

Religious Attendance, Health Maintenance Beliefs, and Mammography Utilization: Findings from a Nationwide Survey of Presbyterian Women

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Preventive health services, such as mammography, play an increasingly important role in maintaining women's health. Social factors, such as religion, may influence utilization rates by expanding access, offering information, and increasing motivation. The current study examines the relationship between religious involvement, religious beliefs, and mammography usage in a nationally representative sample of Presbyterian women (N = 1,070). We use multivariate logistic regression models to estimate the influence of religious service attendance and two health-related religious beliefs on self-reported mammography use. The findings show that religious attendance is significantly associated with mammogram use. Women who attend services nearly every week are almost twice as likely to use mammograms compared to women who attend services less frequently or never. Furthermore, the belief that spiritual health is related to physical health is also associated with the use of mammograms.

INTRODUCTION

The connection between religion and health has received a growing amount of empirical support in the past several decades. Studies generally find a positive association between religion and health, including physical and mental health outcomes and mortality risk (for review, see Koenig, McCullough, and Larson 2001). Explanations for these relationships usually rely heavily upon differences in health behaviors but, until recently, the potential role of preventive health care utilization had been a neglected area of research. Despite recent studies in this area, conflicting findings and an absence of studies examining the role of beliefs preclude a clear understanding of how religion may influence the use of preventive health services. Screening for breast cancer is an especially important service to study, given the growing number of women affected by the disease and the considerable benefits that can be derived from early detection (Jacobellis and Cutter 2002; Makuc, Breen, and Freid 1999). For example, early detection and follow-up could prevent 15–30 percent of breast cancer deaths in women over 40 (CDC 2002). However, despite these benefits, only one-third of women over 40 years of age have had a mammogram in the past year (Barr et al. 2001).

Religion can influence mammography use and other types of health services through numerous pathways, such as greater access to services and health information, and increased motivation to maintain a healthy lifestyle. These factors may help to explain the religious variation found in a wide range of general health care services, including mental health services, primary care, dental care, and hospitalization (for review, see Koenig, McCullough, and Larson 2001; Schiller and Levin 1988). Furthermore, religious variation may be even more pronounced in preventive

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services because, unlike general health care, which is mainly determined by an individual's need for such services, usage levels for preventive health care are more susceptible to other factors, particularly social and psychological ones.

In support of this, several recent studies provide evidence of a positive relationship between religion and use of preventive health care. One of the earliest known studies on this topic examined a sample of women in a rural county in Maryland and found that those who attended church regularly were more likely to be screened for cervical cancer than women who never attended religious services (Naguib, Geiser, and Comstock 1968). Similarly, a recent study using a nationally representative sample of preretirement-age adults found that attendance was positively associated with the use of cholesterol screenings (Benjamins 2005). In contrast, two studies found no effect of attendance on breast cancer screening rates using a church-based sample of Los Angeles women (Fox et al. 1998a, 1998b) and a community sample from a low-income, African-American neighborhood (Felix Aaron, Levine, and Burstin 2003).

Other studies have examined the influence of religious salience and denomination on preventive service use. Using a national sample of adults aged 70 years and older, Benjamins and Brown (2003) found that individuals who report high levels of religious salience and those claiming membership in certain religious denominations are more likely to use a wide range of preventive services. Many earlier studies in this area have focused on denominational differences in women's preventive service use. Most findings show that use of breast and cervical cancer screening differs by religious affiliation but, again, findings have been inconsistent (Miller, Norcross, and Bass 1980; Miller and Champion 1993; Murray and McMillan 1993; Naguib, Geiser, and Comstock 1968; Yi 1994, 1998).

To our knowledge, only one previous study has investigated the role of religious beliefs on preventive health care use (Holt, Lukwago, and Kreuter 2003). This study, which used a nonrepresentative sample of African-American women in St. Louis, found that individuals who hold spiritual beliefs but who are not involved in religious activities were moderately more likely to report mammography utilization than those who held few spiritual beliefs and were not religiously active. Interestingly, women who held spiritual beliefs and were religiously active did not have higher levels of mammogram use (Holt, Lukwago, and Kreuter 2003). Due to conflicting findings in the general area of religion and preventive service use, as well as a paucity of evidence regarding health-related religious beliefs, more work is clearly needed.

