

**Religious Influences on Preventive Health Care Use
in a Nationally Representative Sample of Middle-Age Women**

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Despite the many benefits of preventive services, they are often underutilized. Social factors, such as religion, can figure prominently in these discrepancies by either creating barriers or facilitating use. Using data from the Health and Retirement Survey (1992-1996), the current study examines the relationship between religious attendance, salience, and denomination and three types of female preventive services for middle-age women (N=4,257). Findings indicate that women who attend religious services more frequently use more mammograms, Pap smears, and breast exams. In addition, women belonging to Mainline Protestant or Jewish denominations use more services than Evangelical Protestants. Furthermore, women with higher levels of salience report greater utilization of breast exams than women with low levels. These findings add important information to the public health literature concerning factors that influence preventive service use. This type of knowledge could help lead to more effective interventions, reduced sociodemographic disparities, and an overall increase in preventive care utilization.

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Preventive service utilization levels vary widely within the U.S. population. Individuals who are poor, uninsured, older, less educated, not married, or members of racial or ethnic minority groups often use fewer preventive services (Breen, Wagener, Brown, Davies, and Ballard-Barbash 2001; CDC 1999; Coffield, et al. 2001; Drociuk 1999; Hayward, Shapiro, Freeman, and Corey 1988; Janes et al. 1999). These disparities may reflect the reasons often given for low levels of use, including issues of limited access, information, and motivation (Drociuk 1999; Amonkar, et al. 1999). Social factors can figure prominently in these discrepancies by either creating barriers or facilitating use. Religion is one social factor that may affect service utilization. Because religious beliefs and activities can influence individual lifestyles, worldviews, and motivations, it is possible that religion has an effect on behaviors involving health promotion and disease prevention.

In fact, religion has been shown to be associated with other health behaviors such as smoking, drinking, drug use, and diet, as well as with general health care use (Koenig, McCullough, and Larson 2001; Schiller and Levin 1988). It is reasonable to assume that religion may also affect preventive service use; however, few studies have directly addressed this issue. The present study will attempt to fill this gap in the literature by considering the effects of religious attendance, salience, and denomination on three

different types of female preventive services (mammograms, Pap smears, and breast exams) within a nationally representative sample of pre-retirement age women.

PRIOR STUDIES

The few existing studies looking at religion and preventive service use generally find significant differences in utilization by religious denomination and level of involvement in religious activities (Fox, et al. 1998; Miller and Champion 1993; Miller, Norcross, and Bass 1980; Murray and McMillan 1993; Naguib, Geiser, and Comstock 1968; Yi 1994; Yi 1998). Perhaps the most recent study to date examined the influence of religious salience and denomination on six different types of preventive services for U.S. adults over 70 years of age (Benjamins and Brown 2003). The results showed that individuals who report high levels of religious salience are more likely to use flu shots, cholesterol screening, Pap smears, and prostate screenings compared to those with lower levels of salience. Similarly, compared to non-affiliated individuals, those claiming membership in some religious organization were more likely to report the use of all of the preventive services listed above, as well as breast exams and mammograms. Of the denominations included in the study, Judaism was most significantly associated with increased service utilization (Benjamins and Brown 2003).

Another recent study focused on a wider variety of religion variables, including church attendance and self-rated religiosity; however, these variables exhibited no significant effects on breast cancer screening in this church-based sample of Los Angeles women (Fox, et al. 1998). Beyond these two studies, the majority of the prior research in this area focuses on denominational differences in female preventive service utilization.

Most findings show that breast and cervical cancer screening utilization rates differ by religious affiliation (Miller and Champion 1993; Miller, Norcross, and Bass 1980; Murray and McMillan 1993; Naguib, Geiser, and Comstock 1968; Yi 1994; Yi 1998). These studies generally categorize women as Catholic, Protestant, or Other, and there are conflicting findings regarding which denominations are more likely to use these services.

