

Faith and Health



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RELIGIOUS INVOLVEMENT AND HEALTH OUTCOMES IN LATE ADULTHOOD

*Findings from a Longitudinal Study
of Women and Men*

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In recent decades social scientists have learned a lot about the relation between religiosity and health outcomes. Several studies document either a direct or an indirect effect of religious participation on various indicators of physical and mental health. As noted by the authors of one recent review of research on the religion–health connection, notwithstanding variations across studies, there tends to be statistically significant salutary effects of religious involvement on health (Ellison & Levin, 1998). Although some readers may chafe at the incorporation of what might appear to be a nonscientific variable into analyses of medical processes, it should be remembered that social scientists treat religious beliefs and practices as external social facts (Durkheim, 1912/1976). In this view, religion is a sociocultural phenomenon subject to empirical investigation in the same way as are other everyday cultural processes. Social scientists are not interested in establishing the rational validity of beliefs; rather, they seek to understand the contexts in which discrete beliefs and practices develop and their social and psychosocial implications.

The relation between religion and health is complicated and there is still a lot of uncertainty as to the specific ways and life contexts in which religious involvement matters. The complexity is in part due to the multi-dimensional nature of the two concepts being investigated. Health status and religious involvement, moreover, are not stable over the life course. Rather, multiple shifts are possible in a person's ranking on either or both variables at any given stage in the life cycle. Studying the link between health and religion therefore involves, as Idler (1995) has pointed out, interrelated processes of aging and shifts in health and religious involvement.

This chapter uses longitudinal data from the intergenerational studies established at the Institute of Human Development (IHD), University of California, Berkeley, in the 1920s. We use data spanning early adulthood and old age from a random sample of men and women to examine the relation between religiosity and health in late adulthood. Because health and religious participation vary over the adult life course, long-term longitudinal research designs, as others have noted (e.g., Ellison & Levin, 1998; Markides, 1983), are necessary to illuminate the relation between these two constructs. A major strength of the IHD study is that it has followed the same people over virtually their entire life course, from adolescence to their late 60s and mid-70s, yielding self-report data on religion and health for the study participants at four points in adulthood.

Several studies have documented the positive impact of religious beliefs and church attendance on health, adaptation, and life satisfaction among the elderly (e.g., Blazer & Palmore, 1976; Hunsberger, 1985; Idler, 1987; Idler & Kasl, 1992; Levin, Markides, & Ray, 1996; Markides, 1983; Morse & Wisocki, 1988). Most of these studies, however, are either cross-sectional (e.g., Levin, Taylor, & Chatters, 1994) or short-term longitudinal, that is, spanning less than 12 years (e.g., Idler & Kasl, 1992; Markides, 1983; Levin, et al., 1996; Markides, Levin & Ray, 1987). We do not know, therefore, whether the positive relation observed is due to the late-adulthood effect of religiosity on health or of changing health status on religiosity or whether in fact the effect of religiosity is one that can be predicted from religiosity at adolescence or in early or middle adulthood. This is also the case with the first and second Duke University Longitudinal Studies of Aging. The median age of the sample in the first study (Blazer & Palmore, 1976) was 70.8 years at the time of the first round of interviews (1955-1959), and the sample in the second study ranged in age from 55 to 80, with a mean of 67 years (Koenig, Siegler, & George, 1989; Koenig, Siegler, Meador, & George, 1990). We thus lack firsthand prospective data concerning the status of the participants' health and religious involvement prior to late middle adulthood.

In addition to the IHD study's longitudinal design, the composition of the sample population is advantageous to understanding the complexity of the relation between religion and health. The sample was randomly drawn; its population comes from the West, a region of the country that tends to be underrepresented in studies of health and religion; and its participants are relatively healthy. Many existing studies use purposive rather than random samples. Some studies, for example, rely on volunteers (e.g., Blazer & Palmore, 1976) and people selected from community and senior centers (e.g., Koenig, Kvale, & Ferrel, 1988; Morse & Wisocki, 1988) or rehabilitation clinics (Idler, 1995). These sampling biases clearly attenuate the generalizability of the subsequent analyses of the relation between religiosity and health. There is also a tendency, especially on the part of medical researchers, to focus their investigations on nonhealthy populations and to, for example, tie postsurgical recovery rates to the patients' concurrent religious practices without paying attention to differences in patients' long-term, presurgery religious habits (e.g., Oxman, Freeman, & Manheimer, 1995). A further source of bias is the fact that many studies rely on samples drawn from Southern communities (e.g., Koenig, 1997; Larson et al., 1989). The greater religiosity, denominational homogeneity, and theological conservatism of the South relative to the West or to the Northeast may accentuate the positive relation observed between religiosity and various physical and mental health outcomes in Southern populations than in communities in which the public valence of religion is less pronounced.