To address these gaps in the literature, the current study examines two questions: (1) Does church attendance influence mammogram utilization? and (2) Do aspects of religious ideology that are related to physical health status and health maintenance also play a role? The present study is also unique because it uses a nationally representative sample of Presbyterian (PCUSA) women. Previous research has shown that Protestants, mainline Protestants in particular, use more preventive services than members of other denominations (Benjamins 2005; Benjamins and Brown 2003). These findings have fueled a growing interest in the factors that may be driving the observed relationship between religious affiliation and preventive service utilization. Thus, the current study examines the relationship between religious attendance, health-related religious beliefs, and mammogram use within a sample of Presbyterian women.

Theoretical Framework

Religious Service Attendance

In the current study, we use a measure of religious service attendance to represent an individual's involvement with a religious organization. Religious attendance may influence preventive service use in several ways. For example, involvement with a religious organization provides individuals with numerous opportunities for social contact, such as informal meetings, women's groups, or educational groups. These contacts can result in larger social networks and additional

sources of social support (both informal and formal) for members of religious organizations (Ellison and George 1994). In turn, more social resources often lead to better health outcomes (House, Umberson, and Landis 1988). In addition, the networks formed by churchgoers have distinctive properties that may make them particularly influential (Krause et al. 2001; Wuthnow 1994). These properties include the following characteristics: (a) church-based networks may consist of individuals with common interests and values; (b) members interact on a regular basis; (c) members may come from similar backgrounds (class, region, etc.); and (d) they may even have broadly similar psychosocial and personality orientations (e.g., proactive, disciplined, family oriented, etc.). Thus, having larger social networks is not the only benefit that regular churchgoers may enjoy; outcomes (such as preventive service use) may also be influenced by the specific kinds of social resources available to religiously active individuals.

Attendance at religious services may also have more direct influences on preventive health care utilization. For example, some churches offer activities or information about health-related topics that may lead (directly or indirectly) to a greater use of health care services by members exposed to these resources. Many congregations have parish nurse programs in which members who are in health professions play certain roles, such as health educator, health counselor, referral advisor, health advocate, developer of support groups, or volunteer coordinator (Parish Nursing Website 2003). Some religious congregations participate in other types of related programs, such as sponsoring health education campaigns and providing members with transportation to health care providers (e.g., Davis et al. 1994; Erwin et al. 1999; Fox et al 1998b; Lasater et al. 1986; Voorhees et al. 1996).

Religious Beliefs

Aspects of religious ideology pertaining to health behaviors may also influence preventive service utilization. The current study uses two unique measures of religious ideology that may affect a woman's likelihood of using mammograms. Specifically, these are beliefs that (1) maintaining one's health is a Christian responsibility, and (2) spiritual health is supportive of physical health. We expect women who endorse these beliefs to have higher levels of mammogram utilization than women who do not hold these beliefs. These beliefs have biblical roots and represent an important part of the Protestant faith. The belief in a Christian duty to maintain one's health may come from the biblical teaching that Christians' bodies are temples of God: "Know you not that your body is the temple of the Holy Spirit, which you have of God, and you are not your own? For you are bought with a price: therefore glorify God in your body" (I Corinthians 6:19–20). In addition, many Christians may feel obligated to maintain their health because physical well-being is a necessary precondition for ministry and service to others, evangelism, charity, civic engagement, and involvement with one's family (Ott 1991). Christians may perceive the connection between spiritual and physical health to be rooted in the Bible as well. For example, one proverb states "Trust in the Lord with all your heart and lean not on your own understanding. . . This will bring health to your body and nourishment to your bones" (Proverbs 3:5, 8). This theme of spiritual health leading to physical health recurs throughout the Bible, where God rewards faithfulness and spiritual discipline with physical health.

Individuals who believe they have a responsibility (to God) to preserve their health may be particularly likely to use preventive services, and belief in a connection between spiritual and physical health may also affect mammogram use rates for religious women. Moreover, although other researchers have theorized that a sense of duty to a higher being and a more holistic view of health could help to explain the better health behaviors observed among more religious individuals, the possible role of these beliefs in mediating the relationship between religious participation (e.g., attendance) and preventive service utilization has never been tested empirically.

The preceding discussion leads us to suggest four hypotheses:

- H1: Women who attend religious services regularly will have higher rates of mammogram utilization than those who attend less frequently.
- H2: Women who believe that maintaining one's health is a Christian responsibility will have higher rates of mammogram utilization.
- H3: Women who believe that spiritual health promotes physical health will have higher rates of mammogram utilization.
- H4: The positive effect of religious attendance on mammogram utilization will, in part, be mediated by religiously-based health beliefs.