Furthermore, the majority of these studies have methodological limitations that reduce the usefulness of their findings. For example, most of the studies use cross-sectional data (Miller and Champion 1993; Miller, Norcross, and Bass 1980; Murray and McMillan 1993; Naguib, Geiser, and Comstock 1968; Yi 1994; Yi 1998) and several use convenience samples (Miller and Champion 1993; Miller, Norcross, and Bass 1980). In addition, most examine a single measure of religion (Miller and Champion 1993; Miller, Norcross, and Bass 1980; Murray and McMillan 1993; Yi 1994; Yi 1998) and no studies were found that investigated detailed denominational differences in preventive service utilization in the U.S. Finally, few studies have attempted to discover the factors that may mediate this relationship.

The current study addresses these issues by using a longitudinal, nationally representative sample of pre-retirement aged U.S. females. Within this sample, three conceptually distinct measures of religion, including a detailed denomination measure, are tested as predictors of female preventive service utilization. Moreover, social support and physical and mental health status are examined for their role as possible mediators of these relationships.

THEORETICAL FRAMEWORK

Three empirically and conceptually distinct measures of religion were included in the Health and Retirement Survey (HRS). These measures represent the following facets of religion: organizational involvement, salience, and affiliation. Each of these facets is expected to influence preventive service utilization, and possible explanations for these relationships are offered below.

Organizational Involvement

One important aspect of religion entails involvement with a religious organization. This involvement may affect preventive service use in several ways. For example, churches and synagogues frequently offer activities or information about health promotion topics that may lead (directly or indirectly) to greater use of services. Other types of related programs include health education campaigns and transportation services to health care providers. Numerous studies provide evidence supporting the effectiveness of religious programs in promoting healthy behaviors and lifestyles (Davis, et al. 1994; Erwin, Spatz, Stotts, and Hollenberg 1999; Fox, Stein, Gonzalez, Farrenkopf, and Dellinger 1998; Lasater, Wells, Carleton and Elder 1986; Levin 1984; Voorhees, et al. 1996). Church-based networks, informal discussions, and support systems originating within the congregation may also play a role. Possibly as a result of these church-based programs and the more extensive social networks of members, individuals with higher levels of church attendance have significantly more knowledge about health maintenance activities (Apel 1986). Each of these resources, alone or in combination, is expected to translate into greater use of preventive health care services by those who attend religious services more frequently.

Denomination

It is also expected that denominational differences will be found. It is important to note that it is not exclusively theological differences that drive variations between denominations, but a combination of theology and group norms brought about by individual interactions (White 1968), as well as organizational differences between denominations (and congregations). Theological differences may arise directly from the scriptures of a particular denomination or indirectly through interpretations. Group norms that exist within cultural subgroups (such as religious denominations) may also potentially influence how members understand health, disease etiology, and treatments (Jacobs and Giarelli 2001; Turner 1996). Finally, organizational differences may arise if the leaders (or members) of a certain denomination or church initiate programs or policies related to the health of their members. However, due to the conflicting findings in previous studies of denominational differences in preventive service use and to the absence of detailed denomination information in past studies, directional hypotheses for this aspect of religion can not be made.

Religious Salience

Religious salience, also known as subjective religiosity, is included to capture the possible effects of personal beliefs, faith, and commitment on preventive service use. Several studies have shown that salience is related to a wide range of health-related behaviors, including smoking, drinking, and promiscuity (Koenig, McCullough, and Larson 2001). Furthermore, salience has been shown to predict a wide array of preventive services in a sample of older adults (Benjamins and Brown 2003). It is

possible that factors such as better mental and physical health, a belief in moderation, constraint, and regularity, or feelings of responsibility to a higher being mediate these relationships. In contrast, religious salience may also have a negative influence on health behaviors. Previous researchers have theorized that believing in the afterlife may undermine the importance of preventive services. If individuals believe that life continues after death and, perhaps more significantly, that life in the next world is more important, activities designed to improve their health or decrease their mortality risk may be meaningless (Wynder and Sullivan 1982). However, based on previous findings, it is expected that the positive influences of salience will outweigh the negative ones and, thus, higher levels of salience will be related to greater use of preventive services.

Possible Mediators

Potential mediators include variables that are associated with both the independent and dependent variables and that may help to explain the relationship between the independent variables and the outcomes. Based on a review of the literature, three sets of possible mediators were chosen to be tested. These include social support, and physical and mental health status. Social support is a potential mediator because evidence suggests that religious people have larger social networks and more social support (Bradley 1995; Ellison and George 1994). Social support, in turn, has been found to be associated with greater usage of preventive services (Katapoldi et al. 2002).

