

IS THERE A RELIGIOUS FACTOR IN HEALTH CARE UTILIZATION?: A REVIEW

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Abstract—This paper reviews more than 30 studies of health care utilization in which the effects of religion variables are examined, an area previously unreviewed. The authors found that over three-quarters of these studies reported significant religious differences in rates of utilization. The most common operationalization of religion was religious affiliation (typically Protestant vs Catholic vs Jewish), although the effects of religious attendance and religiosity were occasionally examined. Most major areas of health care use are represented in this literature, including psychiatric care, maternal and child health services, dental care, and physician and hospital utilization. Despite the preponderance of significant findings, it is difficult to isolate any consistent trends, although low-order analyses seem to suggest that Jews are higher utilizers than non-Jews. New findings presented from a study in Appalachia were inconclusive. The authors discuss the conceptual limitations inherent in ways in which health services researchers typically investigate the effects of religion. Drawing on recent work in the epidemiology of religion, several recommendations are offered regarding the prospect of future research in this area.

Key words—health services research, religion, physician utilization, hospitalization, Appalachia

INTRODUCTION

In a recent review, Levin and Schiller [1] described a large body of empirical findings lying forgotten at the margins of medical research. Specifically, the authors found nearly 250 published studies dating back over 150 years which presented the results of epidemiologic, sociomedical, and biomedical investigations into the effects of religion. Nearly all of these investigations were large-scale studies in which some operationalization of religion, such as religious affiliation or religious attendance, was included as one of numerous independent variables believed to predict the rate or outcome under consideration. In few of these studies, however, was it the authors' primary intention to examine the health effects of religion, the inclusion of religious indicators from the standpoint of scholarship in the area of religion and health was simply fortuitous. Nevertheless, this accumulation of data yielded many important findings upon review and synthesis.

Differences between religious affiliations as well as significant associations with continuous religion variables (e.g. religious attendance, subjective religiosity) were found for a wide assortment of health outcomes, with respect to both morbidity and mortality. These included cardiovascular disease, hypertension and stroke, uterine and other cancers, colitis and enteritis, general mortality, and overall health status. The reviewers concluded that religion, generally defined, appears to exert a salutary influence. Whether this

review stimulates a renewed emphasis on religion in epidemiology or just indifference is as yet uncertain. However, these significant findings in the "epidemiology of religion" [2], coupled with findings also implicating religious effects on both mental health (see [3, 4]) and general well-being (see [5, 6]), raise an important question for health services research:

Specifically, if there is indeed an empirically verifiable relationship—or more than one such consistent association—between certain religious factors and health (and there appears to be so), then should this not manifest itself in measurable religious differences in the utilization of health care? More specifically, if adherence to a religious regimen has implications for health status, then should this relationship not be manifest in differential rates of physician and hospital visits (a) between the formally attached and unattached (i.e. between the church and unchurched), (b) between adherents of various belief systems (i.e. denominations) which differ in their degrees of rigor in regard to health-related demands, (c) by the extent to which fellowship is experienced (e.g. by the frequency of religious attendance), and (d) by one's status within or commitment to one's particular religious institution (e.g. by whether or not one is a church officer)?

This notion that health care utilization patterns might vary significantly by religious affiliation or practice has, in fact, not escaped the attention of many of the leading scholars within health services research. Andersen and Newman [7] noted that religion represents a "social structure characteristic" predisposing factor which may influence patterns of health care use. Mechanic [8] described how religious background plays an important role in patterns of illness behavior. Donabedian [9] commented on how religious preference may create attractions and barriers

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ers to utilization—that due to a socioorganizational “lack of fit”, services may be rendered inaccessible. Several hospital reports seem to bear this out [10–12]. Furthermore, information on respondents’ religion has been routinely collected in large-scale health care surveys, such as those of CHAS–NORC [13], for quite some time.

REVIEW OF EMPIRICAL FINDINGS

In a recent annotated bibliography of health care utilization studies, the compilers claimed that “[r]eligious preference does not predict the use of health services” [14]. However, in reading the *precis* of many of the studies cross-referenced under ‘religion’, there seemed to be a preponderance of significant findings. This brought to mind comments typical of many epidemiologists, such as, “there has been a paucity of studies examining the epidemiological effects of religion on health” [15], made in the face of literally hundreds of positive findings. With that in mind, pursuit of this review was strongly encouraged.

