

Epidemiologists can take heart, because religion scholars have long concluded that religious involvement is a multidimensional construct and have been wrestling with the appropriate ways to measure it (Fukuyama, 1961; Glock & Stark, 1965; King & Hunt, 1972, 1975). Although no consensus has emerged on the specific content and number of dimensions, the multidimensional measurement of religion is normative among sociologists and psychologists of religion, with research efforts continuing to validate, replicate, and extend various multidimensional models.

Glock's (1962) typology is one of the most influential in the field. It views religion as consisting of five distinctive dimensions. These are ideological (religious beliefs), ritualistic (religious practice), experiential (religious feelings), consequential (generalized effects of religion in an individual's life), and intellectual (religious knowledge). Hilty, Morgan, and Burns (1984) indicate that this five-dimensional model is the theoretical typology most frequently studied by sociologists of religion and that several studies have found empirical support for its dimensions. For example, both Fukuyama (1961) and Glock and Stark (1965) found empirical support for all but the consequential dimension.

Although not the most widely used, the most comprehensive typology of religious involvement is that proposed by King and Hunt (Hilty et al., 1984). Originally proposed as a 9-dimensional construct, the King and Hunt typology eventually evolved into an 11-dimensional model (King, 1967; King & Hunt, 1972, 1975). An important contribution of the King and Hunt approach is that it attempted to incorporate all of the typologies that existed at that time. No consensus has emerged about the specific dimensions identified by King and Hunt, but the seven-factor model (Hilty et al., 1984) appears to be a useful place to begin. These seven factors are personal faith, intolerance of ambiguity, orthodoxy, social conscience, knowledge of religious history, life purpose, and church involvement. Like many of the extant scales that measure religion, the specific items would need to be reworded to be applicable to non-Christian groups. The ensuing discussion of the consequences of religion in terms of social support, ritual and symbolism, and subjective religiosity overlaps with and extends the conceptualization of religious involvement that is in this typology.

### **Social Support**

The church attendance measure explicitly incorporates the notion that religion may affect health by serving as a source of social integration and social support. The consequences of social relationships for health have been under intense scientific investigation in recent years. The empirical evidence indicates that supportive social relationships have pervasive effects on health status that rival those of the more traditional biomedical risk factors (House, Landis, & Umberson, 1988). For example, social relationships are as strongly linked to mortality as is cigarette smoking. Moreover, the literature on social support explicitly includes measures of religious attendance as indicators of social support (Berkman & Syme, 1979; House, Robbins, & Metzner, 1982).

Churches are critical sources of social integration, and congregation-based friendship networks may serve as a type of extended family and be a major basis of supportive social relationships as persons go through the life cycle (Taylor & Chatters, 1988). Congregations vary in the extent to which they provide emotional and instrumental support, and this variation needs to be assessed. A recent study found evidence of an interaction between parishioners' needs and the level of congregational support (Maton, 1989). Congregational support was measured based on

members' self-report of the quantity and quality of contact with all members of their church. Persons who had high levels of economic stress had greater well-being in high-support churches than in low-support congregations. However, for members low in economic stress, levels of well-being were unrelated to the support level of the congregation. The size of a congregation may be an important determinant of the quality of fellowship and group cohesiveness found among its members. Some limited evidence suggests that members of small churches may enjoy higher levels of social support than those in large churches (Wicker & Mehler, 1971).

It is instructive that the social network structure of church members also helps to distinguish churches from sects. Unlike churches, sects provide their members with most of their closest friendships, and the low rate of participation of sect members in nonreligious organizations suggests that their church friendships substitute for secular ones (Iannaccone, 1988). Stark and Bainbridge (1985) view this communal attribute (the religious group functioning as the primary group for the formation of interpersonal bonds) as a critical factor that distinguishes sects from churches. This has been measured by asking respondents how many of their five closest friends are members of their congregation or parish. Two or more such friendships is indicative of a communal group (Stark & Glock, 1968). Sects are high on communal involvement, whereas churches score low on this attribute.