DATA AND METHODS

Data

Data for this study come from the 1991 Presbyterian Panel Study (for a complete description of the survey and methodology, see *The Presbyterian Panel 1991–1993 Background Report*, 1990). This data set is representative of individuals affiliated with the Presbyterian Church in the United States. The survey was designed to create a broad profile of Presbyterians and includes information on religious beliefs and practices, socioeconomic traits, and demographic characteristics. Information was collected for members, elders, pastors, and specialized clergy of this denomination.¹ In addition to collecting background information for respondents, a survey focusing on health beliefs, health practices, and lifestyle characteristics was administered between September and November 1991.

Since there is no known exhaustive list of active members of all Presbyterian Church (United States) congregations, a two-stage sampling process was implemented in order to obtain a representative sample of PCUSA members. First, proportional stratified sampling was used to obtain a sample of congregations affiliated with the Presbyterian Church (United States). Second, contact information for a random sample of members drawn from each congregation was sent to the panel administrators. The sample of elders was drawn from a list of elders currently on session maintained by the Office of the General Assembly. The list was divided according to synods, and a proportional random sample was taken in each synod. The response rate for members was 65 percent, and the rate for elders was 73 percent. The data were originally collected by the Congregational Ministries Division, Presbyterian Church (United States) and were made available by the American Religion Data Archive. Since members of the clergy were significantly different from lay people on almost all predictor variables, this highly religious group was not included in the present analyses.² Analyses were performed on a sample of 1,070 women (age range: 18–92 years).³

Dependent Variable: Mammogram Utilization

A dichotomous mammogram utilization measure was created from a variable that asked all female respondents how long ago they had their last breast X-ray (mammogram). The measure differentiates between respondents who reported having a mammogram within the past two years and those who did not.⁴

Independent Variables: Attendance at Religious Services

The church attendance measure employed here is a self-report of attendance at Sunday worship services. To be sure, survey researchers have questioned the reliability and validity of self-reported church attendance. Although some researchers have attributed this discrepancy to

social desirability bias (see, for example, Hadaway, Marler, and Chaves 1993), others believe that the magnitude of overreporting is modest (see Hout and Greeley 1998) and that individuals may overstate their attendance primarily as a reflection of their overall religious commitment (Hadaway, Marler, and Chaves 1998). This ongoing debate notwithstanding, attendance at religious services is often used as a general measure of a person's religious involvement and has been a strong predictor of a variety of physical health outcomes (Koenig, McCullough, and Larson 2001).

Since preliminary analyses suggested a nonlinear effect of attendance on mammography use, we employed a set of three dummy variables to measure church attendance. The categories are as follows: attending services every week; attending nearly every week; and attending two or three times per month or less (reference category).

Religiously-Based Health Maintenance Beliefs

To assess the role of health-related religious beliefs, two variables are used to indicate the respondent's level of agreement or disagreement with statements regarding religion and health. First, respondents were presented with the following statement: "Trying to maintain one's health is a Christian responsibility." The three possible responses are strongly agree (high), agree (medium), and neutral or disagree (low; reference category). The same coding criteria were used to create three dummy variables for the spiritual health measure, indicating high, medium, and low levels of agreement with the statement: "Spiritual health is supportive of physical health." Again, the lowest level is the reference category.

Control Variables

In accordance with evidence from the literature concerning determinants of preventive service use, measures of several demographic and socioeconomic characteristics are also included in the models. Specifically, previous research shows that mammogram utilization varies by age, race, marital status, education, and number of children (Barr et al. 2001; Fox et al. 1998a; Klassen et al. 2002). Thus, these measures, as well as income, are all included in the models.⁵

To assess age differences more accurately, we use dummy variables representing 10-year intervals for women over 40 (for whom annual mammography is recommended) compared to those under 40 (the reference group). This results in the following five age categories: under 40; 40–49; 50–59; 60–69; and 70 and over. We control for respondent's race/ethnicity using a dummy variable with "white" as the reference category. Further distinctions were not made because of the small number of respondents in each of the other race/ethnic groups (e.g., only 1.6 percent of the sample was African American). Dummy variables are also used to indicate the respondent's marital status (married = reference) and whether the respondent has ever had a child (no children = reference). Level of education is measured by three dummy variables representing some graduate work or a graduate degree, some college or a college degree (reference), or high school diploma or less. We also control for income with three dummy variables for the following income categories: \$50,000 or more; \$25,000–\$49,999 (reference); and less than \$25,000. The valid sample mean was imputed for those cases for which income data were originally missing (5 percent of the data); a flag variable for the substitution was included and was not significant in the analyses.