Mindful of the expert comments noted earlier, we conducted a comprehensive search of the literature which, perhaps surprisingly, turned up over 30 empirical studies of health care utilization published since about 1960 in which one or more religion variables were included as independent variables in certain analyses. However, as with the epidemiologic literature on religion until just recently, these studies have resisted review. While this neglect may in part reflect the view of many medical and health researchers that religion is not an important or influential force in health (see [2]), this explanation fails to account for the presence of so many published findings in the first place. A more likely explanation for this lack of review and synthesis may be that health services researchers are simply unaware of this body of articles. In fact, it may be unjustified to call these articles a ‘literature’. Rather, the sum of these studies may represent an occasional ‘guest appearance’ of a religion variable in the literatures of a variety of health care utilization topics.

Interestingly, aside from religious affiliation (usually operationalized as Protestant vs Catholic vs Jewish) and, on rare occasions, the frequency of religious attendance, few other religious constructs have ever been employed. Furthermore, where religion variables do appear, there tend to be no follow-up questions, important distinctions are lost by lumping many disparate groups under single headings (e.g. theologically liberal Congregationalists and charismatic members of fundamentalist sects would both have to be coded as ‘Protestant’ in the absence of more specific categories), and it is usually left unstated exactly why such data are even collected in the first place. In some cases, such information may have been gathered solely for methodological reasons—that is, as a way of determining the distribution of respondents by denomination or of insuring the homogeneity of particular subgroups of a study (e.g. [16, 17]). In the remainder of these studies, however, the reason for the inclusion of religion variables is much more difficult to ascertain. Rarely are other such studies cited as justification. Perhaps, then, as

with the epidemiologic literature, investigators are simply unaware that a large body of previously published religion-and-health data exists.

In Table 1, a brief summary of these findings is presented. It is interesting to note that the effects of religious factors have been examined in most major areas of health care utilization. These include the utilization of physicians, primary care, dentists, maternal and child health care, family planning services, pediatric care, psychiatric care, ambulatory care, hospital services, preventive services, health care systems, medications, and extended care. As Table 1 indicates, only a handful of these studies has failed to turn up evidence of significant religious effects. Nearly all of these studies have revealed that the utilization of health care varies significantly by patterns of religious affiliation or practice. These studies will now be examined in greater detail.

The earliest study to directly examine the effects of religion on health care utilization appears to be the seminal investigation by Johnson and his associates [18] on the determinants of oral polio vaccine (OPV) acceptance in Florida. Data on religious affiliation were crosstabulated with information on ethnicity and social class, and, overall, Catholics were found to have a lower rate of OPV acceptance than both Jews and Protestants. Black Protestants also had a lower rate than Jews. Interestingly, this pioneering study both avoided zero-order analysis and attended to the need to control for the potentially confounding effects of race and class, something much of the subsequent research in this area has overlooked. This emphasis on *communicable diseases* was also seen in two early reports of participation rates in tuberculosis testing programs. One study found no significant denominational differences [19], while a second did [20]. In this latter study, the likelihood of granting permission for children to receive a TB test was greatest among Jews, followed by Protestants, Catholics, and others.

Another early emphasis in this literature was on *psychiatric care utilization*. The first study in this area was the seminal Midtown Manhattan investigation [21], in which the authors examined denominational differences in the use of psychiatric care at several sites. At private hospitals and in outpatient departments, the utilization rates of Jews exceeded those of Protestants and Catholics, while, at public hospitals, Catholics were the highest users and Jews the lowest. Subsequent studies of psychiatric care utilization of student clinics found higher rates among Jews [22, 23], infrequent religious attenders [23, 24], and subjects with nonreligious friends [24].

The utilization of a variety of *maternal and child health services* has also been evaluated for religious differences. Jewish parents were found to be most likely to seek medical or dental care for their children on referral from a school health program, as were parents who were infrequent religious attenders [25]. In addition, a recent study of pediatric acute care found higher rates of utilization among children of Catholic, Jewish, and highly religious mothers [26]. However, no differences were found by mother’s affiliation in children’s use of prepaid group practice care [27]. Among Blacks, Catholics were more likely than Protestants to use family planning services in the

