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Research Note

Does Religion Influence Adult Health?*

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The effect of religion on health status was examined with a national sample of noninstitutionalized adults. Particular attention was given to assessing the effects of religious affiliation and religiosity — especially practice — on subjective health status. Respondents of all ages with a more conservative religious affiliation manifested poorer health than did those with a more liberal affiliation. However, higher levels of religious practice were positively associated with better health, regardless of age. The results show that religion may have both positive and negative effects on health, although in this research the positive effect was stronger.

INTRODUCTION

Religion has long been considered an important force in shaping social life. While the consequences of religion for morality and social organization have been the subject of much in the historical record and in the writings of pioneering social scientists, the effects of religion on personal health and wellbeing have more recently received considerable attention. Among the pioneering social scientists, Freud and Marx generally described religion's effect on human life and mental functioning as negative (e.g., for Freud, it was reflective of neurosis). By contrast, both Jung and Sorokin described religion's effects as beneficial to both personal wellbeing and social life (Koenig et al. 1988). This controversy as to whether religion has a positive, negative, or any effect on health and wellbeing in adulthood has continued in modern research literature.

Let us consider first the possibility that religion could be bad for one's health. Jarvis and Northcott (1987) have pointed out that religious involvement can produce adverse effects on health through ritual suicide (e.g., Jim Jones and The People's Temple),

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endogamous marriage customs, or ritual participation in unhealthy practices. Levin and Markides (1985), studying older Mexican-Americans, speculated that guilt from trying to follow strict religious norms may have been the reason that those who were more religious showed a higher prevalence of hypertension. In addition, some religious groups such as Jehovah's Witnesses or Christian Scientists may discourage blood transfusions or other types of medical treatment. However, most of these adverse effects of religion on health are not likely to occur in the mainline American denominations with which the majority of the population identifies. Rather, most scientific controversy has hinged on whether there are positive effects of religion on health, or no significant effects.

Numerous studies have reported that religiosity, or one of the dimensions of religiosity, has a positive impact on mental health or psychological wellbeing in adulthood (Crawford et al. 1989; Ellison et al. 1989; Gurin et al. 1960; Idler 1987; Johnson and Mullins 1989; Markides 1983; Pollner 1989; Poloma and Pendleton 1989; Ross 1990; Steinitz 1980; Witter et al. 1985). There is also growing scientific evidence for a positive link between religiosity and physical health status, although these studies are fewer in number. Some denominations such as the Latter-day Saints and Seventh-Day Adventists have fairly rigorous proscriptions against behaviors known to affect health (e.g., smoking). Gardner and Lyon (1982) found a lower rate of cancer among some religious groups, a finding attributed to the dietary and hygienic practices of the more religiously involved. Koenig, Smiley, and Gonzales (1988) reviewed research on this subject, especially as it pertains to aging, and found substantial evidence to support a positive effect. Lower rates of hypertension and mortality have been found among people with higher levels of religiosity (Berkman and Syme 1979; Comstock and Partridge 1972; Jarvis and Northcott 1987; Levin and Vanderpool 1987; Zuckerman et al. 1984).

Idler (1987) has examined the relationships between religious involvement, health status, and depression among a sample of noninstitutionalized older adults. She also found positive effects for both public and private religiousness on health, although the relationships varied by gender. She identified four mechanisms for such positive effects to operate: (1) health behaviors — religiosity reduces health-destructive behaviors; (2) social cohesiveness — religiosity activates a social network for coping and support; (3) coherence — religiosity activates a special meaning system to make sense of life; and (4) theodicy — religiosity modifies perceptions of distress associated with physical suffering, often giving hope to the individual.

Finally, some studies have found no association between religiosity and either physical or mental health. Campbell, Converse, and Rodgers (1976) found religiosity to be generally inconsequential and, on a couple of indicators of wellbeing, to be negatively related. However, Hadaway (1978), in a reanalysis of the Campbell et al. data, discovered errors in interpretation: Religious-mindedness positively affected wellbeing. Blazer and Palmore (1976), in the Duke Longitudinal Study, examined the link between longevity and the religious activities and attitudes of mature adults. They found no relationship between religiosity and longevity even by the ninth round of the panel study.