Consideration of the supportive role of religion has almost exclusively focused on the primary prevention functions of religion—that is, the extent to which religion can counteract stress and/or pathogenic conditions and promote health by enhancing conditions in the environment. Researchers also need to explore the role of religion in secondary and tertiary prevention. Secondary prevention refers to shortening the duration of illness through early diagnosis and effective treatment, while tertiary prevention encompasses strategies that can reduce the debilitating consequences of illness and disability.

The clergy may play an important role in secondary prevention. They are gatekeepers to the mental health system and play a crucial role in the delivery of mental health services (Veroff, Douvan, & Kulka, 1981). For nearly 40% of the U.S. population, the clergy is a primary help-seeking source with less than 10% of these persons being referred to mental health professionals (Meylink & Gorsuch, 1988; Veroff et al., 1981). Analyses of data from the largest study of mental health ever conducted in the United States indicate that the clergy do not differ from

mental health practitioners in terms of the type or severity of psychiatric problems that they see (Larson et al., 1988). However, researchers are largely unaware of what services the clergy provide to persons with psychiatric problems, the conditions under which they refer patients to clinicians, or the factors that increase the likelihood of such referral.

An important research issue is the identification of the role that religion plays as an alternative system of treatment, especially for mental health problems. Some religious traditions view the seeking of help for mental health problems as a sign of moral failure. Religious values and beliefs may prevent some parishioners from seeking help from the formal mental health system as well as make some clergy reluctant to refer individuals for help.

Churches also play a critical but neglected role in tertiary prevention by helping to maintain marginal persons in society (Haugk, 1976). At the time of discharge from a health facility an individual has an important need for stability in the community. A local church can offer fellowship and acceptance as well as activities and groups in which the individual can become involved. Idler and Kasl (1992) note that religious group membership also may provide an incentive for rehabilitation and recovery, especially among the elderly. It can provide an otherwise disengaged older person a public role to which he or she can return.

The literature on social support indicates that social relationships not only can provide emotional concern and caring but can also serve as critical agents of social control (Umberson, 1987). It is likely that these social control elements of religion may be stronger in sects than in churches. Stark (1984) emphasizes that religion shapes individual behavior not only through internalized religious beliefs but also as an aspect of groups. Thus an adequate understanding of religious effects requires the assessment of religion at both the individual and the group level. The literature recognizes the role of social control primarily through moral codes that require patterns of behavior that may be health enhancing (Jarvis & Northcott, 1987; Levin & Vanderpool, 1987), but less attention has been given to the ways in which social ties reinforce and sustain individual commitment to religious norms.

Levin and Vanderpool (1987) recommend that researchers should ask respondents, "Compared to most people in your denomination, are you more religiously involved and committed, just about the same as everyone else, less religiously involved and committed, or not very involved or committed?" In addition, Stark and Glock's (1968) communal involvement

question as well as the question, "How many of your closest friends have religious values and beliefs similar to yours?" should be asked.

The social support literature has begun to give attention to the negative aspects of relationships. Social ties can provide both stress and support. Social relationships can be unpleasant and conflictive, and some evidence suggests that these negative aspects of relationships are more strongly linked to health status than the supportive ones (Fiore, Becker, & Coppel, 1983; Rook, 1984). Thus, in addition to assessing the extent to which fellow members make an individual feel loved and cared for, researchers must also ascertain the degree to which they are critical and make too many demands on the individual.

### Rituals and Symbols

A simple measure of the frequency of religious attendance provides no data on what transpires during the service. The health consequences of religious attendance may be linked to the dynamics of the service. Research is needed that would pay greater attention to both the content and the context of religious services. This requires more explicit attention to the role of ritual and symbolism in religion. Researchers also need to be reminded that religious attendance is an important, but by no means the only common religious ritual.

There is a substantial literature on the health effects of religious rituals. However, these studies focus primarily on non-Christian groups (Kiev, 1964; Simpson, 1980). There does not yet appear to have been a systematic effort to assess religious rituals, develop reliable survey measures of them, and examine their relationship to health functioning in broad-based populations. Efforts that assess and quantify the religious rituals of congregations and that examine the extent to which they may promote or impair health and well-being may enhance the understanding of religion and health status and fill a critical gap in the literature by moving epidemiologic studies beyond the mere assessment of religious attendance.