Table 1 A chronological summary of religious factors in health care utilization*

Author(s)	Religion variable(s)	Health care variable(s)	Significant findings involving religion?
Johnson <i>et al</i> [18]	Affiliation	Polio vaccine acceptance	Yes
Srole and Langner [21]	Affiliation	Psychiatric care utilization	Yes
Yeracanis [20]	Parental affiliation	TB testing program participation	Yes
Schonfeld [19]	Affiliation	Mass TB testing participation	No
Segal [22]	Affiliation	Student psychiatric clinic utilization	Yes
Scheff [23]	Affiliation, attendance	Student psychiatric clinic utilization	Yes
Solon [38]	Affiliation	Private physician, Jewish hospital, and outpatient clinic utilization	Yes
Cauffman <i>et al</i> [25]	Parental affiliation and attendance	Medical care and dental utilization	Yes
Coilver <i>et al</i> [29]	Affiliation, attendance	Prenatal care, postpartum care, and postpartum family planning utilization	Yes
Linn [24]	Affiliation, attendance, and friends' religiosity	Student psychiatric clinic utilization	Yes
Fink <i>et al</i> [30]	Affiliation	Breast cancer screening program participation	Yes
Greenlick <i>et al</i> [44]	Affiliation	Physician and clinic utilization (nonemergencies)	Yes
Mornill and Earrckson [36]	Affiliation	Hospital location efficiency	Yes
Mornill <i>et al</i> [35]	Affiliation	Hospital travel distance	Yes
Abernathy and Schrems [48]	Affiliation	Primary care utilization	Yes
Bashshur <i>et al</i> [33]	Affiliation	Hospital, physician, and dental utilization	Yes
Levenson [37]	Affiliation	Registration for an elderly housing project's HMO	Yes
Weiss [45]	Affiliation	Physician utilization	No
Wan and Soifer [42]	Affiliation	Physician utilization	Yes
Andersen [34]	Affiliation	Denial utilization	Yes
Roghmman [47]	Mother's affiliation	Medication use	No
Straumann [39]	Affiliation	Ambulatory care utilization attitudes	Yes
Wan and Yates [32]	Affiliation	Dental utilization	Yes
Schaefer and Hughes [31]	Affiliation	Maternal and child health utilization	No
Slesinger <i>et al</i> [46]	Affiliation	Preventive care utilization	No
Tessler <i>et al</i> [40]	Affiliation	Ambulatory care utilization	No
Notzon [28]	Affiliation	Family planning utilization	Yes
Tessler and Mechanic [27]	Mother's affiliation	Pediatric group practice utilization	No
Nhadi and Kabai [41]	Affiliation	Western and native Nigerian medical care utilization	Yes
Horwitz <i>et al</i> [26]	Mother's affiliation and religiosity	Pediatric acute care utilization	Yes
Levin and Markides [43]	Attendance, religiosity	Physician utilization	Yes

*See text for descriptions of findings

past 5 years [28], although, after delivery, Protestants were more likely to utilize these services than Catholics [29]. Infrequent religious attenders were greater users of postpartum family planning services, and, among frequent attenders, Protestants exceeded Catholics in prenatal care use [29]. A study of participation in a breast cancer screening program found greater participation among Jews than Catholics [30]. Finally, there has been one report of negative findings for religious differences in MCH utilization [31].

Studies of religious differences in *dental utilization* show consistently higher rates among Jews. This has been found in an analysis at the household level [32], in a study of the propensity to travel long distances to receive care [33], and in a study controlling for a variety of other related factors [34].

A large group of studies has examined religious differences in *hospital, health program, or health system utilization*. Jews were more likely than Catholics who were more likely than Protestants to travel great distances to reach hospitals [33, 35]. This may be because Jews and Catholics tend to evaluate the distance to non-Jewish and non-Catholic hospitals, respectively, as being much farther away than they are in actuality [36]. Jews were also found to be most likely to register for an elderly housing project's health maintenance organization [37] and to use outpatient clinics and Jewish hospitals [38]. Jews also rated economic criteria lowest in importance in determining the use of ambulatory care [39], although there do not appear to be significant affiliational differences in actual rates of use [40]. Finally, in a Nigerian study [41], Muslims were most likely to use both Western and native medicine, followed by Christians and adherents to more indigenous forms of worship.

Another large group of health services studies of religious effects has examined *physician utilization*. The highest rates of utilization have been found in Jews [38, 42] and, among older people, in the highly religious [43]. Studies of Protestant-Catholic differences are inconclusive, with findings dependent upon the type of medical problem responsible for utilization [44]. Negative findings have been reported for affiliational differences in physician use, both in general [45] and for primary-preventive visits [46]. There are also negative findings for religious differences in medication compliance [47]. Finally, one study found that only among Buddhists and members of Christian sects (Mennonites, Seventh-day Adventists, Christian Scientists) was the use of primary care predicted by income, age, and residency duration [48].

In sum, despite this preponderance of significant findings, it is extremely difficult to isolate in this grabbag of studies a single, generalizable conclusion about how religion and the use of health care are related. Perhaps the only semi-consistent finding here is that Jews tend to use certain forms of health care more frequently than Gentiles. This would certainly conform to popular or folk belief. On the other hand, in most of the studies reviewed here, rarely were the effects of potentially mediating or effect-modifying factors controlled, and, further, the measurement of religion was typically unsophisticated. As with the epidemiologic literature on religion, even a consis-

tently significant religious effect can be difficult to interpret in the face of serious epistemological, analytical, and measurement-related problems [2]. In the case of health care utilization, we hypothesized earlier that one might expect religious effects to manifest as significantly different rates of health care use by church membership status, religious affiliation, religious attendance, and holding a church office. For the most part, however, these studies have neither conceptualized nor operationalized religion in ways such that answers here may be forthcoming.