Religion may also affect preventive service use by its influence on health status. Higher levels of religious involvement are associated with better mental health (for review, see Koenig, McCullough, and Larson 2001), which has been shown to influence

the use of health services (Koenig, et al. 1989; Simon, Ormel, VonKorff, and Barlow 1995). Religion also has a salutary, or protective, effect on a variety of physical health outcomes and this may affect an individual's ability to access preventive services (Hummer et al. 1999; Idler and Kasl 1997; Levin and Markides 1985; Musick 1996; Oman and Reed 1998; Strawbridge, et al. 1997). Each of these three sets of variables may help to explain a significant relationship between religion and preventive service use.

With the previous studies and theoretical framework in mind, several hypotheses are postulated as follows:

Hypothesis 1: Higher levels of attendance will be associated with more preventive service use.

Hypothesis 2: Levels of use will differ by denomination.

Hypothesis 3: Higher religious salience will be associated with more preventive service use.

Hypothesis 4: Relationships between the religion variables and preventive service use will be mediated by social support and health status.

DATA AND METHODS

Data

Data for the analyses come from the Health and Retirement Survey (HRS). The HRS is a nationally representative survey of non-institutionalized older adults in the United States designed to examine pre-retirement age adults (HRS website 2003). Only

females born between 1931 and 1941 (those given a valid weight in the data) are included (n=4,924). Of these, 4,266 women (87 percent) remained in the sample through Wave 3 (1996). After exclusions based on race, ethnicity, and other missing data, the final sample size is 4,257. The religion and control variables are measured in Wave 1 (1992), while the preventive service outcomes are measured in Wave 3 (1996). The only exception to these guidelines is the variable representing religious salience, which was not asked in Waves 1 or 2 and, therefore, is measured in Wave 3 along with the outcome variables.

Measures

Preventive Services. There are three dependent variables of interest: mammograms, Pap smears, and breast exams. Inquiries about each preventive service begin with the following question, “Since we talked to you last in (previous wave interview month and year), have you had any of the following medical tests or procedures?” All preventive service variables are dichotomous with ‘1’ representing utilization and ‘0’ representing non-utilization in the past two years. In addition, a summary variable is used to examine the total usage of female preventive services, ranging from 0 to 3.

Religion. The first religion variable measures an individual’s organizational involvement by asking about his or her frequency of attendance at religious services. The respondents are asked how often they have attended religious services in the past year and then are prompted with the following probe: “Would you say more than once a week, once a week, two or three times a month, one or more times a year, or not at all?” Five

dummy variables were constructed to represent each of these categories. Due to the non-linear relationship between attendance and preventive service use, the dummy variables were included in the models. Individuals who never attend were selected as the reference group.

The second variable, religious denomination, indicates the group or belief system with which the individual is affiliated. Six denomination categories were created as follows: Catholic, Evangelical Protestant, Mainline Protestant, Jewish, other religion, and non-affiliated. The assignment of specific affiliations to each category was done in accordance to the classification scheme developed by Steensland and his colleagues, with a few exceptions (Steensland, Park, Regnerus, Robinson, Wilcox, and Woodberry 2000). One improvement over previous studies is the separation of Mainline and Evangelical Protestant denominations. Mainline denominations include groups such as Methodists, Lutherans, and Presbyterians, while Evangelical Protestants include more conservative affiliations such as Southern Baptists and Pentecostals. Evangelical Protestants are the reference group.

The final religion variable measures an individual's religious salience. This measure is intended to tap the salience of religion to that individual. The wording of the question is as follows: "How important would you say religion is in your life: is it very important, somewhat important, or not too important?" Like religious attendance, dummy variables were used to measure these three categories of salience. The lowest category of salience represents the reference category.