Griffith, English, and Mayfield (1980) and Griffith, Young, and Smith (1984) indicate that participation in prayer and testimony at religious services can provide benefits to participants that are equivalent to those that individuals receive in formal psychotherapy. The expression of emotion and active congregational participation that is characteristic of some African-American church services can promote "collective catharsis" in ways that facilitate the reduction of tension and

the release of emotional distress (Gilkes, 1980). Some religious services may be distinctive in the provision of opportunities to articulate and manage both personal and collective suffering. Through testimony, song, prayer, and sermon, participants may be allowed to express inner feelings without much inhibition. The personal faith dimension of the revised Hunt and King scale (Hilty et al., 1984) has several good measures of religious rituals that are practiced privately. However, religion measures capable of tapping the religious rituals of public religious worship are needed.

McGuire (1987) emphasizes that ritual language and nonverbal symbolism can provide not only a sense of order and control but also a sense of personal empowerment that may be health enhancing. Although ritual language is ubiquitous in religious organizations, little research attention has been given to this issue. Sabbath observance is another religious ritual worthy of examination. The observance of a weekly 24-hour period of rest and religious activity is normative within some branches of Judaism and for some Christian groups, such as Seventh-Day Adventists. This weekly "minivacation" typically involves a withdrawal from the normal hustle and bustle of life. Some theological scholars have suggested that this combination of physical rest with the intensification of religious activity may have important stress-reducing effects (Bacchiocchi, 1980; Heschel, 1951).

Recently, Idler and Kasl (1992) documented that the ritual observance of religious holidays was related to mortality in a large sample of elderly persons. In this study, fewer deaths occurred immediately before and during religious holidays than in the month afterward. This effect was stronger for more observant religious members than for less observant ones. This positive effect of religion existed for both Christians and Jews. Idler and Kasl (1992) observe that this protective effect of religion in the period before and during ceremonial occasions suggests that participation in religious rituals may be an important health-enhancing aspect of religious involvement.

### Organizational Climate

There also is a need for more systematic assessment of the ways in which the organizational culture and structure of religious institutions affect the health of members. Pargament, Tyler, and Steele (1979) and Pargament, Silverman, Johnson, Echemendia, and Snyder (1983) indicate that churches vary in their psychosocial climates. These differences

are measurable and decisive for the worldviews and well-being of participants. Building on research that documents that the organizational climate of health care and educational institutions is a determinant of the attitudes and behavior of individuals, Pargament et al. (1979) studied the extent to which the organizational structures of churches and synagogues differ in their social control and belief-transmitting functions.

Congregations were defined as hierarchical or horizontal. Compared with horizontal congregations, hierarchical congregations were more likely to have status distinctions with differential power and privilege, to regulate individual behavior, and to have authoritarian religious beliefs. The study found that members of hierarchical congregations were less trustful of others, more likely to indicate that their lives were under the control of powerful persons and of God, and were less self-critical than members of horizontal congregations.

In a second study of 13 churches, Pargament et al. (1983) developed a congregational climate scale to explore the extent to which specific dimensions of congregations might be psychologically consequential for members. The 10 dimensions assessed were autonomy, sense of community activity, level of social concern, openness to change, stability, expressiveness, order, clarity, intrinsic religious orientation, and extrinsic religious orientation. The study found that congregational autonomy was positively related to the self-esteem and life satisfaction of church members.

Longitudinal studies are needed to assess the direction of causality and identify the process through which these relationships develop. Several different processes or combinations thereof could have produced these results (Pargament et al., 1983). Members with high self-esteem and life satisfaction may seek out and remain in autonomous congregations. Similarly, members with high self-esteem and life satisfaction may be more likely than those who view their lives less positively to perceive autonomy within their congregations. Alternatively, congregations that encourage participation may produce more positive outlooks in their members, or be more easily shaped by members who view themselves or their lives positively.

This study also found that most members of a congregation had similar perceptions of their church, and that congregations had distinctive psychosocial climates. For example, the small black Protestant congregations in the study were characterized by high levels of stability, expressiveness, social concern, and sense of community. Members of the small white Protestant congregations reported lower levels of

stability and social concern than their black peers, but had comparable levels of community and expressiveness. Large white Catholic churches, on the other hand, were high on stability and social concern but low on expressiveness and sense of community.