We use the IHD data to investigate the concurrent implications of religious participation on health in late adulthood and to explore longitudinally whether religious involvement in early and middle adulthood bolsters health and well-being in later life. Most of the studies conducted on religion and health focus on physical health and on mental health operationalized by indicators of depression, adjustment, and affective and cognitive dimensions of life satisfaction (e.g., Courtenay, Poon, Martin, Clayton, & Johnson, 1992; Ellison, 1991; Ellison, Gay, & Glass, 1989; Koenig, 1997; Levin et al., 1996; Markides et al., 1987; Morse & Wisocki, 1988). In this study, we broaden the definition of mental health to include additional measures of social adaptation such as generativity, ego integrity, and social functioning. After we first describe our sample, we devote the remainder of this chapter to the presentation and discussion of our results. We begin by briefly discussing our findings on the study participants' patterns of religious involvement across the life course (Dillon & Wink, 2000). Following that, we present concurrent and longitudinal data on the relation between religiosity in late adulthood and (1) physical health, (2) mental health narrowly defined as life satisfaction, and (3) mental health broadly defined to include various measures of psychosocial adaptation.

SAMPLE AND DATA

The data come from the intergenerational studies established by the Institute of Human Development (IHD) at the University of California, Berkeley, in the 1920s. The original sample was a randomly generated representative sample of newborn babies in Berkeley, California, in 1928–1929 and of preadolescents (aged 10–12) selected from elementary schools in Oakland, California, in 1931 (and who were born in 1920–1921). Both cohorts were combined into a single IHD study in the 1960s. The current sample ($N = 154$) is thus differentiated by cohort: 36% born in the early 1920s ($N = 56$) and 64% born in the late 1920s ($N = 98$). The sample is also differentiated by gender: 52% are women ($N = 80$) and 48% are men ($N = 74$). All but two of the participants are white. Participants were studied intensively in childhood and adolescence and have been interviewed in depth four times in adulthood: in *early adulthood* (30s; interviews conducted in 1958–1959), *middle adulthood* (40s; 1969–1970), *late middle adulthood* (mid-50s/early 60s; 1982), and most recently in 1997–1999. At the last interview phase, the participants were in their late 60s or mid- to late 70s (*late adulthood*). At each interview phase the participants also completed self-administered questionnaires.

The current sample size ($N = 154$) represents 81% of the original participants who are available for follow-up (i.e., who are still alive and could be located). Overall, the attrition rates for each follow-up study conducted have been comparatively low (see Clausen, 1993; Wink & Dillon, in press). Attrition analyses comparing those individuals who participated in the latest follow-up (1997/1999) with those who participated in the prior assessment (1982) and who declined to participate in the latest study phase showed few differences on key social and personality variables. The two groups did not differ in health, well-being, extraversion, and impulse control. The main difference was greater introversion among participants who declined to participate in the 1997–1999 follow-up study.

CHARACTERISTICS OF THE SAMPLE IN LATE ADULTHOOD

Of the 154 participants interviewed in 1997–1999, 71% were living with their spouses or partners, 5% were living with other relatives, and 24% were living alone. Women were significantly more likely than men to be living alone. One-third of the sample (33%) rated their life satisfaction as very high, and a further 57% rated it as moderately high. The median household income for the sample was \$55,000, and the median value of the home was \$225,000. Gender or cohort did not differentiate the economic status of the

household. The majority of the sample are Protestant in religious origins (69%), and 22% come from Catholic family backgrounds. Eight percent of the respondents grew up in nonreligious families, and two (1%) of the participants grew up in Jewish households. In late adulthood, fifty-six percent of the study participants said that religion was important or very important in their lives.

RELIGIOSITY

Religiosity Measure

The multidimensional nature of religious belief and behavior is well established. In assessing religiosity in the IHD study, we had to take into account the fact that the data came from assessments conducted at different time periods. Although the study participants were asked about religion at each interview, there was some variation in the specific questions asked from one interview time to another. At Adult Time 1 (1958–1959), the older cohort were asked open-ended questions about the place of religion in their lives, their church attendance habits, and their beliefs about God and the afterlife, and the younger cohort were asked to talk about their religious attitudes, beliefs, and practices. Following the merger of the two cohorts into a single study, at Adult Time 2 (1969–1970) and Adult Time 3 (1982), all participants were asked about church membership and attendance, attitudes toward religion and their beliefs about God and the afterlife. The interview at Adult Time 4 (1997–1999) contained several detailed questions on religion. Respondents were asked open-ended questions about their religious affiliation, church attendance, spiritual practices (e.g., meditation, reading), and experiences, and beliefs about God and life after death (see Dillon & Wink, 2000).

The inconsistent use of different questions in the IHD study means that we did not have a straightforward indicator of church attendance or of strength of belief in God. At each of the assessments, however, it was possible to rate the *importance of religion* in the lives of the participants as reflected by either their attendance at a place of worship or by the centrality of religion in their lives or both. Therefore, the religiosity of the study participants at each of the four assessments conducted in adulthood was coded using a 5-point scale ranging from a low of 1 (religion not important in the life of the participant) to a high of 5 (religion central to the life of the participant). More specifically, a score of 1 meant that religion played no part in the life of the individual, as indicated by an absence of church attendance and/or private prayer and/or by an explicitly stated lack of belief in God or the afterlife. A score of 2 was given if religion played a peripheral or marginal role, as reflected by sporadic attendance at a place of worship (a cou-

ple of times a year at most), occasional prayer, and/or uncertainty about the existence of God or the afterlife. A score of 3 indicated that religion had some importance for the participant, as reflected in occasional (e.g., monthly) church attendance, private prayer, and belief in God and the afterlife. The person, however, did not see religion as playing a central role in making sense of his or her life. A score of 4 indicated frequent church attendance (weekly or almost weekly); belief in God and the afterlife and/or religion played an important role for the person in making sense of his or her daily life. A score of 5 indicated frequent church attendance; belief in God and the afterlife, and/or religion played a central role for the respondent in making sense of life.