Due to possible relationships between the three sets of religion measures, correlations for these variables were examined using continuous measures of attendance and salience and dichotomous measures for each denomination category (analyses not shown). The highest overall correlation was between attendance and salience ($r = .47$). Within the denomination categories, the strongest correlation was for those not having an affiliation. It was negatively correlated to both attendance ($r = -.24$) and salience ($r = -.23$). Because these correlations may influence the regression models, additional analyses were conducted using separate models for each set of religion variables (analyses not shown). These models showed that the relationships between the separate religion variables and the outcomes did not change substantially when all three sets of religion variables were included together.

Controls. Measures of demographic characteristics that are frequently found to be associated with the use of female preventive services, such as age, race/ethnicity, and foreign-born status, were included in the models (Barr et al. 2001; Breen and Kessler 1994; Hewitt 2002; Kirkman-Liff 1992; Maise 2002; O'Malley et al. 1999; Schneider 2001). Age is measured as a continuous variable. Race/ethnicity indicates whether the individual is non-Hispanic White, non-Hispanic Black, or Hispanic. Finally, a variable is included to ascertain whether the individual was born in the U.S. or not.

Because aspects of socioeconomic status have also been found to predict female preventive service utilization (Hewitt 2002; Kirkman-Liff 1992; Klassen et al. 2002; Roetzheim et al. 1999), four measures of socioeconomic resources were also included. Education is measured with a continuous variable that represents the respondent's

completed years of formal education. The highest value (17 years) represents all levels of education beyond college. Income is a continuous measure of the family income of the respondent in the past year. Net worth is measured with a dichotomous variable that designates individuals in the lowest quartile of the distribution as low net worth (worth less than \$32,500). Finally, the presence of health insurance is measured as a dichotomous variable.

Mediators. Social support and health status (physical and mental) are examined for their role as possible mediators. Marital status (married or not) and satisfaction with family and friends are each included as measures of social support. The quality of friendships is measured with an item that asks respondents for their overall level of satisfaction with their friendships. Support from family is measured with a similar item that assesses the respondents' satisfaction with their family life. For these two variables, higher scores indicated higher levels of satisfaction. Self-rated emotional health and depression are included in the models as measures of mental health status. Self-rated emotional health is measured with the following response choices: excellent, very good, good, fair, and poor (with higher scores indicating worse self-rated emotional health). Individuals with scores in the top quartile of the CES-D depression scale are categorized as depressed (Radloff 1977; Ensel 1986). For physical health status, two chronic conditions that are directly associated with the preventive screening measures (heart conditions and cancer) are included individually. A variable representing the total number of other chronic conditions is also included. This count represents the presence of hypertension, diabetes, chronic lung disease, arthritis, and stroke. In addition, self-

rated health is included, measured in the same manner as self-rated mental health. Finally, activity limitations were included in preliminary models, but no significant effects were found and, accordingly, they were excluded from the final models.

(TABLE 1 ABOUT HERE)

Methods

Univariate analyses provide the mean and standard deviation for each variable included in the regression models (shown in Table 1). Multivariate analyses for the individual service outcomes are conducted using logistic regression models, due to the dichotomous nature of the individual service use outcome variables. Logistic regression models are used for these individual services because the estimates produced by these models describe the odds of the event (here, whether the preventive service was used or not) occurring (Powers and Xie 1999). For the total utilization outcome, the analyses use negative binomial models. Models using negative binomial distributions are more appropriate than those using normal distributions because total female usage is measured by a count variable that has a non-normal distribution (Long 1997).

For all multivariate models, the method of progressive adjustment is used to help determine which variables are responsible for the relationship between religion and preventive services (Mirowsky, 1999). The first model includes only the three sets of religion variables. The second models adds the demographic characteristics and the socioeconomic resources. Finally, the third model examines the role of the possible mediators. In analyses not shown, interaction effects were then tested between the religion variables, as well as for age, race, and ethnicity. No significant patterns were

seen, indicating that religion influences preventive service utilization in a similar manner for individuals in all of the demographic groups tested in this study.

Individual-level weights provided by HRS are used in all analyses to account for sample selection probabilities, missing values, and attrition (Heeringa and Connor 1995). Due to the complex sampling design of the HRS, the variances of the estimates in the models may be understated if a simple random sample is assumed. Thus, adjustments for the sample design effect were made using the Taylor series linearization procedures in STATA (Stata Corp 2003).