### Architecture

Another important but understudied aspect of religious symbolism is religious architecture. The physical structure of religious buildings can create particular images and convey complex and meaningful systems of ideas, beliefs, values, and feelings. Beyond the superficial appearance of the physical structure, there is often a deeper level of a symbolic system of religious ideas. Architecture can express ideology. Religious houses of worship very self-consciously attempt to retain their distinctiveness and reinforce particular values through architecture. Thus church architecture can be a determinant of the climate of the worship service and affect how people behave, feel, and think. By reinforcing particular feelings and actions, architecture can shape the hearts and minds of worshippers.

The physical layout of a church can reinforce notions of distance, differentiation, and gradation. Churches vary in the elevation of the pulpit and in the relative proximity of the preacher to the congregation, but the psychological consequences, if any, of these variations are not known. However, groups and individuals are sensitive to their particular setting, including the physical characteristics of that setting. Architecture can play an important role in social control and in the transmission of belief systems. Some have argued, for example, that the experience of worship in a Gothic cathedral has great impact on the participant:

The immense height, the vertically directed arches, the massive rectangular base rising to a vast arched dome, the darkness below and the gentle light above, the mystical atmosphere . . . all these orient him toward God in heaven, but also toward feeling himself to be within a protecting, powerful, trustworthy, transcendent being. . . . Similarly, the acoustics of the church and the invisibility of the musicians enable music to envelop the worshiper. Such an atmosphere intensifies the feeling of being small and humble in relation to the awesome God. (Group for the Advancement of Psychiatry [GAP], 1968, p. 704)

Processes of both social support and social control are reflected in religious symbols and rituals. For the religiously involved, these effects

of religion may be, paradoxically, both the most consequential and the least visible. Researchers' current self-report measures cannot adequately assess these effects. Small qualitative studies may be initially necessary to identify and understand and finally to catalog and quantify these specific aspects of religion. Adequate epidemiologic assessment of the role of religion in health will ultimately require the development of a parsimonious set of survey measures.

### *Measures of Subjective Religiosity*

Epidemiologic studies of religion have rarely included indicators of the subjective dimensions of religiosity. These typically include attempts to assess an individual's rating of the importance or centrality of religion, or belief in particular religious teachings. Most of these measures have not been theoretically driven and the empirical payoff has been small. In a recent review of the religion and mental health literature, Gartner et al. (1991) concluded that behavioral predictors of religious involvement, such as church attendance, are more strongly linked to health status than more subjective, attitudinal indicators of religious involvement. Similarly, using data from a national sample of black Americans, Ellison and Gay (1990) report that although public religious involvement was positively linked to life satisfaction, private religiosity was unrelated to well-being. These findings may reflect the failure of the literature to assess the most relevant aspects of subjective religious involvement.

### *Intrinsic-Extrinsic Religion*

A dominant approach to the measurement of the centrality of religion is one that emphasizes the motivations for religiousness. This work is best exemplified in the Religious Orientation Scale (ROS) of Allport (1950; also see Allport & Ross, 1967). Weber (1964) emphasized that it is the meaning provided by religious ideas that makes religion consequential for human behavior. He distinguished conceptions of the supernatural based on taboo from those based on religious ethics. A religious orientation based on taboo focused on the prescription and proscription of behavior. In contrast, one based on religious ethics involved a more general orientation to all aspects of life and social relationships. Allport's distinction between intrinsic and extrinsic religious orientation is somewhat similar to the Weberian approach.

According to Allport, intrinsic religion is an internalized, all-pervasive, organizing principle, whereas extrinsic religion is external and instrumental, a tool that is used to provide needs such as status and security. Allport's ROS and its subsequent adaptations represent the most widely used questionnaire measure in the empirical study of religion (Kirkpatrick, 1989). It has proven to be empirically robust and theoretically enlightening in studies of prejudice and other social phenomena (see Donahue, 1985). Allport (1963) hypothesized that intrinsic but not extrinsic religion would promote mental health, and declared 30 years ago that assessing the relationship between intrinsic religion and mental health was one of the most important research problems. To date, the association between the ROS and health status has not been examined in any population-based study, although it has been considered in small studies of religious individuals (Payne, Bergin, Bielema, & Jenkins, 1991).

