

RELIGION AND PSYCHOLOGICAL DISTRESS IN A COMMUNITY SAMPLE

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Abstract—This paper examines the effect of religious attendance and affiliation on psychological distress in a longitudinal community study of 720 adults. Religious affiliation is unrelated to mental health status. In contrast, although religious attendance does not directly reduce psychological distress, it buffers the deleterious effects of stress on mental health. That is, in the face of stressful events and physical health problems, religious attendance reduces the adverse consequences of these stressors on psychological well-being.

Key words—religion, psychological distress, stress

The relationship between religion and health status has been receiving increasing scientific attention in recent years. One indicator of this interest is the growing number of reviews focused on religious variables that have appeared in the medical and social science literature [1–7]. In terms of mental health outcomes, the literature indicates that more often than not, religion measures are inversely associated with indicators of psychological distress. Bergin [5] reviewed 26 studies that assessed the association between religion and mental health status. He reported that almost half of the studies found an inverse association between religion and psychological symptoms with the remainder about equally divided between those that found a positive relationship and those that reported no association. However, given that 80% of the studies reviewed by Bergin [5] utilized student samples, it is difficult to draw conclusions about the generalizability of these findings.

Studies employing more representative samples present a similar mixed pattern of findings. Two studies based on national probability samples have reported an inverse association between religious attendance and psychological distress [8, 9]. Similarly, several community studies have reported inverse associations between measures of religion and scores on screening scales of global distress [10–13]. At the same time, other community studies report no association between religion and mental health status [14–16].

The literature assessing the mental health consequences of religion is plagued with conceptual and methodological limitations which require that great caution should be exercised in interpreting the findings. For example, with few exceptions [16, 17] most of the existing studies have used cross-sectional designs in which religious involvement and mental health status are measured simultaneously. A given level of psychological functioning can be either

a cause or a consequence of religious beliefs and behavior. In cross-sectional analyses it is impossible to detect causal directionality in the relationships observed. Researchers have also given inadequate attention to the measurement of the religious variable and to the underlying processes by which religion may affect health status [2, 10, 17–20].

One way in which religious involvement may affect health status is by modifying the relationship between stress and illness. Stress has been shown to have pervasive negative effects on physical and mental health [21], but psychosocial resources can compensate for or moderate the impact of stress on health [22]. Recently, Krause and Van Tran [23] documented that religious involvement is a critical psychosocial factor that counteracts the adverse effects of stress on feelings of self-esteem and mastery. The literature on stress recognizes that a given psychosocial resource, such as religion, may affect psychological distress by directly enhancing mental health status, irrespective of the level of stress, and/or by buffering the effects of stress on health [22]. The buffering hypothesis postulates that in the face of stress, religion can protect the individual from the potentially negative consequences of stress. To our knowledge, there have been no attempts to empirically assess the dynamics of the association between religion, stress and psychological distress.

This paper seeks to enhance our understanding of the relationship between religious behavior and mental health by examining how two measures of religious involvement, religious attendance and religious affiliation, combine with stress to affect psychological distress. In 1967, a random sample of residents of metropolitan New Haven were interviewed. Lindenthal *et al.* [13] have reported on the cross-sectional associations between religion and mental health status. They found that both religious affiliation and religious attendance were inversely associ-

ated with psychological distress. Two years later, a second wave of data was collected from these New Haven residents. To date, no analyses have related the 1967 religion measures to distress in 1969. In addition, although controls were utilized for socio-demographic variables in the original study, no attempts were made to assess the extent to which the association between religion and psychological distress varies for structural characteristics such as race or socioeconomic status. A growing body of evidence indicates that stress, the resources to cope with stress, and the efficacy of these resources vary for groups occupying different structural positions in society [22].

This paper focuses on the original respondents who were reinterviewed in 1969. We assess the extent to which the pattern of findings in the cross-sectional analyses remain robust in the more rigorous prospective analyses. Specifically, we address the following research questions:

1. How do religious attendance and affiliation relate to psychological distress?
2. Do the consequences of religious involvement vary by major sociodemographic characteristics such as age, race, education and gender?
3. To what extent can measures of religious involvement buffer or moderate the effects of stress on health?

METHODS

The analyses reported here use data from the Myers *et al.* [24, 25] longitudinal study of mental health in New Haven, Connecticut. The sample consists of 720 adults who were reinterviewed in 1969 from an original random sample of 938 respondents who were first interviewed in 1967. Table 1 lists the means, standard deviations and intercorrelations among the variables utilized. Our sample is 44% male, 11% black, 26% unmarried, and has a median education level of 12 years and a mean age of 44.8 years.