Two trained coders used this 5-point scale to rate independently the importance of religion for every participant for whom we had data across each of the four assessments in adulthood. The ratings were based on the interview segments that contained open-ended questions on religion and that were photocopied and assigned a discrete, randomly generated number that did not identify the participant or the year in which the interview was conducted ($N = 149$ participants times 4 assessments conducted in 1958–1959 [30s]; 1969–1970 [40s]; 1982 [mid-50s and early 60s]; and 1997–1999 [late 60s and mid-70s]). The correlations between the ratings of the two coders ranged from a low of .87 for late middle adulthood (mid-50s and early 60s) to a high of .94 for late adulthood (late 60s and mid-70s). The kappas ranged from a low of .63 for late middle adulthood to a high of .69 in early adulthood.

A comparison of scores on our measure of religiosity in late adulthood with participants' self-reported answers to the Duke Religious Index (DRI; Koenig, Parkerson, & Meador, 1997) showed that they were significantly intercorrelated. Scores on our measure had an average correlation (for total sample and for men and women) with the DRI self-reported church attendance of .87. This strong correlation indicates that our religiosity measure is virtually indistinguishable from the DRI measure of church attendance.

Changes in Religious Involvement over Time

Table 4.1 displays the intercorrelation between scores on religiosity for the 149 participants for whom we had data across all four adult time periods. The correlations ranged from a low of .67 between religiosity in early (30s) and older (late 60s and mid-70s) adulthood to a high of .82 between religiosity in late middle and older adulthood. This means that participants in our study tended to preserve their rank ordering on religiosity over the course of adult life. That is, those individuals who tended to score high on the measure of the importance of religion in early adulthood also tended to score comparatively high on this measure at other time periods.

TABLE 4.1. Rank Order Stability of Religiosity across Four Age Periods

Age of participants	Religiosity		
	2	3	4
30s	.75	.68	.67
40s		.82	.80
Mid-50s and early 60s			.82
Late 60s and mid-70s			—

Note. *N* = 149. All correlations significant at the .001 level or below.

Our sample showed significant mean group changes in religiosity over the life course. As shown in Figure 4.1, the importance of religion decreased significantly between early (30s) and middle (40s) adulthood for women. Men retained a relatively low level of religious involvement throughout the first part of adult life. The importance of religion increased significantly for all the participants between late middle and late adulthood (Dillon & Wink, 2000). In sum, although the men and women in this study tended to preserve their rank order in terms of the importance of religion in their lives, the sample as a whole showed a U-shaped trajectory in terms of their mean scores on religiosity across the adult life cycle.

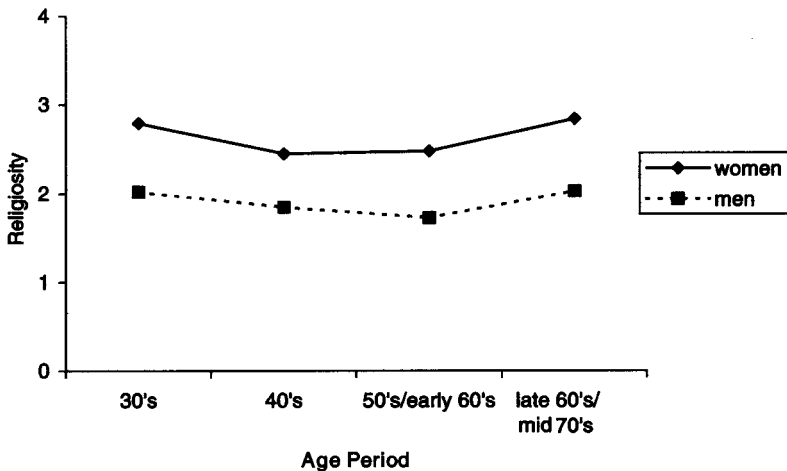


FIGURE 4.1. Mean levels of religiosity across four age periods for women and men.

RELIGIOSITY AND PHYSICAL HEALTH

In recent times, the relation between religion and physical health and mortality has been the object of much empirical investigation by both social scientists and epidemiologists (see Ellison & Levin, 1998; Hummer, Rogers, Nam, & Ellison, 1999; McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000; Thoresen, Harris, & Oman, Chapter 2, this volume, for overviews). Notwithstanding diversity in conceptualization, sample populations, and methodological approaches used, many studies highlight the relevance of religion to the understanding of physical health outcomes. On closer examination, however, it is evident that there is still much ambiguity as to the pervasiveness, nature, and direction of this relationship. Some studies find a positive relationship between religiosity and *poor* health. For example, Courtenay et al. (1992) found a significant relationship between religiosity and some physical health problems in their study of 165 older Americans (aged 60 to over 100 years of age). In particular, they report that people with more severe health problems are likely to be more involved in the ritualistic dimension of religion.