Many of the more recent contributors to this literature have accounted for the inconsistency in the findings by reference to differences in conceptualization and measurement. The concepts and measures for both religiosity and mental and physical health have varied considerably across studies. A recurrent theme since Glock's (1962) delineation

tion of religiosity is that it is a multidimensional phenomenon; it is therefore possible that only certain dimensions of religiosity have effects on health and wellbeing. In addition, the link between religion and health may be complicated by other variables, especially if they influence sampling. It is also conceivable that the "link" is actually spurious. Data on this subject are not experimental, meaning that questions of spuriousness and causal order remain.

First, let us consider age differences. The salience of religion throughout the life course may determine if, and to what degree, religion is related to health outcomes. For example, if older people become more religiously inclined while approaching death, either through serious illness or the frequent death of age peers, such a deepening of religiosity only in the last few months or years of life probably would not substantially affect health or mortality. On the other hand, it is possible that health behavior changes accompanying religious experiences earlier in life may make a difference in health and longevity. If this is the case, then people with little religious involvement would die earlier, making the older population more religious. At the same time, older people may find it difficult to maintain their religious activities because an increase in health problems could prohibit them from taking part in organizational forms of religion (Levin and Vanderpool 1987).

Another consideration in studying religiosity and health is the role of social class. It is widely understood that higher social class ranking is associated with less conservative and less active religious orientations in America (Chalfant et al. 1981). Social class, however, is also strongly and positively related to health status. Thus, without controls for social class variables, it is likely that high religiosity and/or more conservative religious orientations will be associated with poorer health. Couple this with life course changes in the indicators of social class, and it is clear that any examination of religiosity and health must simultaneously consider social class. Failure to do so would attribute effects to religiosity that in actuality are class-based effects. Indeed, Poloma and Pendleton (1989) recently showed that adding income to prediction equations for quality of life attenuated some of the effects of prayer as a predictor.

The purpose of this research was to examine whether religiosity and measures of religious affiliation were associated with self-reported health status in a national sample of noninstitutionalized adults. Unlike some previous studies which investigated religion and health among only older respondents, the present research included elderly subjects as well as younger people for more complete age comparisons. Relevant controls for social class and other variables were implemented in a multivariate design.

METHOD

The data for this study came from the 1984 and 1987 General Social Surveys conducted by the National Opinion Research Center (NORC), selected because of the recency and the availability of religion and health questions suitable for this research (Davis and Smith 1972-87). The questions used here were asked in both years (1984, $N = 1473$; 1987, $N = 1466$). The population sampled included all English-speaking, noninstitutionalized adults, age 18 and older in the United States. Therefore, the results are not generalizable to institutionalized adults. A description of some of the questions used, along with the coding algorithm of the range of responses, is presented in the Appendix.

Only brief mention of key variables is made here.

Variables concerning religion included religious affiliation and dimensions of religiosity. Religious affiliation was identified by respondents and then classified on the degree of conservatism by NORC (Davis and Smith 1972-87). While the trichotomous classification by NORC appears reasonable on face validity, some discriminant analyses confirmed the usefulness of the categorization for differentiating respondents on the dimensions of religiosity. In addition, respondents were asked for their religious affiliations during childhood. A dummy variable for a stable religious affiliation was then created to determine if lifelong affiliations were associated with better health.

Factor analysis of the religiosity items available revealed that three dimensions — practice, experience, and ideology — could be considered in this research. (These three are congruent with part of Stark's and Glock's [1968] five-dimensional classification.) An additive index of four items was created for religious practice; it had an alpha reliability coefficient of .77. (See Carroll and Roozen [1973] for similar measures.) Because only single-item indicators were used for the experiential and ideological dimensions of religiosity, they are referred to only by the indicators: a) closeness to God and b) life after death. Health status was measured with three self-reported items. Two items were fairly subjective ratings of health, while the third measured the recency of a hospitalization or disability episode. An additive index of these items had a reliability of .70. Most of the remaining items are fairly straightforward and are noted in the "Results" section or in the Appendix; only two others deserve brief comment.

