Religious Activity and Depression Among Community-Dwelling Elderly Persons With Cancer: The Moderating Effect of Race

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Objectives. Research has been oriented toward elucidating the links between religion and mental health. The purpose of this article is to further our knowledge in this area by examining the effect of religious activity on depressive symptomatology among community-dwelling elderly persons with cancer. We also test whether these effects differ between Blacks and Whites.

Methods. We use two waves of data collected from a community-dwelling sample of elderly persons living in North Carolina. Depressive symptomatology is measured using four subscales from the CES-D 20 scale: somatic-retarded activity, depressed affect, positive affect, and interpersonal relations. Measures of religious activity include service attendance, religious devotion, and watching or listening to religious programs.

Results. The findings indicate that among Blacks with cancer, religious activity is related to lower levels of depressive symptomatology; no such relationship is found for respondents with other illnesses or no illness. Further, the effects of religious activity are stronger among Blacks than Whites.

Discussion. The analyses lend support to the hypothesis that religious activity is a strong predictor of depression in elderly adults with cancer. This finding, however, is not as strong as we had anticipated.

RESEARCH has explored the links between religion and mental health (Ellison, 1991; Koenig et al., 1992; Pollner, 1989; Williams, Larson, Buckler, Heckmann, & Pyle, 1991), physical and functional health (Idler, 1987; Idler & Kasl, 1997; McIntosh & Spilka, 1990), subjective health (Broyles & Drenovsky, 1992; St. George & McNamara, 1984), and mortality (Idler & Kasl, 1992; Oxman, Freeman, & Manheimer, 1995). A subset of this research has focused on the way religion functions for people who are ill or functionally impaired (Idler, 1995).

The purpose of this article is to expand upon the extant research that has focused on the function of religion among individuals with cancer. Drawing on previous work in this area, we develop and test several hypotheses using a large sample of community-dwelling elderly people. We also go beyond earlier research in two ways. First, we include a number of measures that may influence the relationship between religion and cancer. Second, using a sample of Black and White elderly persons, we examine the relationships among religion, cancer, and mental health and how they differ by race. Given the importance of religion among elderly Blacks (Chatters & Taylor, 1994), these differences may prove substantial.

THEORETICAL OVERVIEW

Cancer as a Life Stress

Researchers have examined the links between religion and cancer because of the stress that often accompanies a cancer diagnosis. In a study of women with breast cancer, Johnson and Spilka (1991) noted some problems associated with cancer:

Perhaps nowhere is misery greater than when an individual contracts cancer. Potential terminality immediately becomes a salient issue, along with expectations of pain, anguish, and suffering. Physical problems are compounded with a host of psychological difficulties, not the least of which are feelings of isolation, separation, dependency, and helplessness (p. 21).

In these few sentences, the authors mention a number of stressors for persons with cancer. First and foremost is the possibility of death. An abundant body of literature has examined the stresses and coping mechanisms associated with death and dying (e.g., Conrad, 1985; Koenig, 1988; Thorson & Powell, 1990). Perhaps a worse stressor than approaching death, however, is an uncertain prognosis following a cancer diagnosis. The uncertainty associated with cancer may force patients to change or postpone their goals and expectations for the future (Rowland, 1989). Moreover, because the course of cancer can be unpredictable, normal methods of active coping may prove maladaptive (Hilton, 1989).

Even in remission the cancer patient faces considerable uncertainty and the attendant stress. As one author notes, "The remission phase, then, is a process of adapting, not to a terminal disease but to uncertainty" (Nathan, 1990, p. 225).

Johnson and Spilka (1991) also note fears associated
with pain and suffering. Not only do many cancer patients suffer discomfort and pain from the disease itself, but they may also suffer side effects from the cancer treatments. For many, chemotherapy causes vomiting, fatigue, diarrhea, alopecia, and other physical problems (Holland & Lesko, 1989). Radiation therapy may produce similar symptoms as well as bring about significant changes in the appearance of the patient (Holland, 1989).

Cancer patients also face significant stressors in their social lives. One problem is the potential inability to fulfill normal role expectations in the workplace, in the community, or at home. Parsons (1951) defined persons with an illness as being in the "sick role" and as such are exempt from the expectations of normal role functioning. However, this exemption does not necessarily mean that cancer patients will not despair over their inability to attend to daily tasks or fulfill social obligations.