Such criticism, of course, should not be overstated, as it must be kept in mind that few of these studies were designed primarily to determine the effects of religion on health care utilization. Nevertheless, just because most of these studies were not specifically intended to investigate the effects of religion, this does not imply that there are not demonstrably more meaningful and fruitful approaches to measuring the effects of religion in the sociomedical sciences. Levin and Vanderpool [2] recently provided a primer on investigating independent religious effects for social epidemiologists, and a couple of the issues they raised are directly applicable to studies in health services research.

First, to the extent to which it can be characterized at all, religion is best conceived as a multidimensional phenomenon, or, better, a metaphenomenon. That is, religion should be thought of by social epidemiologists and health services researchers as not just another construct—co-equal to, say, social support, type A, hardiness, or occupational mobility—or even as a set of related constructs—such as access, stress, or well-being—to be plugged into causal models as if some sort of amorphous 'religion' existed as a Platonic form or a latent, higher-order, underlying variable. Rather, religion constitutes more a domain of investigation—such as history or sociology. Religion variables can be constructed, then, to tap either collectively or individually experienced phenomena, and at the latter level can address beliefs, attitudes, values, behaviors, subjective experiences, thoughts, etc., each of which may interrelate with the others in a complex and perhaps undecipherable maze of associations which themselves may vary by religious or religioethnic identification.

For example, an item inquiring about the frequency of religious attendance may not necessarily measure some innate 'religiosity' or religious commitment, but, instead, might in actuality tap a combination of influences including social support, functional health, socioeconomic status, and any manner of psychodynamic motivations [2, 49, 50]. Furthermore, this nexus of phenomena rendering religious attendance a proxy indicator might vary between Jews and Gentiles, between Catholics and Protestants, or between different types of Protestants, whether divided theologically (e.g. liberals vs conservative evangelicals), experientially (e.g. mainstream vs charismatic), denominationally (e.g. Assemblies of God vs Lutherans), or within denominations (e.g. National Baptist Convention of America vs Southern Baptist Convention). Catholics, too, may exhibit health-related differences on the basis of ethnicity (e.g. Irish vs Italian Catholics), as in the seminal work of Zborowski [51] and Zola [52]. These possibly

cultural differences may also be reflected in differing motivations for attending religious services regularly

This last point may be moot here, though, as relatively few health care utilization studies have examined the effects of religious attendance, which, in health studies of any type, is usually not measured on a broad continuous scale. Furthermore, as mentioned, the conventional measures of other aspects of religion used in these studies may serve to obscure rather than highlight religious effects [53]. Needless to say, more substantive theorizing on the *nature* of a significant religious effect (i.e. would it represent a wholly 'secular' influence or would it suggest the operation of some sort of transcendental effect?) has not yet occurred in any of the fields in which religious factors have been empirically examined—social epidemiology, health services research, and social gerontology. But, then, such questions are outside of the domain of social science, as it is typically conceived.

Second, as Levin and Vanderpool [2] suggest, meaningful associations between a health-related outcome and a religion variable can obtain only if the religious indicator taps a construct or experience or phenomenon which is shared by the entirety of the population, sample, or subsample under investigation. For example, an investigator should not assume that, say, religious attendance is equally meaningful a variable for all or most subjects in the same way as age or self-rated health or socioeconomic status. That is, while the subjective or symbolic value of these indicators may vary somewhat in certain circumstances, everyone, it seems, *has* these (an age, a health status, a social-class standing), regardless of how they score. For religion variables, however, a particular concept common to certain religions may not even 'exist' within the emic framework of other religions (e.g. an item on the frequency of glossolalia used as an indicator of religious commitment in a sample of Jews and Bahais). Or, as in the case of religious attendance, a concept may indeed 'exist' in most religions yet be imbued with such drastically divergent meaning across religious subgroups as to be of questionable value as an indicator of any higher-order construct, whether 'religiosity' or anything else.

For example, a common scale measuring the frequency of attendance at religious services for use with Roman Catholics (among whom weekly attendance is required of regular communicants) and Secular-Humanistic Jews (a new movement in which many Jewish holidays are not even celebrated, and those that are have been completely desacralized)—much less with Zen Buddhists or members of Holiness sects or devotees of the Shango religion—clearly would be of questionable validity. It would be extremely difficult—perhaps impossible—to extract meaning from associations with religious attendance when the scale of this variable and thus the meaning of the actual scores seem to be so variant across groups of subjects.