As mentioned earlier, religion can have positive effects on health because it places people in support groups which give them access to emotional, cognitive, and material support in their times of need (Ellison et al. 1989). In order to consider other sources of social participation, this study used secular group membership as a control for the social support offered by a membership in any group. Controlling for this extra social support allowed us to see the effect that religion has on health, net of some secular social linkages. Finally, a control variable for life trauma was included in this study because of the negative effect stress may have on physical and mental health assessments (Ellison et al. 1989; Koenig et al. 1988).

The analysis began by examining differences in the dependent variables between the two surveys. Multiple regression of the dependent variables on the relevant predictors, and a dummy variable distinguishing the two years, revealed no significant differences over time. The surveys were then combined for the remainder of the analysis. (A few additional variables [e.g., occupational prestige] used in the preliminary analyses were deleted from the analysis because they did not have a significant effect on any of the dependent variables in the multivariate analysis.)

RESULTS

Although the focus of the study was the link between religiosity and health, we first regressed the religiosity variables on the covariates. These results are given in the first three columns of Table 1 and will be mentioned only briefly. (Since life after death is a binary variable, discriminant analysis was used to compare results with the regression approach. Both methods yielded similar results.) Only gender and a more conser-

vative religious affiliation had significant associations (in the same direction) with all three indicators of religiosity. Age differences were found for practice and closeness to God: Older people had relatively higher levels of religiosity. The effects for race and the social class indicators varied. There was no evidence in these data that life trauma

TABLE 1

REGRESSIONS OF RELIGIOSITY AND HEALTH STATUS ON INDEPENDENT VARIABLES

Independent Variables	Practice	Closeness to God	Life after death	Health Status
Personal Characteristics				
Age	.068** ^a .250 ^b	.008**	-.000 -.004	-.024** -.156
Gender (female) ^c	2.054** .217	.279** .170	.067** .082	.013 .002
Race (white) ^c	-.700** -.054	-.102* -.045	.099** .088	.486** .066
Income	-.037 -.022	-.017* -.056	-.003 -.019	.173** .183
Education	.129** .088	-.018** -.069	.009** .066	.091** .109
Employed ^c	.158 .016	.093* .055	.017 .020	.754** .139
Married ^c	.762** .081	.042 .025	.033 .041	-.135 -.025
Trauma	-.197 -.029	-.037 -.032	-.022 -.037	-.194** -.051
Memberships	.359** .136	.016 .035	.007 .030	-.038 -.026
Religious Affiliation				
Stable ^c	.165 .017	.087** .052	-.013 -.016	-.152 -.028
Conservative ^c	1.739** .291	.225** .214	.091** .174	-.171* -.051
Religiosity				
Practice				.061** .108
Closeness to God				.027 .008
Life after death				-.144 -.022
Constant	1.162	3.453	.387	8.270
R ²	.206	.131	.045	.172

^aUnstandardized coefficient.

^bStandardized coefficient.

^cAll binary variables are coded 0 and 1, with 1 = variable description.

* $p \leq .05$

** $p \leq .01$

is associated with greater religiosity, congruent with Hadaway's (1978) interpretation that religion operates primarily as a resource to the American public, not as a compensatory ideology for the deprived.

The results from the fourth equation (column) allow us to assess the effects of religion on health in this sample, net of the contribution of the relevant covariates. All significant relationships between the personal characteristics and health were in the expected direction. Better health was reported by younger people, whites, those with higher income and education, employed persons, and those who had experienced less trauma in the last five years. The largest effects among the personal characteristics were for income and age.

One might expect that married persons would score more favorably than nonmarried persons (divorced, widowed) on health status. Similarly, memberships in "secular" voluntary associations, as a form of social integration, might be expected to be associated with better health. Comparison of the first and fourth columns indicates that marital status and memberships had no direct effect on health status but that their effects were indirect via practice.