Cancer patients may also feel tension due to their need of assistance from others. Cancer patients who need assistance on a regular basis may begin to feel helpless or dependent. These feelings may, in turn, affect their self-image and bring about more feelings of despair. This problem is especially acute among elderly persons who need assistance in daily activities, and, in so doing, find comfort. Studies have shown that elderly persons who engage in devotional activities experience less fear of death. For example, drawing on a sample of community-dwelling elderly, Koenig (1988) found that those elders who reported more frequent prayer activity during times of stress were more likely to report little or no fear of death.

Religion may also benefit the cancer patient in terms of the secondary appraisal. Religious people may see their ties with God as a source of power and strength that is best used in times of trouble. A number of authors have noted the efficacy of devotional activities or feeling close to God for increased mental well-being (e.g., Ellison, 1991; Pollner, 1989). Many of these findings result from nationally representative samples drawing on relatively healthy populations. For the individual with cancer, the beneficial effects of private religiosity may be even greater. Jenkins and Pargament (1988) showed that among cancer patients, those who believed that God was in control of their situation had better self-esteem and less psychological disturbance. A number of other studies have shown that cancer patients often rely upon private religious activities to cope with their illness. For example, using a sample of hospitalized cancer patients, Sodestrom and Martinson (1987) found that patients most frequently relied on prayer to cope with their illness. Similarly, Halstead and Finsler (1994) reported that in a sample of long-term cancer survivors, prayer was the most commonly cited coping strategy. Other studies of women with breast cancer also have documented the importance of prayer for coping with illness (Johnson & Spilka, 1991; Mickley, Soeken, & Belcher, 1992).

Public Religious Activities

Individuals with cancer may also benefit from public religious activity, such as attending church services. Researchers in religion and health often refer to the relationship between public religious activities and health as the social cohesiveness hypothesis (Idler, 1987). From this perspective, it is commonly thought that involvement in a religious community may be beneficial for a number of reasons. First, as Berger (1967) argued, regular fellowship with others of similar beliefs is important for maintaining one's own beliefs. During stressful times when religious faith may waiver, the spiritual support and fellowship provided by other congregants are especially important for the maintenance of religious beliefs.

The ability to maintain religious faith is important in two ways. First, as previously noted, religious beliefs can provide comfort and hope in the face of severe circumstances. Second, another sort of religious belief, theodicy, may also be important for persons with cancer. In essence, a religious theodicy provides a framework through which individuals can find meaning and understanding in suffering (Berger, 1967; Weber, 1946). By drawing on religious theodicies, cancer patients can better come to terms with their disease and, in so doing, find comfort.

The second way in which participation in church activities could be beneficial for those with cancer is that the
church provides an avenue through which patients can find others to pray with and for them. Although Sodestrom and Martinson (1987) cited prayer as the most common coping strategy of their sample of cancer patients, the next two most cited strategies were praying with others and having others pray on their behalf. In their study of breast cancer patients, Johnson and Spilka (1991) showed the importance of interaction with the clergy and intercessory prayer for the well-being of the women. They argued that the prayers of others show concern and provide the women with a greater sense of self-worth. Moreover, the prayers of others may also reinforce the belief that God is in control of the situation.

Third, interaction with a religious community may also be an important avenue through which patients receive instrumental and emotional support. Researchers have shown that social support is an important resource for helping people cope with stressful situations (Cohen & Wills, 1985; Lin & Ensel, 1989). Church members may visit patients in the hospital or in their homes to provide companionship, bring needed items, or help perform necessary chores. Similarly, Ellison and George (1994) showed that persons active in a religious group had higher levels of non-kin network ties, received support, and quality of support. Bradley (1995) found similar results using a nationally representative sample. In a recent article using data collected from a sample of elderly persons, Idler and Kasl (1997) showed that respondents who attend church regularly report having more close friends and more contact with friends and kin.