Aside from issues related to measuring religious practice or commitment, an entirely separate set of problems arises in interpreting health- or health-care-related differences across groups separated by re-

ligious identification. For example, Seventh-day Adventists and Mormons are at extremely low risk of morbidity and mortality almost across the board relative to other religious groups. However, these groups are characterized by behaviorally strict health-related life styles, by higher-than-average rates of intermarriage, by strong social support networks, by belief systems and theologies fostering high degrees of personal responsibility, by many avenues, such as fellowship, services, and common aims, which provide for the easing of tension and dread and which otherwise offer psychodynamic release, and, by faith in God's blessing of an observant people.

Religious affiliation, then, masks, or, rather, constitutes, an array of characteristics, functions, and processes which are known to be associated with health health-related behavior, heredity, social support, internal locus of control, stress-buffering, and positive mental attitude, among others [49]. In social-scientific terms, each of these factors must be 'controlled for' or otherwise modeled before we can ever understand the nature of significant religious differences, much less attribute them to super-empirical or 'supernatural' mechanisms or pathways. Of course, not many social scientists are likely to make this latter attribution, yet, as Levin and Markides [50] note, many casually tend to attribute such effects to social support almost by default without realizing that other explanations are possible.

While there is no easy resolution for all of these issues, health services researchers interested in exploring the effects of religion can take several relatively painless steps which may help to mitigate the problems encountered in previous studies. First, since, as discussed, uncontrolled analyses of religion are not particularly useful for drawing conclusions regarding the presence of significant religious effects, the pertinent aspects of religion should be differentiated and modeled alongside of other determinants of health care utilization. Second, where the investigator has minimal exposure to the study and/or measurement of religious phenomena, it would be wise to consult with sociologists or psychologists of religion, or with scholars in the fields of religious studies. Health services research seems to have met with diminishing returns from continuing to 'wing it' in this regard. Third, researchers should forge through their trepidation over the apparently marginal status of religion in health-related research or over the appearance to the uninitiated that some sort of implicitly mystical or 'supernatural' hypothesis drives their work. While such ideas are well worth investigating, imputing to significant effects for religion variables an explanation founded solely in such otherworldly mechanisms is a form of reductionism not even encountered in arcane mystical texts. Finally, researchers should recognize that, far from there being a dearth of religion research in health, a literature of hundreds of empirical studies exists in epidemiology, health services research, gerontology, biomedicine, and behavioral science. These studies need to be exhumed and mined for consistent findings which might suggest hypotheses for future research. In this regard, religion should be treated no differently than any other domain of independent variables.

NEW FINDINGS FROM APPALACHIA

To follow up on this intriguing body of findings and better attend to the operational issues just raised, we present some additional results using data collected as a part of an evaluation of a self-care health education project implemented in an impoverished coal-mining region of Appalachia. Nearly 1000 adults from West Virginia took part in this program, which included six cycles of participants and a control group and which lasted from the Fall of 1978 until the Spring of 1981. Further descriptions of both the sample ($N = 909$) and intervention are available in greater detail elsewhere [54-56].

Of special relevance here is the extreme heterogeneity of religious expression despite the fact that this region is united by both its industry (coal-mining) and social environment (poverty, severe cyclic unemployment, social isolation, and political neglect). Mainstream religious denominations coexist with a wide array of enthusiastic sects, including a church where the devout obey the scriptural call to 'take up serpents' as a ritual part of worship. Religion, while practiced perhaps no more than in other regions, is a constant focus of attention, to the extent that seemingly trivial differences (from an etic perspective), such as the amount of water used in a baptism, become magnified and subjected to heated debate between '10-gallon' and 'half-pint' Baptists. Perhaps because of so few other distinctions in this region, religious variations loom so large. This pervasive and continuous attention to religion and religious distinctions leads us to surmise that if religious differences in health-care-seeking are to be documented anywhere, it is here.