The ROS has also received severe criticism. Stark and Glock (1968) indicate that Allport's typology mixes the conceptualization of religious commitment with its consequences, making it impossible to explain anything about commitment. Kirkpatrick and Hood (1990) indicate that Allport's intrinsic-extrinsic (I-E) framework has several weaknesses. First, the intrinsic dimension is poorly defined, because it measures religious commitment without considering the content of the beliefs to which the individual is committed. The extrinsic dimension, on the other hand, is well defined, but it is unclear as to which specific motives or goals underlie this orientation. Second, the extrinsic scale is unrelated to other measures of religiousness but correlated with variables such as prejudice, dogmatism, and trait anxiety. Third, the intrinsic-extrinsic dimensions should not be viewed as types but rather as poles on a continuum. Finally, the ROS is relevant only to religious populations. Kirkpatrick and Hood (1990) recommend an alternative conceptualization of the ROS in which each dimension is defined as a continuum from "not at all" to "very," with the former category representing the nonreligious.

Ongoing work on the I-E scale is addressing at least some of the criticisms of Kirkpatrick and Hood (1990). It is now apparent, for example, that the extrinsic items can be divided into subscales of personally oriented items and socially oriented items (Gorsuch & McPherson, 1989; Kirkpatrick, 1989). An I-E scale with revised wording that makes it applicable to a broader spectrum of the population also is now available (Gorsuch & Venable, 1983). A shorter version (14 items) also has been developed (Gorsuch & McPherson, 1989).



### Tolerance of Ambiguity

*Fundamentalism* is a term usually used to describe theologically conservative Protestants who hold doctrines such as the inerrancy of the scriptures as well as the virgin birth, deity, and resurrection of Jesus Christ. However, some view fundamentalism as a mind-set, distinct from specific religious teachings, that emphasizes a dogmatic, simplistic approach to life that is intolerant of ambiguity and uncertainty (Hartz & Everett, 1989). According to this perspective, the fundamentalist mind-set is inherently pathological. The health consequences of fundamentalism are yet to be explored empirically; this issue rather explicitly exemplifies the need to assess both the positive and negative consequences of religion. However, most denominations that would be regarded as fundamentalist (sects instead of churches) also are likely to exhibit high levels of social integration and support. Research is needed to identify the extent to which these effects may cancel each other out and how they combine to affect health status. An instrument measuring tolerance of ambiguity is available in both the original King and Hunt (1975) scale and its recommended revision (Hilty et al., 1984).

### Spiritual Well-Being

Psychologists generally recognize that one task of identity formation in late adolescence and early adulthood is finding a sense of purpose and direction in life and feeling satisfied about it (Richards, 1991). Religious socialization, including identification with religious characters or groups, can play a critical role in the establishment and development of religious identity in particular, and identity formation in general (GAP, 1968). Measures of spiritual well-being have attempted to capture the integrative nature of healthy human personality and may prove useful in understanding the relationship between religion and mental health (Moberg, 1984).

The life purpose dimension of the revised King and Hunt scale (Hilty et al., 1984) is one example of a spiritual well-being measure. The most widely used instrument of this kind is the Spiritual Well-Being Scale (SWBS) (Ellison & Smith, 1991). The SWBS consists of two subscales. The existential well-being scale measures the extent to which the individual has a sense of purpose, direction, and satisfaction in life. The religious well-being subscale assesses the degree of belief that one is loved by God and enjoys a fulfilling and meaningful relationship.

Studies reveal that the SWBS is correlated with a broad range of health status indicators as well as indicators of general well-being, church attendance, and other measures of religious involvement (Ellison & Smith, 1991). The scale also has been shown to have reasonable reliability and validity (Ellison & Smith, 1991; Richards, 1991). However, most of the research on this scale has not come from broad-based probability samples of the population. It is not clear how well this scale will apply to populations other than conservative Christians, and to non-Christian religious persons.