Statistical Methods

A series of five multivariate logistic regression models provides estimates of the associations between church attendance, religious beliefs, and mammogram utilization. The method of progressive adjustment is used to determine the effect of each of the independent variables independently and with the controls. In the first two models, attendance and belief measures are

entered separately to show the bivariate relationships with mammogram usage. The next two models show the relationships between attendance, the beliefs, and mammogram usage after adjustment for the demographic and socioeconomic controls. These models test Hypotheses 1–3. Finally, estimates are shown from the full model, which includes all of the religion and control variables. This model tests the mediation proposed in Hypothesis 4. Specifically, changes in the magnitude and significance of the coefficients (between Model 3 and Model 5) are assessed to determine if mediation occurred. For all analyses, we present exponentiated logistic regression coefficients (odds ratios). All models include all 1,070 cases.

RESULTS

We briefly summarize descriptive statistics for the sample here. Three-quarters of the women reported having a mammogram in the past two years, which is substantially higher than national utilization rates for this age group (in 1992, 56 percent of women age 40 or older reported a mammogram in the past two years (Breen et al. 2001)). Religious attendance rates also differ from national averages. In the current sample, one-third of the women attend church services every week, almost half attend almost weekly (45 percent), and less than one-fourth attend two to three times per month or less (23 percent). Other estimates based on surveys of the general population report similar percentages of weekly attenders, but fewer individuals in the almost weekly category, and more persons reporting lower levels of attendance (Carroll 2004). A majority of the women sampled said they strongly agreed with the statement that spiritual health is supportive of physical health (55 percent), while an additional 40 percent said they agreed. Only 5 percent disagreed with or had no opinion about this statement. Thirty-eight percent of PCUSA women strongly supported the statement that trying to maintain one's health is a Christian responsibility. Forty-two percent of women sampled agreed with this statement and 20 percent expressed disagreement or had no opinion.

In terms of the demographic and socioeconomic traits measured in this study, nearly equal percentages fall into each age group (17 percent are under 40 years of age, 20 percent are 40–49 years, 19 percent are 50–59 years, 25 percent are 60–69 years, and 20 percent are 70 years of age or older). An overwhelming majority of the sample is white (94 percent), married (73 percent), and has had at least one child (83 percent). Most of the women have post high school educations (51 percent college and 28 percent graduate). Most women reported a household income between \$25,000 and \$49,999 (42 percent), while 32 percent reported more than this, and approximately one-quarter reported incomes under \$25,000.

Results from the multivariate regression models are presented in Table 1. Model 1 displays the relationship between attendance and mammogram usage, without any controls. The odds ratios indicate that women who attend religious services nearly every week or weekly are significantly more likely to use mammograms than women who attend less frequently or never (O.R. = 2.10, $p < 0.001$; O.R. = 1.58, $p < 0.05$, respectively). The religious belief measures in Model 2 are also significantly related to the use of mammograms in the unadjusted models. Very strong or moderate belief in the connection between spiritual and physical health is associated with higher odds of reporting a mammogram compared to women in the low category for this variable (O.R. = 2.18, $p < 0.05$; O.R. = 2.40, $p < 0.01$, respectively). Similarly, women who strongly agree that maintaining one's health is a Christian responsibility are more likely to use mammograms than women who do not hold this belief (O.R. = 1.77, $p < 0.05$).

When the demographic and socioeconomic controls are added in Model 3, both the size and the significance of the attendance effects are slightly reduced (though not significantly, using coefficient difference tests). Near-weekly attendance still has a significant association with usage in this model (O.R. = 1.81, $p < 0.01$), as do several demographic characteristics (age and having at least one child). Of the socioeconomic variables included here, only income is associated with utilization. Specifically, women in the lowest income bracket are only half as likely to report the

TABLE 1
THE RELATIONSHIP BETWEEN RELIGIOUS ATTENDANCE, RELIGIOUS BELIEFS, AND COVARIATES WITH MAMMOGRAM UTILIZATION (PRESBYTERIAN PANEL STUDY, HEALTH SUPPLEMENT, 1991)^a