(TABLE 2 ABOUT HERE)

RESULTS

Mammogram Utilization

The first part of Table 2 displays odds ratios for the associations between the religion variables and mammogram utilization. The first model shows that all levels of religious attendance strongly predict the use of mammograms in comparison to women who never attend religious services. This relationship is slightly weakened by the addition of the sociodemographic and resource variables in Model 2. In the full model, the size of this estimated net effect ranges from a 33 percent increase (for those attending one to two times a year or more) in odds to almost double the likelihood of reporting a mammogram (for those attending service once a week), compared to those who never attend religious services. The affiliation variables show that Mainline Protestants are more likely than Evangelical Protestants to report having a mammogram (O.R.=1.34, $p<.01$). Similarly, Jewish women are over two and a half times more likely to report a

mammogram, compared to Evangelical women; however, this association is attenuated by the inclusion of the demographic and socioeconomic characteristics. Religious salience is not a significant predictor of mammography utilization.

Pap Smear Utilization

Pap smears are also associated with levels of religious attendance, as shown in the middle section of Table 2. Compared to women who do not attend religious services, those who attend two to three times a month are over 50 percent more likely to report a Pap smear, while those who attend once a week or more are over 30 percent more likely to report this type of preventive service, net of control and mediating variables. The influence of attendance is attenuated by the addition of the sociodemographic and resource variables in Model 2, but remains stable with the addition of the mediators in Models 3. Religious denomination is also associated with the use of Pap smears. In the full model, Jewish women are almost three times more likely to report Pap smears, compared to Evangelical Protestants (O.R.=2.93, $p<.01$). Mainline Protestants are also more likely than Evangelical Protestant women to report utilization of this service. Interestingly, women who are not affiliated with any denomination are also more likely than Evangelical women to report a Pap smear; however, this association loses significance with the addition of the resource variables. Again, religious salience is not a significant predictor of Pap smear utilization.

Breast Exam Utilization

Religion appears to affect the use of breast exams differently than the other two preventive service outcomes. The right hand side of Table 2 shows that the highest two

categories of religious attendance do not predict greater use of breast exams, in contrast to previous outcomes. Specifically, only the two lowest levels of attendance are associated with the likelihood of reporting breast exams compared to those who never attend (O.R.=1.46, $p<.01$; O.R.=1.23, $p<.05$, respectively). Furthermore, none of the religious affiliation variables predict the use of breast exams as they do for the other services. In Model 1, both Catholic and Mainline Protestant women are associated with lower levels of utilization than Evangelical Protestant women. However, these effects disappear when the demographic and social factors are added in Model 2. As a final contrast, religious salience predicts breast exam utilization. Women who report that religion is somewhat or very important in their lives are 36 percent more likely than women who say that religion is not important to have a breast exam, after controlling for demographic and socioeconomic variables and possible mediators.

(TABLE 3 ABOUT HERE)

Total Female Utilization

The relationships between the religion variables and the total number of preventive services used by females generally follow the patterns established by the individual models. Table 3 shows that, of the religion variables, attendance best predicts overall levels of service utilization. In the full model, all four levels of attendance predict a greater number of services used, compared to women who never attend religious services. Attending religious services two to three times a month or once a week appears to be especially advantageous ($\beta=.11$, $p<.001$; $\beta=.10$, $p<.01$). The findings for religious affiliation also resemble those seen earlier. For example, both Jewish and Mainline

Protestant women report using more services than Evangelical Protestants. However, these estimated effects do not remain significant throughout the addition of the control and mediating variables. Finally, religious salience does not significantly predict the utilization of a greater number of preventive services in the final model.

SUPPORT FOR HYPOTHESES

Hypothesis 1: Higher levels of attendance will be associated with more preventive service use.

Religious attendance is found to be a significant predictor of utilization for all of the preventive services, as well as for total utilization. Therefore, the current data support the first hypothesis. Although not attending any religious services consistently predicts the lowest levels of preventive service utilization, the association does not follow a dose-response pattern. In other words, the magnitude of the association between attendance and preventive service use does not increase as the frequency of attendance increases.

Hypothesis 2: Levels of use will differ by denomination.