The Importance of Religion for African Americans

Researchers have documented the importance of splitting samples according to race when analyzing the relationship between religion and well-being (Ellison, 1995; Ferraro & Koch, 1994; Musick, 1996; St. George & McNamara, 1984; Thomas & Holmes, 1992). As such, in these analyses, we split the sample by race into groups of Blacks and Whites. There are two reasons often cited for splitting samples according to race (see a review by Chatters & Taylor, 1994). First, several studies have attested that African Americans report higher rates of public religious participation than do Whites (Roof & McKinney, 1987; Levin, Taylor, & Chatters, 1994; Taylor, Chatters, Jayakody, & Levin, 1996) and are more likely to report that religion is important to them (Moore, 1991; Taylor et al., 1996). For southern Blacks, Ellison and Sherkat (1995) have termed the church a “semi-involuntary institution” given such high rates of participation in that segment of the population.

Second, and perhaps more importantly, researchers have argued that the effect of religious activity on health should be stronger for Blacks than for Whites. Several reasons are posited to account for this relationship. First, because Blacks face greater discrimination and barriers to institutions (e.g., health care) and status (e.g., high-paying employment) that are beneficial for health and well-being, they must find alternate avenues to success and well-being (Hummer, 1996; Levin, 1984; Mirowsky & Ross, 1980). One such alternate avenue for Black Americans is the church. A number of authors have pointed to the importance of the church in the history of Black America; it has served as a source of community empowerment (Lincoln & Mamiya, 1990; Moore, 1991) and of help to those in the congregation and community (Caldwell, Greene, & Billingsley, 1994; Chang, Williams, Griffith, & Young, 1994; Eng & Hatch 1992; Taylor & Chatters, 1986, 1988; Williams, Griffith, Young, Collins, & Dodson, in press), and as a facilitator of social and health interventions for parishioners (Levin, 1984, 1986; Williams et al., in press). In a study that compared Black and White church congregations, Chaves and Higgins (1992) showed that Black congregations are more active on civil rights issues and in helping community members who face economic hardship.

Another possible explanation for the stronger relationship between religion and health for Blacks is the actual activity that takes place within religious settings in Black churches. Gilkes (1980) argued that several activities that take place in those churches are unique and can be modified to have therapeutic value. The practices he mentions are speaking and singing about suffering, discussing problems presented by persecutors, providing a safe place to “act out,” and giving validation to the experiences of fellow congregants. Griffith, English, and Mayfield (1980) provided evidence for the therapeutic value of Black churches through their ethnographic study of Wednesday night prayer meetings in a Black church. There is ample warrant to believe that church and religious activities serve a special place in the lives of African Americans. For that reason, religious activity should have a greater effect for them than for Whites.

Limitations of Earlier Research

Previous research on religious behavior among cancer patients must be commended for its depth and ability to elicit sensitive information from a very ill population. However, the scope of these studies is also somewhat of a weakness. That is, to obtain the information they did, most of the researchers relied on small samples of patients in advanced stages of the disease (e.g., Yates, Chalmer, St. James, Follansbee, & McKeganey, 1981). Further, some of the studies, (e.g., Johnson & Spilka, 1991; Mickley & Soeken, 1993) relied only upon women for their research. Although the studies have provided important insights into the role of religion for those with cancer, the results are hard to generalize at the community level. Further, because the sample sizes have been small, previous researchers were unable to make distinctions based on the importance of religion in different social contexts. Using a large sample of community-dwelling elderly adults, we reexamine the relationship between religion and cancer on a broader scale, incorporating the findings of previous research and drawing on the previous theoretical discussion.

Hypotheses

In this article we address four primary questions. First, do respondents diagnosed with cancer report more religious activity than their counterparts without the disease? Second, do respondents with cancer benefit in terms of depressive symptomatology from their religious activity? Third, are the effects of religious activity on depressive symptomatology greater for the portion of the sample with can-
cancer compared to those without the disease? And finally, given prior research and theory on race, religion, and well-being, do the hypothesized relationships differ between Blacks and Whites? Based on these questions we offer the following hypotheses:

Hypothesis 1: Both Blacks and Whites with cancer will report more frequent religious activity across time compared to those without the disease.

Hypothesis 2: Among Blacks and Whites with cancer, more frequent religious activity predicts decreases in depressive symptomatology.