Psychological distress is measured by the Gurin *et al.* [8] symptom checklist scale. This scale consists of 20 statements of psychophysiological symptoms that indicate the presence of moods of depression and anxiety. The symptoms of the Gurin scale were selected from among those most frequently mentioned by patients in treatment and they allow

for respondents to be ordered on a continuum of reported distress. Respondents reported the frequency with which each symptom was experienced. Scores on the Gurin scale thus range from 20 (all symptoms experienced 'often') to 80 (all symptoms occurring 'never'). In contrast to our use of the Gurin scale as a continuous measure, the scale is sometimes used qualitatively to distinguish between the mentally impaired (score = 66 or lower), and the non-impaired. We believe that our continuous measure of psychological distress is more theoretically appropriate for the study of the association between religion and mental health than a more qualitative distinction between psychiatric cases and normals. If religion has positive effects on mental health, they are likely to be evident throughout the continuum of mental health status and not only at the extreme of the distribution.

Two measures of religious commitment at wave one (1967) are utilized. Religious attendance measures the usual frequency of attending religious services (values range from 1 = never to 6 = more than once a week). To facilitate interpretation of product terms in the regression analyses, the religious attendance measure was converted to a standard score based on the mean and standard deviation of the total sample, and a constant was added to this standardized variable so that the lowest actual value is zero. The religious affiliation measure is based on the response to the question: "Are you affiliated with any church or religious group?" (1 = yes, 0 otherwise).

Two summary measures of stressful life experiences, occurring during the two years between the interviews, are utilized. Both measures of stress are listed in the Appendix. The first is an index of undesirable life events. The second stress measure is a sum of the number of physical health problems experienced. To avoid confounding between the measure of psychological distress and the health problems index, following Kessler and Cleary [26], we excluded those health complaints that intuitively appeared to have a strong psychosomatic component. From a list of 44 symptoms, we selected those 16 health complaints for which a psychosomatic component would be minimal.

Ordinary least squares (OLS) regression analyses utilizing the regression program in SAS [27] are used for estimating the magnitude and statistical significance of the relationships among religious

Table 1. Means, standard deviation and intercorrelations (decimals omitted) among variables

	1	2	3	4	5	6	7	8	9	10	11	12	Mean	Standard deviation
1. Age	—												44.81	16.67
2. Education ¹	-.39	—											3.37	1.50
3. Marital status (married)	-.08	.06	—										0.74	0.44
4. Gender (male)	.15	.05	.14	—									0.44	0.50
5. Race (black)	-.15	-.15	-.20	-.09	—								0.11	0.32
6. Attendance 1967	-.01	.09	.03	-.10	-.01	—							1.68	1.00
7. Attendance 1969	.03	.02	.02	-.13	-.01	.54	—						2.19	1.00
8. Health problems	.20	-.15	-.07	.02	.08	-.06	-.08	—					0.73	0.97
9. Life events	-.11	-.04	-.01	-.01	.07	-.04	-.06	.14	—				0.82	1.14
10. Gurin 1967	.06	.15	.12	.14	-.12	.17	.14	-.27	-.15	—			72.05	8.19
11. Gurin 1969	.00	.15	.06	.10	-.03	.10	.12	-.37	-.32	.53	—		72.85	7.74
12. Affiliation 1967	.02	.12	.08	-.04	.00	.41	.27	-.04	-.01	.09	.02	—	0.75	0.49

¹The education variable is coded as follows: 1 = less than 7 years, 2 = 7-9 years, 3 = 10-11 years, 4 = 12 years, 5 = 13-15 years, 6 = college graduate and 7 = graduate on professional training.

involvement, stress and psychological distress. OLS regression is fully appropriate for our continuous dependent variable. The correlation matrix from which the regression models were estimated is presented in Table 1. Pairwise present correlations were used in all regression analyses. The analyses proceeded in a series of steps in which we estimated the effects of religious involvement on psychological distress. This relationship was then adjusted for potentially confounding sociodemographic factors. The sociodemographic variables utilized are age (in years), education (nominally scaled variable coded from 1 = less than 7 years of education to 7 = graduate or professional training), gender (1 = male), marital status (1 = married, 0 otherwise), and race (1 = black, 0 otherwise). Subsequent regression models assessed the association between stress and psychological distress and the extent to which religious involvement may buffer the effects of stress on health.

A final step in all analyses involved entering the Time 1 Gurin score as a predictor of Time 2 Gurin. The use of the Time 1 distress measure effectively converts the Time 2 outcome into change scores. This is appropriate in these analyses because it allows us to determine the extent to which any improved mental health functioning found among those high on religious involvement is significantly greater than any improvement found among those having lower scores on the religion measures.