	Mammogram Utilization				
	Model 1	Model 2	Model 3	Model 4	Model 5
Religious attendance (low)					
High: weekly	1.58*		1.28		1.26
Medium: nearly every week	2.10***		1.81**		1.83**
Religious beliefs					
Spiritual health (low)					
High		2.18*		1.87	1.85
Medium		2.40**		1.95*	1.99*
Christian responsibility (low)					
High		1.77*		1.24	1.19
Medium		1.09		0.87	0.81
Demographic variables					
Age (continuous)			1.05***	1.05***	1.05***
Race (white)					
Nonwhite			1.18	1.15	1.20
Marital status (not married)					
Married			0.82	0.82	0.82
Children (none)					
One or more			1.80**	1.83**	1.78**
Socioeconomic variables					
Education (college degree)					
High: graduate school			0.99	1.03	1.02
Low: high school or less			1.03	1.02	1.00
Income (medium: \$25,000–\$49,999)					
High: \$50,000 or more			1.64**	1.71**	1.70**
Low: under \$25,000			0.47***	0.48***	0.47***
–2 Log likelihood	1191.36	1186.71	1082.35	1084.09	1073.57
N	1,070				

^aLogistic regression odds ratios.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed tests).

use of a mammogram in the past two years as women who earn between \$25,000 and \$49,999 annually.

The adjusted models estimating the association between religious beliefs and mammography use are shown in Model 4. The results show that women who agree that there is a connection between spiritual and physical health are significantly more likely to report having a mammogram compared to those who disagree (O.R. = 1.95, $p < 0.05$). The belief regarding Christian responsibility is no longer significant. Finally, Model 5 shows the full model estimating the associations between attendance, beliefs, and use of mammograms. Both attendance and the spiritual health belief remain significant (and relatively unchanged in magnitude). In other words, the religious beliefs included in this study do not appear to mediate the relationship between religious attendance and utilization.

DISCUSSION

Breast cancer is the second leading cause of cancer deaths among women in the United States and is the leading cause of cancer deaths for women ages 40–55 (American Cancer Society 1998; Erwin et al. 1999; Wingo et al. 1996). Fortunately, mammography allows many cases to be detected early and treated, and this has resulted in a lowering of the breast cancer mortality rate in the past decade (ACS 2004b). Although often overlooked, involvement with a religious organization may promote mammography use by increasing women's access to health care services and strengthening motivations to engage in health promotion activities. The current study finds that church attendance and religiously-based health maintenance beliefs are positively (though inconsistently) associated with the use of mammograms. Although the protective effects of attendance and beliefs are reduced in the multivariate models, several significant findings remain. Specifically, there are significant benefits associated with near-weekly attendance compared to less frequent attendance patterns. In addition, moderate support for the view that spiritual health and physical health are linked has a salutary effect on mammogram utilization.

Looking at the key findings in more detail, the results indicate that women who attend services nearly every week are almost twice as likely to report having a mammogram as women who attend less frequently. Because moderate attendance is associated with a higher likelihood of reporting a mammogram, but more frequent attendance does not appear to be beneficial, Hypothesis 1 receives only partial support.

The positive relationship between moderate attendance and mammography use is supported by several previous studies on religion and preventive service use, including studies using nationally representative data (e.g., Benjamins and Brown 2003; Benjamins 2005). There are several possible explanations for this association. For one, attendance increases exposure to potential support networks, and embeddedness within these networks would likely include exchanges of information. The informal networks within the church may be especially beneficial because members of PCUSA churches are relatively well-educated and are likely to be reading and seeking out information from diverse sources, such as books, the media, and contacts. These networks may foster exchanges of general health information, as well as more specific information regarding mammograms. For example, members may remind one another about the need for mammograms, the potential benefits of preventive service use, and other related issues. The relationship between attendance and mammography use may also stem from personality differences between churchgoers and nonchurchgoers. For example, frequent churchgoers may be comparatively disciplined and able and inclined to stick to routines. They may also be more cautious, risk-averse people and, thus, may tend to be proactive with regard to health matters (and other personal affairs, such as financial planning, education, etc.). Finally, frequent attendance may increase a member's exposure to health-related programs in the church, such as health education campaigns. Although speculative, all of the above reasons may incline active churchwomen to pursue screenings for breast cancer.

At the same time, however, perhaps some of the most active churchwomen may delay getting mammograms for several reasons. To begin, they experience high demands from the church and may also be heavily involved in other community affairs, such as volunteering, work on committees, and leadership roles. Thus, they may have less time or inclination to look after their own health. The larger social networks that are often reported by religiously active individuals may also be a potential burden for these women. For example, one previous study found that clergy members and elders in a Protestant church were more likely to report negative interactions, such as fellow members being too demanding (Krause, Ellison, and Wulff 1998). In addition, there may be other aspects of belief, e.g., virtue of self-denial, religious addiction ("toxic faith"), or unmeasured personality factors, that may undermine a focus on personal well-being. It is impossible to tell from these data, but explaining the lack of significant findings for the most frequent attenders clearly warrants additional investigation.