An alternative and promising approach to measuring spiritual well-being is the Maturity of Faith scales that have been used in a large national sample of Protestant adults and adolescents (Benson & Elkin, 1990). The main scale consists of a vertical subscale (relationship with God) and a horizontal subscale (relationships with others). Impressive levels of reliability and validity have been reported for the scale (Benson & Elkin, 1990). An important contribution of this approach is the use of the related Growth in Faith maturity scale, which covers the same dimensions as the Maturity of Faith scale but focuses on change on each item within the last 2 or 3 years. This approach emphasizes that religious involvement is not static and that researchers should study change in religious commitment.

### Other Methodological Issues

Much of the research literature on religion and mental health is based on cross-sectional studies. This raises the difficult issue of establishing causal priorities in the nature of observed associations. The issue of selection bias may not be trivial in research on religion and health. In a study of members of a small religious group, the Divine Light Mission, Galanter and Buckley (1978) found that a large proportion of individuals in this group had a high incidence of psychiatric treatment before joining the group. In addition, the type of psychiatric treatment, and presumably the degree of psychiatric impairment, varied by religious group.

Similarly, a study of converts to the Hare Krishna, Bahai, Jewish, and Catholic faiths reported that although these converts were similar in the overall frequency of psychiatric treatment, they differed in the type of psychiatric difficulties represented (Ullman, 1988). Catholic and Jewish

converts had a history of seeking outpatient psychiatric help for emotional problems, whereas the other converts were more likely to have a history of psychiatric hospitalization. In addition, this study indicated that a marked increase in turmoil precipitated by a specific stressor in the previous 2 years was a more frequent precursor to conversion among Jewish and Catholic subjects, whereas ongoing long-term difficulties were more characteristic for converts in the other groups.

These findings suggest that religious groups differentially recruit individuals with a history of psychological disturbance. Alternatively, certain characteristics of a religious group may meet particular psychological needs and thus specially appeal to particular kinds of psychiatric patients. This is consistent with the long-observed reality that individuals turn to religion in times of crisis. Thus, in cross-sectional studies, a positive relationship between religion and poor health status may in fact reflect the severity of the underlying crisis. The more serious the difficulty, the greater the likelihood of reliance on religion. For example, Lindenthal, Myers, Pepper, and Stern (1970) found that prayer increased in response to stress.

Researchers also need to give more systematic attention to specifying the nature of expected religious effects. Several examples in the literature suggest that the failure to specify correctly religion effects can lead to erroneous conclusions about the underlying relationship between religion and health status. For example, Idler and Kasl (1992) found no association between public or private religiosity and mortality once health status and other sociodemographic variables were included in the model. If they had stopped at this point, the study would have concluded that religion was unrelated to mortality. Instead, their theoretically derived prediction that religion might exert its effects on mortality through the ritual observance of holidays led them to perform additional analyses that documented an important role for religion in the timing of mortality.

Similarly, in a prospective study of the relationship between religion and psychological distress, Williams et al. (1991) found that religious attendance was not related to psychological well-being once initial health status was controlled. However, because they had hypothesized that religion may exert its effects by shielding an individual from adverse consequences of stress, they proceeded to test for interactions between religion and stress, and found evidence of a classic stress-buffering effect: In the face of stress, religious attendance reduced the negative consequences of stress on psychological well-being. Brown,

Ndubuisi, and Gary (1990) also found that religious involvement buffered the stress of a personal injury on depressive symptoms among black males.

Most researchers assume that the relationship between religion and mental health is linear. However, some evidence suggests that it might be important to test for nonlinearity in the association between religion and health status. Some studies have found a curvilinear relationship between religion and psychological symptoms (Ross, 1990; Shaver, Lenauer, & Sadd, 1980). That is, the very religious and the nonreligious enjoyed the best health. A similar curvilinear relationship also has been reported between religion and death anxiety (Nelson & Cantrell, 1980) and between religion and prejudice (Gorsuch & Aleshire, 1974).