Other cross-sectional studies of elderly populations find that there is a positive relationship between religiosity and *good* health (e.g., Ferraro & Albrecht-Jensen, 1991; Idler, 1987; Idler & Kasl, 1992; Levin & Markides, 1985). Idler (1987), for example, reports a positive association between greater religiosity and lower levels of functional disability. Although she cautions that a selection effect may be operating in that functional disability may prevent individuals from attending church, she also observes that functional disability is not entirely determinative of religious behavior. Other studies (e.g., Ainlay, Singleton, & Swigert, 1992; Levin & Markides, 1986) make a stronger case for attention to be given to the ways in which health impairments hinder church participation, especially that of the elderly, thus accentuating the positive association that may be found between religious involvement and good health.

Studies that have observed a direct positive effect of religion on physical health (e.g., Koenig, 1997; Levin, 1994; Strawbridge, Cohen, Shema, & Kaplan, 1997) point to the positive consequences that derive from the risk-averse lifestyle behaviors associated with frequent church attendance in general and specifically with membership in strict religious sects (e.g., Mormons and Seventh-Day Adventists) and denominations. Maintaining a low-fat diet, for example, or not smoking or drinking alcohol have a direct impact in protecting people from heart disease and cancer, the two major causes of death in the United States today. Researchers also emphasize the practical and social implications of religiously grounded values that emphasize moderation in personal habits (Ellison & Levin, 1998; Koenig, 1997). Thus

some studies suggest that when confronted with stressful life events, elderly people who show higher levels of religiosity are less likely, for example, to drink alcohol than those who are less religious. In this view, religiosity rather than alcohol becomes the coping resource (Krause, 1991). Overall, therefore, it may not be religiousness per se but the lifestyle practices and social consequences that stem from participation in a particular religion that, as first observed by Durkheim (1897/1951), provide sociocultural buffers against early mortality and the negative consequences of illness in general (cf. Idler, 1995; Idler & Kasl, 1992).

Measures of Physical Health in Late Adulthood

Several self-report and interview-based measures of physical health were available for the participants in late adulthood.

Self-Report Measures

The SF-36 Health Survey (Ware, 1993), a widely used self-report measure, includes seven scales assessing physical health and functioning (and two scales assessing emotional problems). The General Health scale evaluates the extent to which the respondent assesses his or her health as excellent. The Reported Health Transition scale measures the degree to which the individual believes that his or her health is much better now than one year ago. The Physical Functioning scale assesses the ability to perform physical activities without limitations due to health. The Role-Physical scale measures the degree to which the person is free of problems in work or daily activity as a result of physical health. The Bodily Pain scale reflects the absence of pain or limitations due to pain. The Vitality scale measures the degree to which the person feels full of pep and energy. Finally, the Social Functioning scale reflects the degree to which the person is able to perform normal social activities without interference due to physical or emotional problems.

The Duke University Health Measure (DHM) is a self-report measure that uses a 5-point scale to assess both the presence and severity of a list of 22 major health problems (e.g., heart disease, diabetes, cancer, lung disease, and stroke).

Interview-Based Measures

As part of the in-depth interview, the study participants were asked several open-ended questions about their current state of health and health history. They were asked to list health problems and medications taken, to state the frequency of visits to a doctor and hospital or clinic within the past 12

months, and to describe their patterns of alcohol consumption and cigarette use. The participants used a 5-point scale to rate their subjective health compared with other people their age. The interview also included the Activities of Daily Living (ADL) measure that uses a 3-point scale to assess the level of difficulty that people have with such daily activities as dressing, walking, and remembering things.

The health section of the interview, along with the DHM, was used to rate reliably on a 4-point scale the participants' General Health Status (Belloc, Breslow, & Hochstim, 1971) by two trained coders ($\kappa = .68$). The health status measure has been used to assess health functioning in relatively healthy populations in previous research (e.g., Adams, Cartwright, Ostrove, Stewart, & Wink, 1998). A score of 1 indicated no physical complaints; a score of 2 indicated the presence of minor physical illnesses (e.g. back pain, high levels of cholesterol, or high blood pressure controlled by medication); a score of 3 indicated the presence of one chronic illness (e.g., diabetes, heart disease, cancer diagnosed within the past 5 years); and a score of 4 indicated the presence of two or more chronic illnesses.

Health Findings in Late Adulthood

General Health of the Participants

The study participants were relatively healthy. During the interview, almost 9 out of 10 (89%) described their health as good or moderately good, and 93% described their energy levels as good. Sixty-five per cent evaluated their energy levels as being higher compared with others their age, and 29% rated their energy levels as average. Only 10% of the sample reported smoking regularly. By contrast, the majority of the respondents (77%) drank some alcohol, with 50% of these drinking on a daily basis. On the General Health Status scale, 25% of the participants were rated as having no health complaints; 39% were rated as having minor ailments (e.g., arthritis or blood pressure that was under control with medication); 31% had one chronic illness (e.g., diabetes, cancer, cardiovascular problem); and 5% had two or more chronic illnesses.