The second hypothesis is also supported by the data. Denominational differences in levels of use do exist; however, the predictive ability of the religious denomination variables is not consistent across the range of preventive service outcomes. The strongest finding is that Mainline Protestants are more likely to report mammograms and Pap smears, compared to Evangelical Protestants. Only for Pap smears did Jewish individuals report greater utilization than Evangelical Protestants in the final model. However, for mammograms and total usage, Jewish exhibit relatively higher levels of utilization as compared with Evangelical Protestants.

Hypothesis 3: Higher religious salience will be associated with more preventive service use.

Salience predicts only one of the preventive service outcomes. Specifically, women who report that religion is a very or somewhat important factor in their lives are more likely to report breast exams than women who report that religion is not important to them. Hence, this hypothesis receives only weak support from the data.

Hypothesis 4: Relationships will be mediated by social support and health status.

Three sets of possible mediators were investigated: social support, mental health, and physical health. The findings reveal that although these variables are important predictors of preventive health care use (especially marital status and total chronic conditions), the relationships between the religion variables and the preventive service outcomes are not substantially affected by their inclusion in the models. Thus, their role as mediators of the relationship between religion and preventive service use is not supported by the data.

DISCUSSION

Overall, religion appears to play an inconsistent role in influencing adult women's decisions to utilize preventive health services. The association between religion and preventive service utilization depends on both the measure of religion used and the type of preventive service. Most notably, there is something about attending religious services that increases female preventive service utilization, in contrast to previous findings (Fox et al. 1998). Additionally, belonging to certain religious denominations also influences the probability of a woman using a particular preventive service. While no previous studies

have examined this range of affiliations, past evidence does support denominational differences in female preventive health care utilization (Benjamins and Brown 2003; Miller, Norcross, and Bass, 1980; Miller and Champion, 1993; Murray and McMillan, 1993; Naguib, Geiser, and Comstock, 1968; Yi, 1994; Yi, 1998). Furthermore, having higher levels of religious salience predicts greater use of breast exams, a finding that also is consistent with existing evidence (Benjamins and Brown 2003). Even after controlling for numerous demographic and social characteristics, many of these associations between religious attendance, denomination, salience, and preventive service use remain significant. Finally, three sets of possible mediators were investigated and the findings reveal that although social support and mental and physical health status are important predictors of preventive health care use, they do not appear to mediate the relationship between religion and the service use outcomes.

Religion has been a particularly neglected social factor in health research and findings such as those shown here may compel health care workers and health researchers to pay more attention to religious involvement as a potentially significant determinant of health care utilization. While the use of general health care services is mainly determined by an individual's need for such services, utilization levels for preventive health care are more susceptible to other factors. This essential difference, along with empirical evidence from studies such as this, challenge researchers and practitioners in the health care field to further consider the effect of religion on the utilization of preventive services. These results also add to the growing field of religion and health research. Preventive health care use has emerged as a viable mechanism linking religious involvement and beliefs to a

wide variety of health outcomes. While still untested, the inclusion of preventive service utilization in studies investigating the influence of religion on various aspects of morbidity and mortality will be the next step in investigating the role of this potentially illuminating piece of the puzzle.

In addition to the impact this research has on the relevant literatures, other implications may stem from the findings. For example, the results provide some degree of support for the idea of integrating religious organizations into the health care system. In the times of increasing costs and decreasing funds for health care, governments and insurance agencies may find religious organizations to be effective promoters of preventive health care and even providers for certain services. This possible role of religious organizations may be increasingly important as responsibilities of health care delivery are beginning to be transferred from the formal health care system to communities (Swinney, Anson-Wonnka, Maki, and Corneau 2001). Findings such as these may also be useful to encourage religious organizations to initiate health programs as part of their social ministry. While intervention studies and other, more policy-oriented, studies can provide more direct answers to these issues, empirical support for a positive relationship between membership in a religious organization and the use of preventive health services may encourage government agencies to consider collaborating with religious organizations to better serve the health care needs of the population.

While the results of this study may open up new areas of research and encourage the integration of health programs within religious organizations, conclusions and implications must be made cautiously because the data set is only representative of U.S.

women between the ages of 51 and 61. A data set more representative of the adult population would be more useful in generating generalizations about the association between religion and preventive service use.