Hypothesis 3: The effect of religious activity on changes in depressive symptomatology will be greater for Blacks and Whites with cancer than for those without the disease.

Hypothesis 4: The relationship between religious activity and depressive symptomatology will be greater for Blacks than for Whites.

METHODS

Sample

Data for this study come from the Duke Established Populations for Epidemiologic Studies of the Elderly (EPESE). In addition to the North Carolina site, where these data were collected, three other sites make up the research program initiated by the National Institute on Aging: the University of Iowa, Yale University, and Harvard University. For the North Carolina sample, the data were collected from five contiguous counties in northern central North Carolina, four rural and one urban. The entire sample size is 4,162 persons; approximately half come from the urban county and the other half are dispersed between the four rural counties. Detailed explanations of the sample and sampling procedure can be found elsewhere (Cornoni-Huntley et al., 1990).

One of the primary missions of the Duke EPESE is the examination of differences between Blacks and Whites in health-related variables. Blacks were oversampled with the intent that 55% of the survey population be Black. Sample weights were then developed to adjust sample distributions for probability of selection within households of varying sizes, to adjust for differential nonresponse, and to match the demographic characteristics of the five-county area, as estimated by the U.S. Bureau of Census. These weights are especially important in that they redistributed responses according to the racial distribution of the population, which is 36% Black and 64% non-Black. The fact that the weighted data are based on a stratified oversample, however, renders estimates for Blacks more precise than they would otherwise be. Results presented in this article are based on weighted data in order to permit population estimates. Sample and subgroup sizes, however, are reported in unweighted form.

The 4,162 persons interviewed were drawn from a total eligible sample of 5,223, yielding an 80% response rate. The first and fourth waves of data were collected in 1986 and 1989 through personal interviews. Two telephone waves of data were collected in 1987 and 1988; however, we use data only from the first and fourth waves. The sample size in our analyses is 3,007, down from 4,162 due to attrition by the fourth wave. We use weighted data to correct for the nonresponse bias due to attrition. Table 1 displays mean levels of the variables used in the analyses, by race.

Measurement

Depressive symptomatology.—Depression was measured using four subsets of the 20-item CES-D scale: somatic-retarded activity (7 items, e.g., “I did not feel like eating; my appetite was poor,” “I could not get going”; α = .71), depressed affect (5 items, e.g., “I felt depressed,” “I felt lonely”; α = .72), positive affect (3 items: “I felt hopeful about the future,” “I was happy,” “I enjoyed life”; α = .53), and interpersonal relations (2 items: “People were unfriendly,” “I felt that people disliked me”; α = .67). For each item, respondents were asked whether they had felt that way during the past week; each subscale was constructed by summing the number of affirmative responses. We examined these four different dimensions of depression because religious behavior may have differential effects depending upon the facet of depression being studied. Earlier research and our own factor analyses (not shown) showed that the four dimensions of depression listed here are the primary factors that make up the scale (Ensel, 1986; Radloff, 1977). Higher scores for all the scales indicate worse outcomes, but for positive affect higher scores indicate better outcomes.

Cancer.—During each of the four waves, respondents were asked whether they had been told by a doctor that they had cancer.