RESULTS

Religion and psychological distress

Table 2 presents the results of three regression analyses that assess the association between psychological distress and religion. In the first model, Time 2 (1969) Gurin scores are regressed on the Time 1 (1967) religious attendance and affiliation. In the second regression model, controls are introduced for sociodemographic factors (age, education, marital status, gender and race) that were measured at Time 1. The final model adds the Time 1 (1967) Gurin score as a predictor of the Time 2 Gurin score.

The first model in Table 2 indicates that although religious affiliation is unrelated to psychological distress, religious attendance is positively associated with the Time 2 (1969) Gurin score. Persons who attend religious services regularly report lower levels of psychological distress than infrequent attenders and non-attenders. This relationship remains robust when adjusted for the sociodemographic variables but it is reduced to non-significance when controlled for Time 1 (1967) psychological distress. Religious attendance at Time 1 is not associated with increases in psychological well-being, as measured by the Gurin scales. Thus, in the face of rigorous statistical controls for the possible confounding of public religious participation with scores on the Gurin scale, we find that attendance is unrelated to psychological distress. Our prospective analyses have failed to replicate the inverse associations between religious commitment and psychological distress that were reported for the cross-sectional analyses at Time 1 [13].

We tested for nonlinearity in the association between religious attendance and mental health status.

Table 2. Analyses of the association between Time 2 (1969) Gurin scores and the religion measures at Time 1 (1967)

Independent variables	I	II	III
	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)
Attendance	0.83** (0.32)	0.84** (0.32)	0.16 (0.28)
Affiliation	-0.46 (0.75)	-0.88 (0.74)	-0.88 (0.64)
Age		0.03 (0.02)	0.006 (0.02)
Education		0.94** (0.22)	0.48** (0.19)
Married		0.87 (0.69)	0.11 (0.60)
Sex (men = 1)		1.60** (0.60)	0.54 (0.52)
Race (black = 1)		0.63 (0.97)	1.30 (0.84)
Gurin 1967			0.49** (0.03)
Constant	71.80	66.14	35.81
R ²	0.010	0.050	0.290

** = $P < 0.01$, 2-tailed tests.

b = unstandardized regression coefficients.

Shaver *et al.* [28] reported a curvilinear relationship between religion measures and psychological symptoms. The very religious and the non-religious enjoyed the best reported health. Accordingly, to a regression equation that included the demographic variables and Time 1 (1967) religious attendance, we added the squared coefficient for religious attendance (quadratic term). A significant quadratic term would indicate that the association between religious attendance and distress is curvilinear. The quadratic term was not significant (analysis not shown), indicating the absence of curvilinearity in the association between religion and psychological distress.

We also explored the extent to which variations exist by race, gender and educational level in the association between the religion measures and psychological distress. Specifically, for each of these sociodemographic variables, we regressed Time 2 (1969) Gurin scores on the two religion variables, all of the sociodemographic variables, and the relevant multiplicative term for the interaction between each religion measure and the sociodemographic correlate under consideration. In these analyses (not shown), none of the interaction tests were significant.

In cross-sectional studies researchers frequently assume that the reported level of religious involvement is a stable characteristic of the respondent. In contrast, religious behavior may be a fairly transient phenomenon. Lindenthal *et al.* [13], for example, noted that when faced with stress, respondents reported a decline in religious attendance. The fact that we are working with panel data allows us to explore the nature of changes in religious attendance between 1967 and 1969 and the consequences that these changes could have for mental health status. First, we noted that attendance levels were relatively stable over the course of 2 years. Table 1 reveals that the correlation between religious attendance at Time 1 (1967) and Time 2 (1969) was 0.54.

Second, we divided our sample into subgroups based on the combination of the level of religious attendance reported at Time 1 (1967) and Time 2

(1969). At each time point, all respondents were classified into one of three categories: high attenders (persons who attended religious services once a week or more), moderate attenders (individuals who attended once a month to two or three times a month) and low attenders (those who never attended as well as those who attended a few times a year or less). Respondents were then assigned to one of five categories based on their 1967 and 1969 attendance. The *stably high* group ($n = 216$) consists of persons who were high attenders at both time points. The *newly high* ($n = 70$) are high attenders in 1969 who were either moderate or low attenders in 1967. The *declining* attendance group ($n = 99$) is comprised of high attenders at Time 1 who were moderate or low attenders at Time 2. The *moderate* group ($n = 152$) consists of persons who were moderate attenders at both time points, as well as those who fluctuated from the moderate to low level or vice versa between the two data collection points. Finally, the *stably low* ($n = 149$) were low attenders at both time points.