Researchers should also pay more attention to the nature of the relationship between individual characteristics and religion. GAP (1968) noted that "the particular aspects of religion that are utilized by one individual . . . depend on what he brings to religion from previous development and present conflict, and from the ensemble of his liabilities, assets, and needs" (p. 702). Thus it is important to assess individual characteristics and test for interactions between the characteristics of the individual and religious involvement. Analyses of this kind may also provide insights into the underlying dynamics that influence the relationship between religion and health. Krause and Tran (1989) document, for example, that religious involvement counteracts the adverse effects of stress on feelings of self-esteem and mastery. One of the advantages of doing secondary analyses in large data sets is the typical availability of data on other predictors of health status. Researchers must capitalize on these opportunities to explore the mechanisms and processes through which religion exerts its effects and establish the importance of religion relative to other social and psychological resources (e.g., Idler, 1987).

The association between religion and health may also be affected by the larger social context. The literature suggests that the effects of religion may vary systematically by factors such as region, socioeconomic status, and race. Although levels of religious participation are high in the South, religion may be more consequential in the North than in the South. Stump (1987) indicates that southern religious behavior may reflect conformity to cultural norms, whereas religion in the non-South may be more strongly related to personal religious motivation. Consistent with this perspective, Ellison and Gay (1990), using a national sample of African-Americans, documented that religious participation was positively associated with subjective well-being only among nonsouthern blacks.

The effects of particular indicators of religion may also vary by socioeconomic status (SES). The rich and poor manifest their religion in different ways. Sociologists have long noted that although religious attendance is positively associated with SES, lower SES persons are more likely than their upper-class peers to pray in private, to believe in the doctrines of their faith, and to report personal religious experiences (Goode, 1966; Stark & Bainbridge, 1985). These findings are consistent with Weber's (1978) notion that an individual's location in social structure will determine both beliefs regarding personal salvation and the impact of these beliefs on attitudes and behavior.

Another neglected issue in the literature is the extent to which there may be racial and ethnic variations in the association between religion and health status. Historically, the black church has been the central institution in the African-American community, serving a broad range of religious and nonreligious functions. Some evidence suggests that religion may be more central in the lives of blacks than of whites. National data reveal, for example, that compared with 53% of whites, 74% of blacks indicate that religion is very important in their lives (Gallup Report, 1987). Similarly, a 1981 survey of the United States, Japan, South Africa, and 12 European countries found that black Americans, more than any other group, rate religion as extremely important in their lives (Gallup Report, 1985). Some limited evidence also suggests that religion and social class appear to be related differently for blacks and whites (Jacobson, Heaton, & Dennis, 1990), and that the factor structure of religion items for whites differs from that of blacks and Hispanics (Jacobson et al., 1990; Kenney et al., 1977).

The collection of data in the available epidemiologic studies of religion predated the current surge of interest in the relationship between religious involvement and health status. Accordingly, current studies are limited and deficient in the measurement of religion. A broader range of indicators of religion is probably linked to health status than those currently used. The next generation of epidemiologic studies will require the development of conceptually based, empirically validated, and cost-effective survey measures of the dimensions of religion that are consequential for health. This is not an easy task, as this chapter argues that at least some of the decisive effects of religion are not readily amenable to respondent self-report. However, health researchers can profit from the social-scientific literature on religion. Failure to listen and learn from this larger literature will lead to impoverished research and the publication of flawed conclusions.

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## The Anti-Tenure Factor in Religious Research in Clinical Epidemiology and Aging

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### Introduction

For decades, scholars have asserted that religion plays a potentially important role in the promotion of health and well-being (Levin & Vanderpool, 1991), yet research in this important area has not been forthcoming. Systematic reviews by Larson and coworkers have demonstrated the latter point quite convincingly. For example, Craigie, Larson, and Liu (1990) assessed all references to religion in the *Journal of Family Practice (JFP)* from 1976 through 1986, and Larson et al. (1992) assessed references to religion in the two leading psychiatry journals (*American Journal of Psychiatry* and *Archives of General Psychiatry*) over a 12-year period (1978-1989), and found few studies were published. Only 4.8% of 1086 quantitative articles published in *JFP*, and 132 (2.0%) of 6659 quantitative articles published in the two leading psychiatry journals contained a quantified religious variable. In most of those cases, the only measure used was an initial study demographic—denomination.

AUTHORS' NOTE: The first author's work on this chapter was supported by the National Institute of Mental Health under Geriatric Mental Health Academic Award No. MH00915.