When the religion variables are considered, we can see a significant effect for a conservative religious affiliation. Note that this is a negative effect, meaning that a more conservative religious affiliation is associated with poorer health once all other variables are considered. Finally, practice emerges as significant in this equation. In other words, regardless of one's religious affiliation and the intensity of one's beliefs, higher levels of practice are related to better self-reported health status. The respondents' levels of practice — the degree to which they pray and participate in religious services — were significantly related to better health status, regardless of age.

Taking the two significant effects of religion variables together, one may conclude that while higher levels of practice are generally associated with better health, within varying levels of practice, people with a more conservative affiliation have poorer health. Note from the relative size of the standardized coefficients that the effect of practice is not trivial; it is greater than the effects for religious affiliation and race, and about equal to that for education — long considered a pivotal factor in predicting health status.

DISCUSSION

This research has sought to determine if religion has an effect on health status in a national sample of adults. The answer to that question depends, in part, upon what measure of religion is used. These results show that religion can have both positive and negative associations with health. In a multivariate analysis with controls for income and education, it was discovered that a conservative religious affiliation is more likely to be associated with poorer health status. Members of conservative denominations are more likely to be lower on the social class ladder, and it is clear that lower social class is correlated with poorer health. The results presented here, however, included simultaneous controls for two social class indicators and still revealed a negative effect of a conservative religious affiliation on health. This relationship deserves additional investigation.

There are numerous possible explanations for this relationship, but only a few will

be articulated here. First, people affiliated with more conservative denominations could resist medical intervention, as is the case with a few sects which disdain blood transfusions, surgery, or "heroic" measures. Second, people associated with conservative denominations might be more fatalistic in dealing with illness trajectories, feeling that they are inexorably determined by higher powers. Third, the conservatively affiliated respondents could be less likely to engage in a full range of health protective behaviors. They would probably avoid smoking and alcohol consumption, but what about overeating or sedentary lifestyles? Fourth, the conservatively affiliated respondents might understand medical interventions less well. Concomitantly, they might follow medical regimens less scrupulously.

Beyond these explanations, the effect of conservative religious affiliation could also be an artifact of not completely identifying social class influences. Although this study controlled for income, education, and employment status, there may be other effects of social class on health, especially when we consider this relationship over the life course. Current income would not necessarily reflect poor income a decade earlier in the person's life, or the lack of health insurance either at the time of the survey or previously in the individual's life. More studies are needed which would consider the relationship between religion and health in more detail so that some of these speculations can be tested. Longitudinal studies with controls for social class variables and medical insurance would be most beneficial.

Where religiosity is concerned, however, we can conclude that at least one dimension does have positive effects on health: The practice dimension was significantly associated with better health among these respondents. In other words, people who pray and participate more actively in their religions have better health. Thus, whether one is affiliated with a liberal or a conservative denomination, higher practice is consistently associated with better health. This finding confirms the work of others who have demonstrated a positive link between religiosity and better health (e.g., Berkman and Syme 1979; Idler 1987; Jarvis and Northcott 1987).

Of the three dimensions of religiosity studied, however, practice was the only one to show a significant contribution to health. Because our measures of the other two dimensions were based only on single-item indicators, some caution is warranted. Yet, it appears that how close one feels to God, or the nature of one's creedal beliefs, are not so consequential to health.

This research led us to the conclusion that religion is a factor to be seriously considered in the study of health; religion's effect may be both positive and negative, depending upon the aspects of religion considered (Mullen 1990). Practice, in particular, is associated with better health status for younger and older adults alike, despite the fact that a conservative religious affiliation is negatively related to health. While neither of these effects is very strong, the religiosity effect is the stronger of the two, and both merit further investigation. It appears that a consistently high level of religiosity may mediate the process of functional decline due to chronic conditions commonly associated with growing older. It is also then reasonable to expect that part of the association between age and religiosity (see Table 1) may be due to the selective survival of the most religious persons (Moberg 1990). In other words, mature adults often maintain their religion in later years, and doing so may be beneficial to their health.