As expected, members of the younger cohort were rated as having better general health, $t(148) = 2.98, p < .01$. They also reported fewer problems with daily activities due to physical problems, $t(132) = 3.02, p < .01$, and less bodily pain, $t(132) = 2.30, p < .05$, than those in the older cohort. Men reported better physical functioning, $t(132) = 2.38, p < .05$, less impairment of social functioning due to health problems, $t(131) = 2.23, p < .05$, and fewer problems in activities of daily living, $t(132) = 2.55, p < .05$, than women.

Relationship between Religiosity and Physical Health in Late Adulthood

Table 4.2 presents findings for the whole sample on the concurrent relationship between religiosity and various measures of physical health for late adulthood. (Note that the *N* is reduced to 132 participants for whom we had both ratings of religiosity and self-reported health data.) The main finding from these analyses is the virtual absence of a significant relationship between religiosity and either subjective or objective physical health measures. A similar pattern (not shown) emerged in analyses using the disaggregated measures of frequency of church attendance and of intrinsic religiosity taken from the Duke Religious Index (Koenig et al., 1997).

On the SF-36 Health Survey, the only significant finding was a positive relationship between religiosity and scores on the Reported Health Transition scale for the total sample and for women. In other words, highly religious women tended to report their current health as being better than it was a year ago. There was no relation between religiosity and the remaining six scales of the SF-36 Health Survey, subjective ratings comparing health

TABLE 4.2. Correlations between Religiosity and Physical Health in Late Adulthood

Physical health in late adulthood	Religiosity		
	Total	Women	Men
	<u>Self-report measures</u>		
SF-36 Health Study Survey			
General Health	-.00	.04	-.09
Reported Health Transition	.26***	.39**	.07
Physical Functioning	.00	.09	.00
Role-Physical	-.04	.08	-.12
Bodily Pain	-.07	.12	-.24
Vitality	.04	.19	-.08
Social Functioning	.04	.22	-.07
	<u>Interview measures</u>		
General Health Status	.04	-.01	.10
ADL	.01	-.19	.17
Subjective Health	.11	.20	.05
Alcohol Use	-.26***	-.28*	-.18

Note. *N* = 132 for the total sample; *N* = 71 for women and *N* = 61 for men. ADL, Activities of Daily Living scale.

p* ≤ .05; *p* ≤ .01; ****p* ≤ .001; two tailed.

with other same-age adults, or the ADL. As expected, highly religious individuals reported drinking less alcohol than nonreligious individuals. Religious involvement was also unrelated to the observer-based rating of general health status.

We repeated the correlational analyses reported in Table 4.2, breaking down our sample by cohort and denominational origins (Protestant or Catholic). Once again, we found few significant effects. For the older cohort, there was a significant negative correlation between religiosity and alcohol use, and there was a significant positive relationship with the SF-36's Reported Health Transition scale.

The Reported Health Transition scale was also significantly related to religiosity among both Protestants and Catholics. A significant negative effect of religiosity on alcohol use was true for the Protestants but not for the Catholics.

Predicting Health Outcomes in Late Adulthood from Religiosity in Early and Middle Adulthood

Although our analyses of the cross-sectional relationship between religiosity and physical health in late adulthood showed few significant effects, this does not preclude the possibility that an individual's investment in religious capital (e.g., Iannaccone, 1990) earlier in the life course has an impact on health in later adulthood. We now explore the relationship between physical health in late adulthood and religiosity earlier in life using the same set of self-report and interview-based health measures as used in the analyses described in the previous section. Our measure of religiosity consists of ratings of the construct taken from interview material obtained from assessments conducted in early (30s), middle (40s), and late middle (mid-50s and early 60s) adulthood.

Table 4.3 presents longitudinal analyses of the relation between religiosity in early (30s), middle (40s), and late middle (mid-50s and early 60s) adulthood and physical health in late adulthood (late 60s and mid-70s).

As in the case of the concurrent analyses, there were few significant longitudinal relationships between religiosity in early and middle adulthood and health outcomes in older age. For the total sample the only consistent finding was a positive relationship between religiosity at all three preceding time periods and scores on the SF-36's Reported Health Transition scale. This means that the tendency of participants in late adulthood to be optimistic about their health can be predicted from religious involvement as early as young adulthood (30s). There was also a consistent negative relation between religiosity and alcohol use.

Gender analyses revealed that the negative relationship between religiosity and alcohol use tended to be true of both men and women. The posi-

TABLE 4.3. Correlations between Religiosity in Early, Middle, and Late Middle Adulthood and Physical Health in Late Adulthood