For this brief analysis, four indices of *health care utilization* were used: frequency of physician visits ("How frequently do you see a physician?", coded 0 = less than once a year, 1 = once a year, 2 = 2 or 3 times a year, 3 = 4-6 times a year, 4 = once a month, 5 = more than once a month), length of time since last physician visit and length of time since last hospitalization ("When was the last time you saw a physician?" and "When was the last time you were hospitalized?", both coded 1 = less than 3 months ago, 2 = between 3 and 6 months ago, 3 = between 7 months and a year ago, 4 = between 1 and 1.5 years ago, 5 = between 1.5 and 2 years ago, 6 = more than 2 years ago), and length of stay during last hospitalization ("How many days were you in the hospital?"). Four measures of *religion* were used, allowing us to explore each of the four hypothesized loci at which we suggested religion might conceivably influence utilization. These items included church membership ("Do you belong to a church?", coded 0 = no, 1 = yes), religious affiliation ("What is your religious preference?", open-ended, with over a dozen responses collapsed for analytical purposes to Baptist, Methodist, Presbyterian, Roman Catholic, Episcopalian, Mormon, Pentecostal/Holiness, and none), religious attendance ("How frequently do you attend church?", coded 0 = less than once a month or never, 1 = once a month, 2 = every other week, 3 = every week, 4 = more than once a week), and holding a church office ("Are you an officer of your church?", coded 0 = no, 1 = yes).

Table 2. Gross* and net† effects of religion variables on health care utilization indices

Religion variable	Frequency of physician visits			Length of time since last physician visit			Length of time since last hospitalization			Length of stay during last hospitalization		
	r	b	SE	r	b	SE	r	b	SE	r	b	SE
Church membership	0.06	0.35	0.50	-0.07	-0.30	0.18	-0.04	0.34	0.21	-0.02	-0.60	0.84
Religious attendance	0.11‡	0.03	0.09	-0.06	0.01	0.03	0.06	-0.04	0.04	-0.05	0.19	0.14
Holding a church office	-0.00	0.24	0.38	0.04	0.05	0.13	0.14‡	0.40‡	0.16	-0.05	-1.92‡	0.62

*Zero-order Pearson correlation coefficients
 †Unstandardized multiple regression coefficients (controlling for the effects of age, sex, race, education, health status, chronic disease status, health locus of control scores, and the other three utilization indices)
 ‡ $P < 0.01$

Table 3 ANOVAs of differences in health care utilization indices across categories of religious affiliation

Religious affiliation	Frequency of physician visits		Length of time since last physician visit		Length of time since last hospitalization		Length of stay during last hospitalization	
	Mean	<i>n</i>	Mean	<i>n</i>	Mean	<i>n</i>	Mean	<i>n</i>
Baptist	2.83	306	2.41	285	4.65	282	9.43	268
Methodist	2.65	132	2.50	131	4.78	127	6.33	122
Presbyterian	1.37	19	1.83	18	5.05	19	4.58	19
Roman Catholic	1.55	31	2.56	27	4.93	30	5.48	29
Episcopalian	1.15	13	1.85	13	4.92	13	5.23	13
Mormon	2.04	27	2.33	27	4.19	26	5.33	21
Pentecostal/Holiness	3.34	148	2.33	145	4.49	142	6.09	128
None	0.69	13	2.92	13	3.62	13	3.50	10
Grand mean	2.70		2.40		4.63		7.44	
SD	4.39		1.60		1.96		11.51	
<i>N</i>	689		659		652		610	
<i>F</i>	1.76		0.91		1.17		2.18*	

**P* < 0.05

Analyses were conducted in two parts. First, we tested for significant religious effects on the utilization of health care by regressing each of the four utilization indices onto church membership, religious attendance, and holding a church office. Using listwise deletion of missing values, the effects of several 'predisposing' and 'need' variables were controlled. These included age, sex, race, and education, along with health status, chronic disease status, the other three utilization indices, and scores on the multi-dimensional health locus of control (MHLC) scales [57]. The MHLC has been significantly related to both health and religion in this sample [58]. Second, we tested for significant differences in utilization across denominations by conducting ANOVAs on the denomination means of each of the utilization indices. Both sets of analyses were conducted in SAS, and results are shown in Tables 2 and 3.

In Table 2, both gross and net effects of religion on utilization are presented. There were two significant zero-order correlations: the frequency of religious attendance was related to the frequency of physician utilization, and holding a church office was associated with a lengthy duration since the previous hospitalization. At the net level, the religious attendance finding is explained away, the church office finding remains, and an inverse suppressor effect is uncovered for holding a church office on the length of stay during the last hospitalization. In sum, neither belonging to nor attending church appear to have a net effect on physician or hospital utilization. Furthermore, the salutary effects for holding a church office might derive from a sort of selection bias, in that perhaps only the sturdiest and most energetic congregants become deacons, elders, ushers, etc.

In Table 3, only for length of stay during last hospitalization was there a significant difference in means across denominations. Baptists had the longest stays and the unaffiliated had the briefest. While religious differences in the other three utilization indices were not significant, this may be due in part to the small number of subjects in some denominations coupled with large standard deviations. Nonetheless, there does appear to be some denominational variation in the means of these indices. For example, members of higher-socioeconomic-status (SES) denominations (Presbyterians, Episcopalians, Roman Catholics) seem to have had fewer physician

visits than members of lower-SES denominations and sects (Baptists, Pentecostal/Holiness adherents). However, it is uncertain whether these results are attributable to any intrinsically meaningful effect related to a religious personality-type or ethos, since physician utilization is known to vary inversely with SES [59]. Indeed, controlling for education and age reduced the finding for length of stay during last hospitalization to insignificance (not shown in table).