Levin and Vanderpool (1987) and Levin and Markides (1986) have been critical of many previous studies which report a positive effect of religion on health. However, their criticisms hinge on studies which do not examine the various dimensions of religiosity or do not do so in a multivariate analysis. The present study attempted to consider three dimensions in a multivariate design. In spite of these efforts to improve upon previous research, there were three weaknesses of this investigation which are common to social epidemiological studies: (1) cross-sectional data, (2) limited indicators for religion variables (i.e., dimensions of religiosity), and (3) reliance upon self-reported health measures. Further research is needed; longitudinal studies which would follow respondents into institutional facilities would be especially valuable, since most investigations study either institutionalized or noninstitutionalized persons.

Two variables which have previously shown the apparent relationship between religious activity and health to be spurious are social class and social support. In this study, the impacts of religious affiliation and religiosity on health were apparent once income, education, and employment were controlled. With social class differences also accounted for, we have suggested that social integration or support is the reason that religion may positively affect health. In other words, religion may connect people to social groups which can play a salutary role in their lives. With an indicator similar to what others have applied (e.g., Ellison et al. 1989), the relationships between religious variables and self-reported health remained once controls for social memberships were imposed. Measures reflecting higher social integration (i.e., married, more social memberships) had indirect effects on health via practice.

Finally, Levin and Markides (1985) have asserted that the relationship between religious attendance and health may represent relationships between health and functional health (e.g., the ambulatory capacity to attend services). While no useful measure of functional health was available in these data, two points bear consideration. First, multivariate controls were applied for the degree of trauma experienced by respondents during the previous five years. This does not rule out the functional capacity interpretation, but it does suggest that any restriction in daily activities which accompanied the trauma cannot explain away the relation between religious variables and health. Second, the present study discovered a negative effect of conservative religious affiliation on health and a positive effect of religious practice on health. The fact that the direction of the effects of religion on health varied by the indicators used also minimizes the plausibility of interpretations based solely upon physical capacity.

It appears from this study that different types of religious phenomena have varying effects on health. Thus, pioneering social scientists such as Freud and Marx, as well as Jung and Sorokin, were probably correct in their different views, but each apparently understood only part of the reality of how religion affects health. Some restraint is warranted in offering conclusions about either the ubiquitous or the immediate impact of religion on health. The salutary effect, if it exists, probably takes considerable time to operate over the life course. Longitudinal studies will be needed to examine more accurately these processes and the effects of religion on health.

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APPENDIX

DESCRIPTION OF SELECTED VARIABLES (WITH CODING ALGORITHM FOR RANGE)

- A. Religious Practice** (alpha = .77)
1. About how often to you pray? (1) never, to (6) several times a day.
 2. How often do you attend religious services? (0) never, to (8) several times a week.
 3. Would you call yourself a strong (name of religious preference) or not very strong (name of religious preference)? (1) not very strong, to (3) strong.
 4. Now we would like to know something about the groups or organizations to which individuals belong. Here is a list of various organizations. Could you tell me whether or not you are a member of a (church-affiliated) group? (0) no (1) yes.
- B. Closeness to God (Experiential)**
How close do you feel to God most of the time? Would you say (5) extremely close, to (1) does not believe in God.
- C. Life After Death (Ideological)**
Do you believe there is a life after death? (0) no (1) yes.
- D. Health Status** (alpha = .70)
1. Would you say your own health, in general, is (4) excellent, to (1) poor?
 2. For each area of life I am going to name, tell me the number that shows how much satisfaction you get from that area: Your health and physical condition? (1) none, to (7) a very great deal.
 3. Hospitalization or disability during last five years, coded: (3) no episode of hospitalization or disability, to (0) episode during both periods.
- E. Income:** Total family income ranging from (1) less than \$1,000, to (12) \$25,000 or more.
- F. Education:** Ranges from (0) no formal schooling, to (20) eight years of college.
- G. Trauma:** Number of traumatic events (deaths, divorces, and unemployments) happening to the respondent during the last five years ranging from (0) none, to (3) three.
- H. Group Memberships:** Number of secular groups or organizations to which individual belongs ranging from (0) no memberships, to (16) 16 memberships.