### Table 1. Ranges and Means of Baseline Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Blacks (n = 1636)</th>
<th>Whites (n = 1371)</th>
<th>Probability</th>
<th>Diff = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sociodemographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0-1</td>
<td>67.5%</td>
<td>65.9%</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>64-100</td>
<td>72.75</td>
<td>72.42</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>0-17</td>
<td>7.51</td>
<td>10.08</td>
<td>***</td>
</tr>
<tr>
<td>Married</td>
<td>0-1</td>
<td>35.8%</td>
<td>45.2%</td>
<td>***</td>
</tr>
<tr>
<td><strong>Social Ties</strong></td>
<td></td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Social interaction</td>
<td>0-38</td>
<td>13.86</td>
<td>14.82</td>
<td>***</td>
</tr>
<tr>
<td>Interaction satisfaction</td>
<td>0-2</td>
<td>1.17</td>
<td>1.04</td>
<td>***</td>
</tr>
<tr>
<td><strong>Religious Behavior</strong></td>
<td></td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Service attendance</td>
<td>1-6</td>
<td>4.36</td>
<td>3.09</td>
<td>***</td>
</tr>
<tr>
<td>Religious devotion</td>
<td>1-5</td>
<td>3.83</td>
<td>3.81</td>
<td></td>
</tr>
<tr>
<td>Religious media</td>
<td>1-6</td>
<td>5.12</td>
<td>4.16</td>
<td>***</td>
</tr>
<tr>
<td><strong>Mental Health</strong></td>
<td></td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Somatic-retarded activity</td>
<td>0-7</td>
<td>1.45</td>
<td>1.29</td>
<td>**</td>
</tr>
<tr>
<td>Depressed affect</td>
<td>0-5</td>
<td>.99</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td>Positive affect</td>
<td>0-3</td>
<td>2.59</td>
<td>2.70</td>
<td>***</td>
</tr>
<tr>
<td>Interpersonal relations</td>
<td>0-2</td>
<td>.16</td>
<td>.08</td>
<td>***</td>
</tr>
<tr>
<td><strong>Physical Health</strong></td>
<td></td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Functional impairment</td>
<td>0-3</td>
<td>.83</td>
<td>.71</td>
<td>**</td>
</tr>
<tr>
<td>Has cancer</td>
<td>0-1</td>
<td>6.6%</td>
<td>10.7%</td>
<td>***</td>
</tr>
<tr>
<td>Has other illness</td>
<td>0-1</td>
<td>73.0%</td>
<td>61.1%</td>
<td>***</td>
</tr>
</tbody>
</table>

**p < .01; ***p < .001**
they had cancer. If respondents reported having cancer, or were suspected of having cancer, they were then asked what type of cancer they had. The types of cancer included in the survey were lung, breast, colon, lymphoma, leukemia, melanoma, other skin cancer, and all other cancers. If respondents reported having cancer they were coded one and all others were coded zero. We also coded respondents who reported having skin cancer other than melanoma in the zero category in order to prevent the inclusion of persons with non-life-threatening illnesses. Because the number of respondents who had cancer only was low (73 in the first wave), we chose to include in this group those respondents who reported having cancer and another illness. However, since we made comparisons with a "pure" other illness group, any differences we observed should have been due either to the cancer itself or some combination of cancer and other illness. Regardless of which of these options is correct, the driving force behind the difference will be cancer. There was also the possibility of contamination in that respondents may have been diagnosed with cancer or another illness between the first and second in-person waves. To ensure the purity of the groups, we eliminated from the analyses all those respondents who were diagnosed with cancer between these two waves (n = 92). This made us certain that our comparisons were between respondents diagnosed with cancer and all others without cancer. Because we were not particularly interested in the other illness group, we did not eliminate those respondents who contracted another illness between the waves. The sample sizes for the three illness groups were cancer, 251; other illness, 1,770; and no illness, 894.

Other illness.—To test whether the relationship between cancer, religion, and mental health is actually a function of having cancer as opposed to some other chronic illness, we included in our analyses an indicator of other illnesses. For this measure, if respondents reported having high blood pressure, diabetes, a heart attack, or stroke, but did not report having cancer, they were coded one and others were coded zero. Further, a no illness group was created for which those with no illness were coded one and others zero.

Functional impairment.—In order to determine whether the relationship between religion and cancer might be due to physical functioning, we included a measure of impairment in our analyses: the total Rosow-Breslau (1966) scale of activity limitation. The scale consists of three items that measure whether the respondent can (a) do heavy work, (b) walk up a flight of stairs, and (c) walk a half mile. Variables were coded zero if respondents could do the activity and one if they could not; higher scores indicate greater impairment.

Service attendance.—Respondents were asked, “About how often do you go to religious meetings or services?” The six response categories were (a) rarely or never, (b) a few times a month, (c) once a week, (d) two or more times a week, and (e) daily.

Religious devotion.—Respondents were asked, “How often do you spend time in private religious activities, such as prayer, meditation, or Bible study?” The five response categories used were (a) rarely or never, (b) a few times a month, (c) once a week, (d) two or more times a week, and (e) daily.