In sum, while several significant religious differences have been revealed, once again they do not add up to convincing evidence of a consistent, generalizable trend. Furthermore, even where significant findings are found, it appears that they may be explainable by social or demographic factors and that a consistent psychosocial or psychodynamic effect of religion on utilization—much less some sort of residual superempirical or 'supernatural' influence—is not suggested by these data.

CONCLUSIONS

The results of the literature review coupled with the additional findings presented here are paradoxical, to say the least. On the one hand, the literature seems to show clearly that patterns of health care utilization vary by religion, a finding supported to some extent by data from Appalachia which show several significant religious effects. On the other hand, as discussed, there is some reason to believe that these findings may be spurious (although it is impossible to say with certainty), and, regardless, religion and the use of health care do not appear from these and previously published data to be related in a meaningfully patterned way.

Nevertheless, despite the absence of a theoretically coherent trend in these admittedly limited data, the apparently unpatterned denominational differences found in the use of health care may be of considerable significance to public health educators, planners, and administrators, if not to health services researchers. That is, even if religious orientation does not directly determine the use of health care, it may still be a critical factor insofar as it contributes to the willingness of individuals to engage in certain health-related practices (e.g. self-care, hygienic regimens) or hold certain health-related beliefs or attitudes which

are causally antecedent to utilization. In other words, the Kosher diet of Orthodox Jews, the *Lebensstil* of Mormons and Seventh-day Adventists, the history of mutual aid and self-help among Black Baptists and Methodists, and every other disposition concerning preventive practices, attitudes toward physicians and health care, reactions to pain, and beliefs about the relation of body to Spirit—dispositions which vary by religious affiliation [60]—may all provide avenues by which religion exerts indirect effects on utilization, whether preventive, curative, or palliative.

Another important consideration in this line of research involves the ideological assumptions underlying a search for determinants of health care utilization in intrapsychic factors such as an individualistically-defined 'religion' instead of in extrinsic, socioenvironmental factors—e.g. those outlined in Penchansky and Thomas' [61] multi-dimensional operationalization of access. Ironically, these latter types of determinants could reasonably include collectively experienced, more structurally defined religious barriers or enablers which, because they are not psychologically defined as traits, are not 'seen' by researchers and thus not investigated [62]. In most studies of health care use in which analyses are conducted according to Andersen's [63] paradigmatic behavioral model, 'predisposing' factors (such as individual religiosity) are found to contribute very little to explanations of variance relative to 'need' (health-related) factors and characteristics of the prevailing health care system. Therefore, should the nature of the relationship between health care use and individual religious orientation and expression finally be clarified, health services research may have advanced only a short distance toward understanding why people do and do not utilize health care.

Perhaps, however, this is too critical a stance. After all, as shown, religion, as conceptualized in health services research—despite its poor operational engagement and its overall explanatory weakness—does seem to be a significant, if only semi-consistent predictor of health care utilization. This paradoxical set of considerations leads to two general and somewhat opposing recommendations.

First, from the standpoint of efforts seeking a meaningful understanding of the relation(s) between religion and the use of health care, the sole use of conceptually unsophisticated indicators of an undefined 'religiousness', such as religious attendance and trichotomous affiliation measures, is a less than fruitful practice that should probably be terminated. That is not to say that these are not useful measures, they are. Rather, they should not be expected to represent content-valid indicators tapping the full range of the concept of religion. If health services researchers choose not to pursue more sophisticated analyses of religious effects, than perhaps the study of religious factors in the use of health care should be discontinued.

Second, the state of this line of research very much resembles the epidemiologic and gerontological literatures on religion of several years ago—unreviewed, unsynthesized, operationally unsophisticated, devoid of theoretical direction—in short, going nowhere. However, once multiple and multidimensional re-

ligion indicators began to be employed and once theoretical development [64] and hypothesis-testing [50] began in earnest, important conclusions began to be reached [3], theoretical models were developed [53], and new directions for research unfolded. For these reasons, should the effects of religion be deemed worthy of further investigation, then health services researchers should realize that there are many useful measures of religion that can be employed for their purposes. The sociology and psychology of religion are replete with psychometrically-validated scales which tap a myriad of religious dimensions [65–67], two cases in point being the seminal five-dimensional scale of Glock and Stark [68] and its subsequent adaptations [69], and the scales [70, 71] derived from Allport's [72] two-part definition of religiosity. Such measures are undoubtedly of greater value than the 'default' measures of affiliation and attendance which may largely represent proxies for SES and functional health [73–75], respectively.