Physical health in older age	Religiosity								
	Total			Women			Men		
	30s	40s	50s	30s	40s	50s	30s	40s	50s
	<u>Self-report measures</u>								
SF-36 Health Survey									
General Health	-.04	-.00	.01	-.06	.07	.10	-.06	-.17	-.17
Reported Health Transition	.19*	.26**	.26**	.32**	.40**	.34**	.02	.02	.11
Physical Functioning	-.12	-.03	.04	-.04	.10	.22	-.09	-.13	-.10
Bodily Pain	-.12	-.07	-.03	.05	.10	.22	-.25*	-.24*	-.31*
Vitality	-.03	.07	.07	.16	.23	.27*	-.22	-.13	-.19
Role-Physical	-.02	-.02	.02	.11	.11	.19	-.08	-.14	-.15
Social Functioning	-.04	.07	.10	.16	.30*	.30*	-.20	-.20	-.07
	<u>Interview measures</u>								
General Health Status	.08	.04	-.00	.04	-.06	-.14	.14	.17	.19
ADL	.22***	.06	.02	.06	-.11	-.15	.38***	.23	.20
Subjective Health	.04	.12	.10	.06	.26*	.25*	.05	.08	.11
Alcohol Use	-.19*	-.30**	-.25**	-.18	-.26*	-.22	-.16	-.33**	-.26*

Note. *N* ranges from 131 to 148 for the total sample; *N* ranges from 70 to 78 for women, and *N* ranges from 61 to 72 for men. ADL, Activities of Daily Living scale.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; two-tailed.

tive relationship over time between religiosity and scores on the Reported Health Transition scale was true only for women. There was also a positive relationship for women between religiosity in middle and late middle adulthood and the social functioning scale and ratings of subjective health in late adulthood. In the case of men, the absence of bodily pain in late adulthood was predicted by the degree of religiosity in early, middle, and late middle adulthood.

Supplemental analyses of the sample broken down by cohort and denomination (Protestant/Catholic) did not add to our understanding of the longitudinal relationship between health and antecedent religiosity already discussed. The only exception was the finding that lower levels of alcohol use in older age were predicted by antecedent religiosity for Protestants.

In sum, our longitudinal findings of a relationship between religiosity and lower consumption of alcohol and a positive outlook on health for women replicate over time the concurrent findings presented in Table 4.2. In the case of men there was a negative relationship between religious involvement and body pain longitudinally but not concurrently.

RELIGIOUS INVOLVEMENT AND LIFE SATISFACTION

Empirical studies documenting a positive relationship between religion and mental health or life satisfaction are extensive (see Ellison & Levin, 1998; Levin & Chatters, 1998; Plante & Sharma, Chapter 10, this volume, for recent reviews). Overall, there is strong and compelling evidence that people who have higher levels of religiosity have higher levels of well-being and life satisfaction (e.g., Ellison, 1991; Koenig, 1997). Many studies document a strong positive relationship between religious involvement and some coping behaviors in response to negative life events (e.g., Courtenay et al., 1992; Koenig, Siegler, & George, 1989; Koenig, Siegler, Meador, & George, 1990; Pargament, 1997; Pargament et al., 1990; Sherman et al., 2001). Coping is clearly intertwined with personality differences and social circumstances. Yet it is also the case that trust in God, or openness to spiritual growth experiences, can enhance an individual's ability to manage traumatic events (Ellison, 1991), including life-threatening cancer (Sherman & Simonton, Chapter 7, this volume) and AIDS (Remle & Koenig, Chapter 8, this volume). It also appears that a strong religious sensibility can direct attention away from the physical self towards the nonphysical self and as a consequence nurture self-esteem and life satisfaction among those who have physical disabilities (Idler, 1995).

On the other hand, as Sherman and Simonton discuss (Chapter 7, this volume), some individuals may respond to a life-threatening illness by questioning or turning away from religion (negative religious coping). But as they also note, religious crises during times of adversity may have very different outcomes in the short term than in the long term. Other studies show that church attendance, independent of health status and other correlates of life satisfaction, has an increasingly positive effect on life satisfaction over time (Levin et al., 1996; Markides, 1983). Positive religious feelings, despite a decline in religious activities, have also been shown to have a strong impact on happiness and adjustment, especially for older people (Blazer & Palmore, 1976).

In spite of the robust findings linking religiosity to life satisfaction, there is ambiguity as to whether this effect is evident among all older adults or whether it is restricted to samples of individuals who have suffered some form of adversity. In other words, we are uncertain whether religion buffers life satisfaction both when things go well and when things go poorly in life or whether it is only in the latter eventuality. This uncertainty is due, in part, to the fact that several of the studies that report a positive effect of religiosity on mental health rely on data from purposive rather than random samples (e.g., Blazer & Palmore, 1976; Koenig et al., 1988; Morse & Wisocki, 1987; Pargament et al., 1990). For example, people who already have a physical

disability and who attend a rehabilitation clinic (Idler, 1995) may be more primed than relatively healthy individuals to find new sources of self-esteem in religious involvement.

In the case of the IHD study participants, the relatively healthy nature of the sample may dampen the relevance of religiosity as a buffer of mental health simply because of a ceiling effect or because untroubled individuals do not need religion to feel good about themselves. If this is the case, then we may not find a direct relation between religiosity and measures of life satisfaction, but the two constructs may still be related in an indirect way. For example, religiosity may act as a buffer in protecting self-esteem only among individuals who have poor physical health. For these individuals, the feelings of meaninglessness or anomie that are triggered by adversity may be cushioned by the cognitive and social resources they have access to as part of their religious involvement. In this view, religious participation provides an external structure (Berger & Luckmann, 1966) from which participants derive personal meaning and communal solidarity in their adversity. If this is true, then we should expect significant interaction effects between physical health and religiosity as predictors of life satisfaction in older age.