Table 3 presents the results of analyses that examined the relationship between attendance patterns and psychological distress. We anticipated that those who reported consistently high levels of attendance and those who increased their attendance would have lower levels of psychological distress than persons with consistently low attendance levels. The first model in Table 3 indicates that the stably high, the newly high and the declining attendance group all had significantly higher scores on the Gurin scale (that is, less psychological distress) than the stably low attendance group. Thus, a high level of religious attendance in 1967 or in 1969, irrespective of their attendance level at the other time point, is predictive of psychological well-being. However, similar to the findings in Table 2, these associations do not remain significant when adjusted for Time 1 (1967) distress scores.

Religion, stress and mental health

We have noted that religion does not directly enhance the psychological well-being of its adherents.

Table 3. Analyses of the association between Time 2 (1969) Gurin scores and attendance at Time 1 (1967) combined with Time 2 (1969)¹

Independent variables	I <i>b</i> (SE)	II <i>b</i> (SE)
Religious attendance		
a. Stably high	1.63* (0.73)	0.23 (0.67)
b. Newly high	2.06* (0.99)	0.58 (0.90)
c. Declining	1.90* (0.88)	0.41 (0.80)
d. Moderate	0.68 (0.79)	0.01 (0.71)
e. Stably low (omitted)		
Time 1 Gurin		0.40** (0.03)
Constant		
<i>R</i> ²		

* $P < 0.05$; ** $P < 0.01$, 2-tailed tests.

¹Both models include controls for age, education, marital status, gender and race.

b = Unstandardized regression coefficients.

We now turn to examine the buffering hypothesis. Can religion protect individuals from at least some of the negative consequences of stress? Table 4 presents four models that explored the associations among religion, stress and psychological distress. The use of the Time 1 measures of religion in these analyses excludes the possibility that any modifying effects that we observe are due to changes in religious involvement resulting from stress. The first model shows the association of the two stress measures and the two religion measures to the Time 2 (1969) Gurin scale, controlling for the sociodemographic variables. The second model adds adjustment for the Time 1 (1967) Gurin score, and models three and four tests for interactions between religious attendance and life events, and attendance and health problems, respectively.

Table 4 shows that both life events and health problems are significantly inversely associated with scores on the Gurin scale. As expected, stress is positively related to psychological distress. Model II indicates that the coefficients for stress are reduced

Table 4. Analyses of the association between Time 2 (1969) Gurin scores, Time 1 (1967) measures of religion and indicators of stress¹

Independent variables	I <i>b</i> (SE)	II <i>b</i> (SE)	III <i>b</i> (SE)	IV <i>b</i> (SE)
Attendance	0.62* (0.28)	0.11 (0.26)	-0.23 (0.30)	-0.32 (0.32)
Affiliation	-0.84 (0.66)	-0.83 (0.59)	-0.87 (0.59)	-0.65 (0.60)
Life events (LE)	-1.77* (0.23)	-1.53** (0.21)	-2.26** (0.40)	-1.55** (0.21)
Health problems (HP)	-2.69** (0.28)	-1.85** (0.26)	-1.88* (0.26)	-2.70** (0.44)
Gurin 1967		0.39** (0.03)	0.39** (0.03)	0.40** (0.03)
Attendance × LE			0.43* (0.21)	
Attendance × HP				0.52* (0.23)
Constant	70.11	44.53	45.4	45.3
<i>R</i> ²	0.251	0.399	0.403	0.404

* $P < 0.05$; ** $P < 0.01$, 2-tailed tests.

¹All models include controls for age, education, marital status, gender and race.

b = unstandardized regression coefficients.

but remain significant when controlled for Time 1 (1967) psychological distress. Model II also reveals that the relationship between attendance and distress is reduced to non-significance when controlled for T1 distress. Models three and four reveal that both of the multiplicative terms for interactions between stress and religious attendance are significant. The interaction terms capture operant religious effects that would go unnoted otherwise. Moreover, the sign is positive for both interaction coefficients. This pattern of results reflects classic buffering effects. That is, at low levels of religious attendance, stress is associated with increased levels of psychological distress. However, as the level of religious attendance increases, the adverse consequences of stress are reduced. Similar analyses for the association between religious affiliation and the stress measures were not significant.

In sum, consistent with other research [7], we find that our measure of religious behavior (religious attendance) is more consequential for health status than our indicator of religious affiliation. The affiliation measure is unrelated to psychological distress. In contrast, although religious attendance does not directly reduce psychological distress, it does buffer the impact of stressful life events and physical health complaints on psychological well-being.