Social interaction.—Because some of the benefits received from church attendance are due to social resources, we included social relationship measures. The first such scale consisted of five items measuring amounts of social interaction. The five items were number of (a) children, (b) other relatives, and (c) friends respondents see during a month; (d) how often respondents talked on the phone in the past week; and (e) whether respondents were members of a church, club, or other organization. For the first three items, scores ranged from zero to ten or more and for the phone item scores ranged from zero to seven or more. The scale was created by summing the number scores for each variable.

Social interaction satisfaction (a = .43; r = .31).—This two-item scale measures respondents’ satisfaction with the amount of time they see friends and relatives. Responses include wanting to see others more often, the same amount, or less often; higher scores indicate greater satisfaction. The measures of social interaction and social interaction satisfaction were taken from the Duke Social Support Inventory (Landerman, 1994) and have been used in previous studies of religion and well-being (e.g., Musick, 1996).

Sociodemographics.—We controlled for several background characteristics: sex (0 = male, 1 = female), age (in years), education (years of schooling), and marital status (0 = not married, 1 = married).

Analytical Strategy

Because we had two waves of data, we used conditional change analysis (Finkel, 1995). That is, the dependent variable in the models was the Wave 2 measure of the outcome, whereas the independent variables, including the baseline measure of the dependent variable, were measured in Wave 1. Regression coefficients indicated a change in the outcome across waves. Using this method helps to disentangle difficulties with causal ordering.

We employed two types of regression analysis given the nature of the outcome variables. Because the religious activity items were measured using an ordinal scale, we used polytomous logistic regression, also called ordered logit modeling, to estimate effects. However, the depressive symptomatology outcomes were measured using an interval scale, and as such, we were able to use ordinary least squares regression to estimate those effects.

To make comparisons between the cancer and noncancer subsamples, we computed these analyses for two comparison groups, those with a noncancer chronic illness and those reporting no chronic illness. Using these coefficients,
we performed a two-tailed $t$ test (Clogg & Eliason, 1986) to determine whether there were significant differences in the effects of religious activity across the illness groups. A two-tailed $t$ test was also used to determine whether there were differences in effects between the two racial subsamples.

RESULTS

Analysis of Religious Activity

Table 2 displays the results of the analysis concerning cancer and religious activity. Because the omitted category in these models is having cancer, a positive coefficient indicates that respondents in the cancer group engage in less religious activity than the relevant comparison group. Note also that these estimates are adjusted for sex, age, education, marital status, and functional ability. For the Wave 1 religious activity outcomes, there is no difference in levels of religious activity between the cancer and noncancer groups for either race. However, estimates for the second in-person wave outcomes are somewhat different. Among Blacks, respondents with cancer are more likely to report an increase in religious devotion than both the other illness and no illness groups; however, this difference is only significant for the other illness group. In terms of religious media, Blacks with cancer are also more likely to report an increase in activity. In contrast, Blacks with cancer are less likely to report increases in service attendance compared to the other illness or no illness groups. This overall pattern for the White subsample is similar; however, significant differences between illness groups occur only for changes in religious media.

Comparing effects between races, we find significant differences. First, Blacks and Whites differ in the effect of cancer versus other illness on religious devotion in the panel analyses ($t = 2.79, p < .01$). Second, in the panel analyses on service attendance, the effect of cancer versus other illness and no illness differs between Blacks and Whites (other illness: $t = 3.33, p < .001$; no illness: $t = 3.89, p < .001$). In all three situations, the results support our expectations. The relationship between religious activity and cancer is stronger for Blacks than for Whites.

Table 3 shows the results of the analyses linking religious activity to depressive symptomatology among respondents with cancer. For each group of depressive symptoms the table lists two columns. The first shows the coefficient for the correlation between that religious activity and the second wave symptom group, and the second displays the religious activity regression coefficients for two regression models. The first model includes all of the religious activity measures as well as the first wave outcome. The second model includes the aforementioned variables plus other controls, thereby providing the most rigorous test of the hypothesis.

In the Black subsample, only service attendance has beneficial effects on depressive symptomatology such that respondents who attend more often report fewer somatic-retarded symptoms, less depressed affect, and more positive affect. However, service attendance is significantly related to symptomatology outcomes in the most rigorous test (full multivariate regression model) only for positive affect.