It is also uncertain whether religiosity has the same effect on life satisfaction for men and women. Because women tend to be more religiously involved than men (Hout & Greeley, 1987; McFadden, 1996), it may be the case that they also derive more benefit from involvement in organized religion.

Measures of Religious Involvement and Life Satisfaction

Life Satisfaction Measures

We assessed life satisfaction with the Life Satisfaction Index (LSI; Neugarten, Havighurst, & Tobin, 1961). This 11-item self-report measure uses a 6-point scale to assess three dimensions of satisfaction with life (Liang, 1984). The Mood Tone subscale assesses the individual's current level of happiness with self; the Zest subscale measures the degree to which a person has an optimistic and positive outlook on life in the present and in the future; and the Congruence subscale assesses the extent to which a person thinks that he or she has attained desired goals. The LSI was available for 118 participants.

Measures of Religiosity and General Health Status

Religiosity in early, middle, late middle, and late adulthood and general health status in older adulthood were assessed with the measures discussed in the preceding sections. Physical health in middle adulthood, a covariate used in our longitudinal analyses, was assessed using a self-report scale that

asked the participant to evaluate his or her own health on a 4-point scale (1 = severe impairment, restricting activities and behavior, 4 = no problems, excellent health).

Concurrent Relationship between Life Satisfaction, Religiosity, Physical Health, and Gender in Late Adulthood

To explore the hypothesis that religiosity had a differential effect on life satisfaction depending on level of physical health and gender, we conducted four 3-way ANOVAs with scores on the global LSI and its three subscales (Mood Tone, Zest, and Congruence) as dependent variables and religiosity, health status, and gender as the three independent factors. For the purpose of these analyses we grouped our participants into those who were either high (2.5 or above; $N = 53$) or low (below 2.5; $N = 65$) on the 5-point measure of religiosity. The second grouping comprised individuals who were either in good (score of 2 or below; $N = 77$) or poor (score above 2; $N = 41$) health on the 4-point General Health Status scale. The third grouping split the sample into men ($N = 59$) and women ($N = 59$). Our primary interest was in the main effect of religiosity on life satisfaction (an index of the direct relation between religiosity and life satisfaction in late adulthood), the two-way interactions between religiosity and physical health and religiosity and gender, and the three-way interaction between religiosity, physical health, and gender. (The interaction terms represent indices of an indirect relation between religiosity and life satisfaction as moderated by health status and gender).

In the case of the overall LSI, the three-way analysis of variance resulted in nonsignificant main effects of religiosity, $F(1,110) = 1.22$, physical health, $F(1,110) = 1.64$, and gender $F(1,110) = .014$. Among the two-way interactions, there was a significant joint effect of physical health and religiosity in predicting scores on the LSI, $F(1,110) = 6.11$. As shown in Figure 4.2, this interaction was due to a crossover effect, with nonreligious individuals who were in poor health showing the lowest levels of overall life satisfaction. Individuals high in religion and in poor health showed the highest levels of satisfaction. A follow-up t -test analysis revealed that there was a statistically significant difference, $t(39) = 2.31$; $p < .05$, in levels of life satisfaction among the two groups of individuals in poor physical health (but who differed in religion). Among individuals in good health, the difference in life satisfaction between the religious and nonreligious participants was not significant; $t(75) = .47$; n.s. The remaining two-way interactions between religiosity and gender and gender and health and the three-way interaction were all not significant.

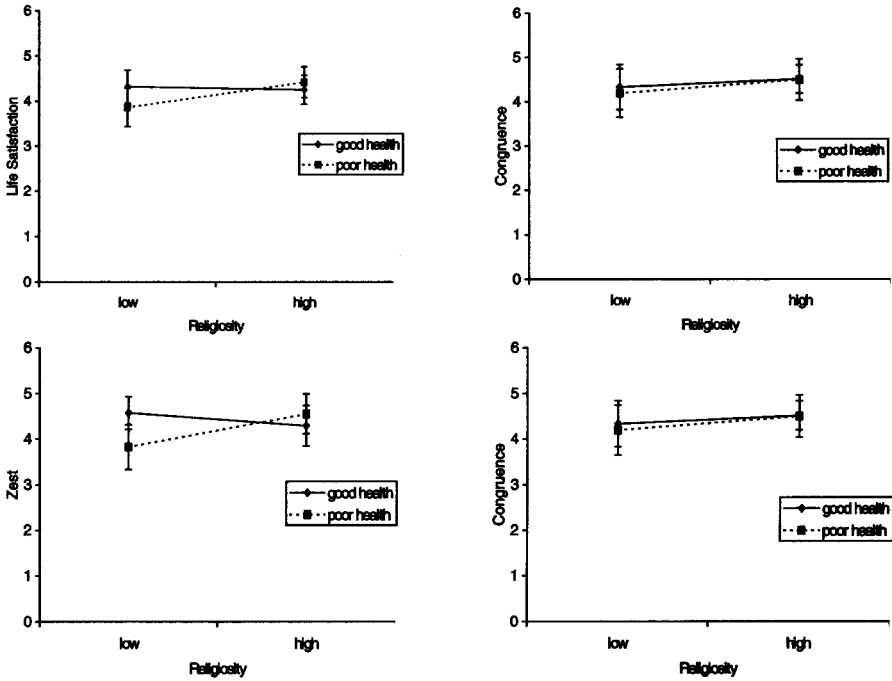


FIGURE 4.2. Levels of overall life satisfaction, mood tone, zest, and congruence in older age as functions of religiosity and health status in older age.