CONCLUSIONS

Religious beliefs and involvement influence whether or not a women uses mammograms, Pap smears, and breast exams. Attending religious services, adhering to the beliefs of a certain denomination, and subjective ratings of religiosity are all associated with the utilization of female preventive services. These findings add to the burgeoning literature on religion and health and the increasing amount of research on determinants of preventive service utilization. They may also provide valuable support for the integration of health programs into religious organizations. Finally, the results and implications of the current study will hopefully motivate other health and social science researchers to pursue this valuable area of research.

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Table 1. Sample Characteristics from the Health and Retirement Survey, 1992-1996^{a,b}

	Mean	S.D.
Religion		
<i>Service Attendance</i>		
More than 1/Week	.17 ^c	.38
Once/Week	.26	.44
2-3 Times/Month	.16	.37
1-2 Times/Year or More	.20	.40
Never	.21	.40
<i>Affiliation</i>		
Catholic	.27	.46
Jewish	.01	.12
Mainline Protestant	.30	.46
Evangelical Protestant	.35	.48
Other	.03	.17
Not Affiliated	.03	.17
<i>Salience</i>		
Very Important	.74	.44
Somewhat Important	.21	.41
Not Important	.06	.23
Preventive Service Use		
Mammogram	.71	.45
Pap Smear	.68	.47
Breast Exam	.63	.48
Total Usage (0-3)	2.02	1.01
Demographic and Social Factors		
Age (51-61 years)	55.7	3.08
<i>Race/ethnicity</i>		
NH White	.72	.45
NH Black	.18	.39
Hispanic	.09	.29
Foreign Born Status	.09	.29
Resources		
Education (0-17, in years)	12.0	3.01
<i>Net Worth</i>		
Low (\leq \$32,500)	.28	.45
Household Income (0-59.9, in 10,000's)	4.94	5.98
Health Insurance	.77	.42
Social Support		
Married/Living with Partner	.69	.46
Satisfaction with Friendships (0-5)	4.55	.77
Satisfaction with Family Life (0-5)	4.56	.79
Mental Health		
Self-Rated Emotional Health (1-5)	3.41	1.08
Depression Scale	.22	.42
Physical Health		
<i>Chronic Conditions</i>		
Heart Conditions	.11	.31
Cancer	.07	.26
Total Other Conditions (0-5)	1.05	.97
Self-Rated Physical Health (1-5)	2.60	1.20

Notes: ^a Unweighted, N=4,257

^b Proportions may not add to 1 due to rounding
^c For dichotomous variables, proportions are displayed in place of means
+ $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 2. Estimated Net Effects of Religious Attendance, Affiliation, Salience, and Other Controls on the Use of Female Preventive Services (HRS, 1992-1996)^a