DISCUSSION

The findings reported here underscore the importance of giving more systematic research attention to the consequences of religious beliefs and behavior for health and well-being. National surveys reveal the continuing importance of public and private religious involvement in contemporary American life [29]. Our results indicate that religion may be a potent coping strategy that facilitates adjustment to the stress of life. Further exploration of this issue merits serious and sustained research attention.

One compelling reason to replicate the analyses reported here is the possibility that they may reflect period or cohort effects. The data utilized in this study are over 20 years old. It is possible that the findings documented here are true only for that earlier time period and would not apply today. In a comprehensive review of the literature on religious involvement and subjective well-being, Witter *et al.* [30] found a stronger relationship between religion and subjective well-being in earlier studies than in more recent ones.

Our use of longitudinal survey data is clearly an improvement over merely studying cross-sectional associations but analyses of two wave panel data are not without serious limitations [31]. For example, the inclusion of Time 1 health status adjusts for baseline differences among respondents in the levels of health. However, if health status at Time 2 is also affected by other unmeasured causes, the Time 1 health status indicator is an inadequate proxy for the myriad factors that are not included in the prediction equation. The presence of measurement error is another serious limitation. Errors of measurement can create spurious covariance among the variables in the regression models. Theoretically-grounded research that utilizes multiple indicators

of religion and that employs structural equation modeling procedures [32] can begin to address these limitations.

This paper also illustrates some of the critical shortcomings in current research on religion and mental health. Religious attendance and religious affiliation are the only measures of religious commitment that we utilized. These are two of the most commonly used measures in research on religion [1]. In contrast, religious involvement is a complex multi-dimensional phenomenon [33–35]. King and Hunt [33], for example, have identified more than a dozen different ways of being religious, and have developed and tested scales to measure each component. Similarly, Levin and associates [2, 6, 20, 36] have proposed numerous theoretically informed mechanisms by which religion can affect health status that clearly constitute the most fruitful extant starting ground for empirical investigations of the effects of religion on health. The advancement of our understanding of the nature of the association between religion and health, is contingent on efforts to comprehensively assess religion, and identify the critical dimensions of religious commitment that are linked to health status.

Research efforts of this kind are necessary to understand even the results presented here. We reported that religious attendance buffers or moderates the relationship between stress and health. However, we are unable to tell if this effect is linked to anything intrinsically religious. Although we employ controls for formal education in all of the analyses, it is still possible that the attendance measure is a proxy for some aspect of social status. Sociologists have long noted that religious participation is frequently a badge of socioeconomic status, secular in character, and of no greater religious significance than participation in other community organizations [37]. And there is abundant evidence that participation in formal and informal social groups, religious and non-religious, can promote health, reduce stress and buffer the effects of stress on health [22]. Moreover, besides social class, religious attendance may be confounded with functional health [36].

It follows that a simple measure of the frequency of religious attendance does not adequately capture public religious participation. A comprehensive assessment of public religious involvement must include attendance at religious meetings other than the main weekly worship service, financial support of religious organizations, and holding leadership and volunteer positions in religious groups [35]. Researchers must then seek to identify how these public aspects of religious involvement relate to private dimensions of religious beliefs and behavior and how they combine to affect levels of health and well-being.

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APPENDIX

*Measures of Stress**Life events*

The 28 undesirable events are: (1) failed school or training program; (2) problems in school; (3) moved to a worse neighborhood; (4) widowed; (5) divorced; (6) separated; (7) trouble with in-laws; (8) serious physical illness; (9) serious injury or accident; (10) death of a loved one; (11) stillbirth; (12) frequent minor illness; (13) mental illness; (14) death of a pet; (15) demoted or changed to a less responsible job; (16) laid off temporarily; (17) business failed; (18) trouble with boss; (19) out of work for over a month; (20) fired; (21) financial status a lot worse than usual; (22) foreclosure of mortgage or loan; (23) appearance in court; (24) detention in jail; (25) arrested; (26) law suit or legal action; (27) loss of driver's license; and (28) change in relations with neighbor, friend and relative such as serious or major disagreement.

Health problems

The 16 health problems are: (1) eye trouble; (2) ear trouble; (3) sinus trouble; (4) throat trouble; (5) bronchitis; (6) pneumonia; (7) tuberculosis; (8) boils and abscesses; (9) diabetes; (10) kidney trouble; (11) bodily injury; (12–14) operations; (15) cancer or tumors, and (16) tooth trouble, excluding routine prophylaxis.