In contrast to Blacks, Whites show no pattern of association between religious activity and depressive symptomatology. To determine whether the observed difference in effects for service attendance between Whites and Blacks is significant, we performed a $t$ test on the differences in coefficients. The results of these calculations indicate that only the service attendance coefficients for positive affect are significantly different ($t = 2.30; p < .05$).

The final part of our analysis focuses on whether the effects we find for religious activity among respondents with cancer are unique to that group. Due to the small number of significant findings in this portion of the analysis, we did not display these results in tabular form; they are, however, available in that form upon request from the authors. The analyses show that in the African American subsample, the

Table 2. Estimated Net Effects of Health Conditions on Religious Activity (Polytomous Logistic Regression Estimates)*

<table>
<thead>
<tr>
<th>Religious Devotion</th>
<th>Religious Media</th>
<th>Service Attendance</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Odds-ratio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$b$</td>
<td>$b$</td>
</tr>
<tr>
<td>Black Subsample</td>
<td></td>
<td></td>
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<tr>
<td>Wave 1 Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other illness</td>
<td>-.235</td>
<td>-.107</td>
</tr>
<tr>
<td>No illness</td>
<td>-.196</td>
<td>-.111</td>
</tr>
<tr>
<td>Wave 2 Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other illness</td>
<td>-.247</td>
<td>-.195</td>
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<tr>
<td>No illness</td>
<td>-.167</td>
<td>-.284</td>
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<tr>
<td>White Subsample</td>
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<tr>
<td>Wave 1 Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other illness</td>
<td>-.325</td>
<td>.135</td>
</tr>
<tr>
<td>No illness</td>
<td>-.387</td>
<td>.030</td>
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<tr>
<td>Wave 2 Outcomes</td>
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<td></td>
</tr>
<tr>
<td>Other illness</td>
<td>.070</td>
<td>-.129</td>
</tr>
<tr>
<td>No illness</td>
<td>-.064</td>
<td>.049</td>
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</tbody>
</table>

*Effects are adjusted for sex, age, education, marital status, and functional limitations. In the Wave 2 outcomes models, estimates are also adjusted for the Wave 1 measure of the dependent variable.

*p < .05; **p < .01; ***p < .001.
discuss less service attendance over time compared to the illness. Among Blacks, we found that having cancer predicts greater religious activity over time compared to having another or no illness. In most cases, having cancer predicts greater religious activity than respondents without cancer. Although we found no significant differences in the cross-sectional analyses, we found that the cancer and noncancer groups differ in levels of change in religious activity across the waves. In most cases, having cancer predicts greater religious activity over time compared to having another or no illness. Among Blacks, we found that having cancer predicts less service attendance over time compared to the other illness groups.

The second question we examined was whether religious activity decreased depressive symptomatology among respondents with cancer. We found such an effect only for service attendance among Blacks; more frequent service attendance is related to higher levels of positive affect. Service attendance is also related to lower levels of depressed affect among Blacks, but this result is not significant in the final model.

Earlier research on religion and cancer has tended to focus on the importance of private religious activity. This focus was sometimes a necessity given that samples were institutionalized and could not easily participate in public religious activities. However, their findings coincide with ours because they found that visits by clergy and intercessory prayer (e.g., Johnson & Spilka, 1991) were important to maintaining hope and optimism. As we mentioned previously, one possible mechanism underlying our findings and those of others has been referred to as “social cohesion” (Idler, 1987). According to this perspective, religion best helps individuals by providing access to others who may provide support, both instrumental and emotional, in times of need. For terminally ill patients, such support would necessarily come through visits by clergy and other parishioners. However, for persons with cancer in the community, such interaction may be more dependent upon individuals’ active participation in the religious group.

We also addressed the question of whether the relationship between religion and depression is unique to the cancer group. Because earlier researchers relied on samples of...
cancer patients, they were unable to determine whether the effects they observed were limited to those patients or whether they were true of others as well. Interestingly, we found that the positive effects of service attendance among Blacks is unique to the cancer group. Moreover, the analyses showed that having another chronic illness does not tend to moderate the effect of religious activity on depressive symptomatology. Cancer may be associated with a unique set of circumstances, in terms of uncontrollability, stress, discomfort, and uncertainty, such that public religious activity will have its greatest effects for those with the disease.