The second key finding of this study is that religiously-motivated health beliefs are only inconsistently associated with mammography use. Specifically, while we proposed that women who held these beliefs would have higher rates of mammogram utilization (Hypotheses 2 and 3), only moderate agreement with the belief that spiritual health promotes physical health was associated with increased use of mammograms.

Despite the potential importance of religiously-based beliefs in influencing health behaviors and explaining the link between religious involvement and health behaviors, only one previous study in this area was found (Holt, Lukwago, and Kreuter 2003). More broadly, examining these beliefs in a study of mammography use represents an important first step in addressing the widespread neglect of the role of religious beliefs in the religion-health literature as a whole. The current study finds that the belief in a close connection between spiritual and physical health matters for mammography use, although our results suggest that there may be an optimal level of support for this belief. It is possible that the strongest advocates of this connection not only believe that spiritual health is supportive of physical health, but also that spiritual health is sufficient for ensuring physical health. In other words, they may believe that maintaining a strong faith can be a substitute for health care services (Curlin et al. 2004). A greater reliance on prayer, healing, or other religious activities for the members of this group could help to explain the lack of positive effect for this belief on mammogram utilization. Obviously, the beliefs studied here (and others) deserve further study, particularly in more representative (and diverse) samples.

It is interesting to note that no support for the mediating role of these two beliefs was found (as was proposed in Hypothesis 4). In future work, it may be useful to distinguish between those beliefs that regard health as an intrinsic good (an end in itself) and those that value health for its instrumental benefits. The beliefs considered here are of the first type, but it is possible that religious involvement more strongly influences beliefs of the second type. For example, religion may foster commitment to health as a means of enabling the following activities: involvement in ministry and evangelism; civic engagement; volunteering; service to others; spending time with family and working to support a family; cultivation of personal spirituality; and maintaining independence to avoid becoming a burden to others. Thus, it may be religion-inspired attitudes (versus beliefs in the sacredness of the body and its well-being) that are most important in promoting proactive health behaviors.

Like all studies, this one has certain limitations that must be taken into account when interpreting the results. First, our data examine a nationwide sample of women in only one denomination (PCUSA), so one should generalize these results to other groups with caution. At the same time, it is worth noting that this is a particularly interesting population to study because of the relatively high levels of socioeconomic status (including access to health insurance), as well as the elevated rates of mammogram use compared to American women in general. A second limitation is that the data are cross-sectional and do not allow for causal interpretations. Confirmation of these findings awaits the collection and analysis of longitudinal data on this topic. Finally, this study would have benefited from additional measures of mammography use and religious beliefs, as well as controls for personality dimensions.

These limitations notwithstanding, we have contributed to a small, emerging literature on the links between religion and preventive health care behaviors. Our results shed new light on religion as a predictor of mammography use, showing that both church attendance and religiously-based health maintenance beliefs are linked with this important preventive health practice. Additional investigation in the areas outlined above will further clarify the role of religion in shaping preventive health care use, and perhaps other health behaviors as well.

NOTES

1. Each of the four samples of the Presbyterian Panel (members, elders, pastors/clergy, and specialized clergy) was drawn using a distinct sampling technique.

2. Ancillary analyses (not shown) used a control for respondent's membership status (elder = 1), but this was not significant. We also tested interactions between attendance and elder status and between the religious beliefs and elder status. These were also not significant. This suggests that the process via which women are influenced to get mammograms does not vary across the two groups. Therefore, the elder control term was excluded and the two samples are combined in the models presented here.
3. We also tested interactions between the religion variables and age. Specifically, separate interaction terms for attendance and the belief measures were created with a dummy variable representing age under 40 years or 40 years and above. None of these interaction terms was significant at the $p < 0.05$ level in the final model.
4. Cases missing data for the independent ($N = 7$) or dependent ($N = 11$) variables were eliminated from the analyses. Less than 1 percent of the respondents were missing data for either of the religious belief variables and those with missing data for these items were coded 1 for "low."
5. In analyses not shown, controls for health status (self-rated health), family history of breast cancer, other health behaviors (smoking, drinking, and exercise), and a measure of congregation size were tested. None of these variables was significantly associated with mammogram use, nor did they affect the relationship between attendance and usage. Thus, these were not included in the models presented here.

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