	Mammogram			Pap Smear			Breast Exam		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Religion									
Service Attendance (Never)	1.91 ***	1.57 ***	1.66 ***	1.50 **	1.29 *	1.33 *	0.90	0.90	0.87
More than 1/Week	2.13 ***	1.77 ***	1.84 ***	1.54 ***	1.32 *	1.35 **	1.07	1.05	1.05
Once/Week	1.82 ***	1.54 ***	1.61 ***	1.71 ***	1.48 **	1.51 ***	1.43 *	1.42 **	1.46 **
2-3 Times/Month	1.47 ***	1.30 *	1.33 **	1.20	1.07	1.09	1.19 +	1.20 +	1.23 *
1-2 Times/Year or More									
Affiliation (Evangelical Protestant)									
Catholic	0.99	0.91	0.93	1.02	0.91	0.91	0.81 +	0.92	0.93
Jewish	2.57 **	1.76 +	1.71	4.04 **	2.99 **	2.93 **	0.68	0.74	0.77
Mainline Protestant	1.62 ***	1.34 **	1.34 **	1.39 **	1.19 +	1.19 +	0.86 +	0.93	0.92
Other	0.97	0.86	0.86	1.16	1.07	1.09	0.72	0.77	0.81
Not Affiliated	1.19	1.00	1.01	1.57 +	1.40	1.41	1.17	1.20	1.25
Salience (Not Important)									
Very Important	0.86	0.98	0.96	0.94	1.06	1.07	1.49 *	1.41 *	1.36 *
Somewhat Important	0.83	0.91	0.90	0.98	1.06	1.07	1.41 *	1.36 *	1.36 *
Demographic and Social Factors									
Age		0.98 +	0.97 *		0.93 ***	0.93 ***		1.00	1.00
Race/ethnicity (NH White)									
NH Black		1.43 **	1.46 **		1.29 *	1.33 *		1.62 ***	1.71 ***
Hispanic		1.05	1.06		1.11	1.15		0.74 +	0.73 *
Foreign Born Status		1.44 *	1.44 *		1.60 **	1.62 **		0.92	0.93
Resources									
Education (in years)		1.07 ***	1.09 ***		1.05 ***	1.06 ***		0.97 *	0.98
Net Worth									
Low (> \$32,500)		0.71 ***	0.73 **		0.71 ***	0.74 **		0.97	1.10
Household Income (in 1000's)		1.03 ***	1.03 ***		1.03 ***	1.03 ***		1.01 *	1.01
Health Insurance		1.66 ***	1.67 ***		1.59 ***	1.57 ***		1.08	1.05
Social Support									
Married/Living with Partner			1.37 ***			1.19 *			1.30 ***
Satisfied with Friendships			0.91 +			0.96			1.09 +
Satisfied with Family			1.04			1.01			1.13 **
Mental Health									
Self-Rated Health			0.94			0.91 *			1.08 *
Depression Scale			1.11			1.08			1.11
Physical Health									
Chronic Conditions			1.21			0.99			0.99
Heart Conditions			1.13			1.28 +			1.20
Cancer			1.13 **			1.12 *			1.03
Total Other Conditions			1.00			0.91 *			1.07 +
Self-Rated Health			1.00			0.91 *			1.07 +
R-Square	.03	.06	.07	.02	.06	.06	.01	.02	.03
N	4,257								

Notes: ^a Logistic regression odds ratios

+ $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ (two-tailed test)

Table 3. Estimated Net Effects of Religious Attendance, Affiliation, Salience, and Other Controls on Total Female Use of Services (1992-1996)^{ab}

	Total Female Use		
	Model 1	Model 2	Model 3
Religion			
<i>Service Attendance (Never)^c</i>			
More than 1/Week	.10 *	.06	.07 +
Once/Week	.13 ***	.10 *	.10 **
2-3 Times/Month	.16 ***	.13 **	.13 ***
1-2 Times/Year or More	.09 *	.06 +	.07 +
<i>Affiliation (Evangelical Protestant)</i>			
Catholic	-.02	-.03	-.02
Jewish	.15 +	.08	.08
Mainline Protestant	.06 *	.03	.03
Other	-.03	-.04	-.03
Not Affiliated	.09	.06	.06
<i>Salience (Not Important)</i>			
Very Important	.03	.05	.04
Somewhat Important	.02	.04	.04
Demographic and Social Factors			
Age		-.01 **	-.01 **
Race/ethnicity (NH White)			
NH Black		.11 ***	.12 ***
Hispanic		-.03	-.02
Foreign Born Status		.07	.07 +
Resources			
Education (in years)		.01 *	.01 **
Net Worth			
Low (> \$32,500)		-.08 **	-.06 +
Household Income (in 1000's)		.01 ***	.01 **
Health Insurance		.13 ***	.12 ***
Social Support			
Married/Living with Partner			.08 **
Satisfied with Friendships			.02
Satisfied with Family			.00
Mental Health			
Self-Rated Health			-.01
Depression Scale			.03
Physical Health			
Chronic Conditions			
Heart Conditions			.02
Cancer			.06
Total Other Conditions			.03 +
Self-Rated Health			.00
<i>Intercept</i>	.56	.88	.73
<i>Log Likelihood</i>	-2539.2	-2490.4	-2481.2
<i>N</i>	4,257		

Notes: ^a Weighted HRS data

^b Negative binomial estimates

^c Reference category in parentheses

+ $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ (two-tailed test)