In short, if health services researchers are indeed interested in uncovering meaningful, independent religious effects, then the conventional, uninformed way of treating this issue must change, there is little reason to believe that the effects of religion—however defined or measured—have been satisfactorily investigated in this field. This characterization may seem unduly harsh, but it is not clear that dozens of additional studies providing zero-order comparisons of, say, the frequency of private dental visits between Jews and Gentiles will represent much of a substantive contribution either to the study of religion and health or, more importantly, to health services research.

Finally, as much as empirical researchers like to avoid such things, the search for consistent religious factors in health care use must not occur in a theoretical vacuum. In particular, two questions must initially be asked. First, *should* there actually be any relationship between religion and the use of health care? This is not the difficult question, most scholars writing in this area from the sociomedical sciences [2, 51] and religion [76] would say, "Yes." Therefore, the next step should be the development and testing of relevant theoretical models. An example is provided in Fig. 1. This model's substantive content is not at issue here, and so will not be discussed further. Rather, the posing of such a model exemplifies, in a simple form, just what is now required of researchers in this area.

Second, and more to the point, assuming religion and health care use can be related theoretically, is this relationship necessarily a salutary one? That is, must higher levels of religiosity necessarily be associated with higher levels of preventive care utilization and lower rates of hospitalization? Is it not untrue to the major religious traditions to assume that (a) 'religion' is a singular, monolithic, unidimensional entity, and (b) it necessarily has a positive influence on health? Alongside of religiously dictated codes of hygiene, there exist attitudes which view disease as purificatory and suffering as sacrificial. Religious experience in both the West and East is replete with examples of how the tension between Spirit and flesh is often resolved by renouncing the latter for the sake of the former. Only rarely, it seems, do scientists

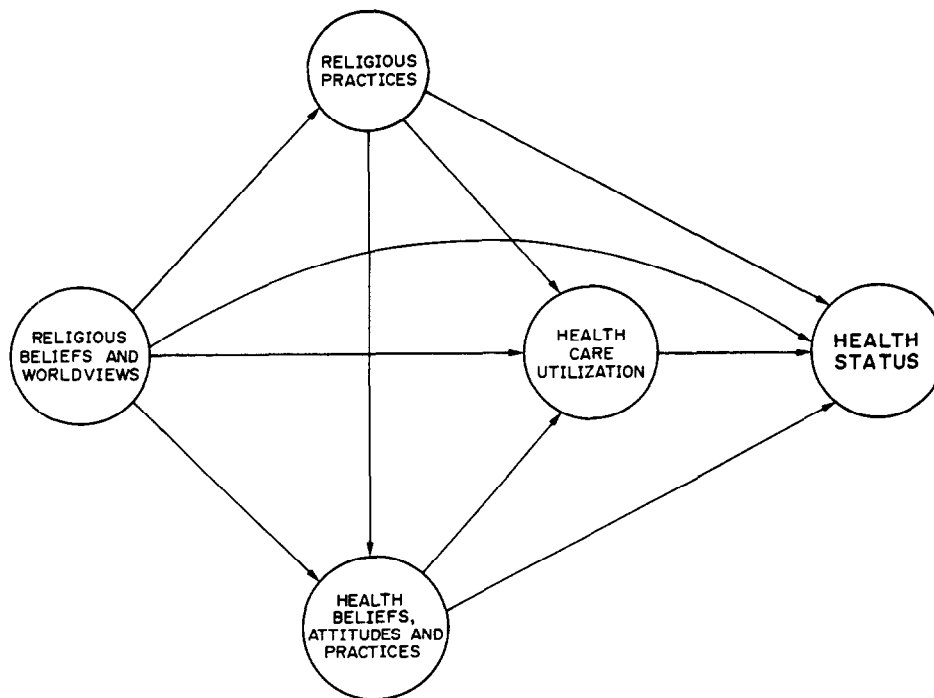


Fig 1 A simple, fully recursive model relating religious factors to health care and health

ponder the possibly deleterious effects of religion upon health [77]. Most likely, some aspects of religion are salutary and keep rates of health care use down (or, in some instances, up), while other aspects of religion are harmful and thus elevate utilization (or, in some cases, depress it). Furthermore, this phenomenon likely varies by religious affiliation [78]. In answer, then, to the question, "Is there a religious factor in health care utilization?" one must reply with an unqualified, "Sort of." If this area of health services research is to be advanced, then clearly much preliminary work remains to be done.

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