Finally, the fact that the effect of service attendance is stronger among Blacks should not be surprising given earlier research on religion and life satisfaction that showed similar trends (St. George & McNamara, 1984; Thomas & Holmes, 1992). Other studies that focused solely on African Americans have shown similarly strong results for that group (Levin, Chatters, & Taylor, 1995). The “support bank” concept (Antonucci, 1985) may be partially responsible for our finding that the effects of service attendance on positive affect are strongest among Blacks. That is, the strong historical and contemporary presence of the Black church may instill in parishioners the idea that if they do the work of the church while able (e.g., attend services, visit and help those in need), the church will respond when they are in need. Taylor and Chatters (1988) found that the church is an important source of informal support for many African Americans. For elderly southern Blacks, the church may be one of few resources that they can expect help from when their need is greatest. For those cancer patients facing considerable uncertainty regarding the disease, such an expectation may be very beneficial.

Limitations

Given the previous evidence on the ties between mental well-being and religion, it is interesting that we do not find stronger effects in this study. This lack of findings may be due to the limitations of our data. First, as we have indicated, earlier studies of this sort focused on very ill populations. In many cases the sample consisted of terminal cancer patients, and as such, the investigators were certain about what stage of the disease they were covering. In contrast, our measures of cancer do not distinguish those who are terminal from those who are in remission or currently in therapy. Therefore, to some degree, our cancer group may be too heterogeneous to find all the anticipated effects.

Second, a lack of religious heterogeneity in our sample may affect the expected relationships. As we have noted, our data were drawn from a sample of elderly adults living in the southeastern portion of the United States. That region of the country is largely Protestant and has high overall levels of religious activity (Roof & McKinney, 1987), especially among Blacks (Ellison & Sherkat, 1995). This lack of variation in the measures of religious activity might have attenuated our findings.

Implications

Given our findings and the limitations of our data, what are the possible avenues for future research? First, future research should address religious activity, cancer, and mental health using a different, more religiously heterogeneous sample. The sample should be community-based and longitudinal in nature to improve upon our knowledge of these processes as they occur outside of institutional settings. Such research should also be attuned to the fine-grained nature of religious activity; that is, measures of public and private religious activity should be much more specific. For instance, if future studies wished to explore the possibility of a support bank located in the church, then measures should include whether the respondent visits others in need or volunteers for church group activities. In contrast, if the researcher expects that public religious activity will be important because members in need receive support from other congregants, then help received specifically from church members should be measured.

Moreover, future measures of religion should also try to tap the function of religious activity for individuals. That is, not only should researchers try to measure what people do with regard to religion, but also what purpose that serves in their lives. In their work on social support in the church, Taylor and Chatters (1986) have indicated what types of support are received from church members. Other studies (e.g., Griffith et al., 1980; Levin, 1986) have examined the specific role of the pastor and church group in the maintenance of individual well-being. We have noted also that religion can provide hope or freedom from death anxiety for those with severe illness (Koenig, 1994). Future studies should determine whether indeed the hope, optimism, or freedom from worry that is provided by religious teachings or fellowship with other church members mediate any associations we find between religion and well-being.

Third, future research should begin to take into account the moderating effect of stress and other social factors on the relationship between religion and mental health. If cancer can be perceived of as a stress (net of its physical effects), then we have shown that a significant stressor can substantially moderate the effect of religious activity on depressive symptomatology. Indeed, if religion’s true effect is to provide comfort, either in terms of support or beliefs, then we should expect that religion will be most powerful for those in stressful circumstances (Glock, Ringer, and Babble, 1967). Several authors have provided evidence to support this conclusion (Idler, 1995; Idler & Kasl, 1992; Maton, 1989; Music, 1996; Williams et al., 1991). Further, by splitting the sample by race and finding significant effects mostly for Blacks, we have underscored the importance of the relationship between religion and health. Other social contexts, like socioeconomic status and gender, could affect this relationship in similar ways and should be addressed in future research.

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