The same pattern of results was found for the Mood Tone and Zest subscales of the LSI. In both instances, there were no significant main effects, but there was a significant interaction between religiosity and physical health: $F(1,110) = 4.16, p < .05$, and $F(1,110) = 11.73, p = .001$, for Mood Tone and Zest, respectively (see Figure 4.2). Follow-up t -tests revealed that the interactions were due to differences in mood tone and zest between the highly religious and nonreligious participants who were in poor physical health: $t(39) = 1.81, p = .08$, and $t(39) = 2.47, p < .05$, for Mood Tone and Zest, respectively.

In the case of the Zest subscale, there was a significant interaction effect of religion and gender, $F(1,110) = 5.60, p < .05$ (see Figure 4.3). This interaction effect was due to the fact that highly religious women tended to score higher on the Zest subscale than women who were low in religiosity. The reverse pattern, however, was true for men.

For the Congruence subscale, there were no significant main effects or interactions.

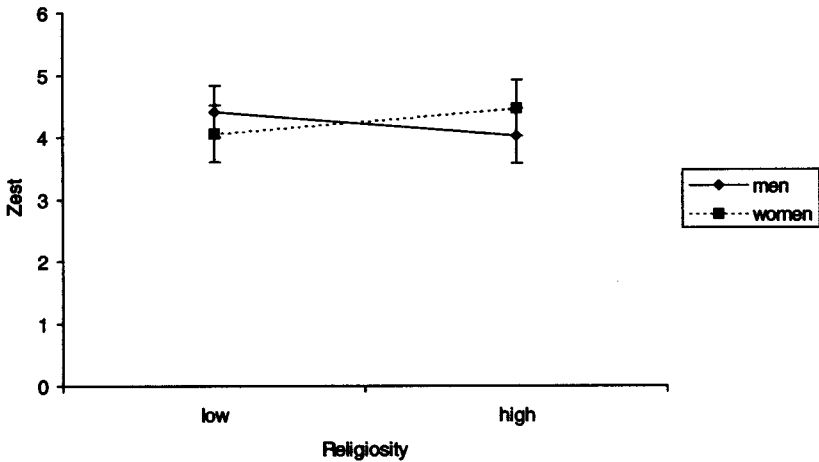


FIGURE 4.3. Levels of zest in older age as a function of religiosity in older age and gender.

In sum, these cross-sectional findings indicate that in our study religiosity did not have a direct effect on life satisfaction in late adulthood. Among individuals who were in poor physical health, however, those who were religious tended to be happier (more positive mood tone) and more optimistic (zestful) about the present and the future than those who were not religious. Religiosity did not have the same effect on life satisfaction for the majority of the participants in this study who were in good health and who showed high levels of life satisfaction irrespective of their religious status. Our results, therefore, support the hypothesis that religiosity may have a buffering effect on life satisfaction during times of personal adversity.

The findings also suggest that religiosity has a varied effect depending on the aspect of life satisfaction being measured. Thus, although religiosity appeared to have a buffering effect on levels of happiness and optimism about life among individuals who had to deal with physical illness, it did not have the same effect on feelings of congruence between one's expectations and goal attainment.

Finally, we found support for the hypothesis that religiosity may have a differential effect on life satisfaction among women and men. This was exemplified by the fact that it was highly religious women and, unexpectedly, nonreligious men who showed highest levels of optimism about the present and future.

Long-Term Effects of Religiosity on Life Satisfaction in Late Adulthood

Although we found a significant positive cross-sectional effect of religion on life satisfaction among individuals who suffered from physical problems in late adulthood, the concurrent nature of this finding renders its interpretation ambiguous. On the one hand, it could be argued that the findings described in the preceding section document a buffering effect of religion on life satisfaction in times of personal adversity (poor health). On the other hand, it could be the case that individuals who are highly satisfied with their lives in older adulthood tend to respond to major illnesses by becoming more religious. We now turn to the longitudinal data to obtain a better understanding of the temporal relation between religiosity and life satisfaction.

We repeated the three-way ANOVAs assessing the effect of religiosity (high vs. low) on life satisfaction among individuals who were either in good or poor physical health in older age and among men and women. This time we used measures of the importance of religion in middle (40s) and late middle (50s and early 60s) adulthood (as opposed to late adulthood) as our indices of religiosity. We also included subjective ratings of health in middle and late middle adulthood as covariates for two reasons. First, we wanted to make sure that we controlled for antecedent health status in interpreting the buffering effect of religiosity on life satisfaction among the group of participants who were in poor health in late adulthood. Second, because we used subjective ratings of health as covariates, we also hoped to control for the general sense of optimism or life satisfaction that is likely to be associated with feeling positively about one's health. The dependent variables were the LSI and its three subscales (Mood Tone, Zest, and Congruence). Again our interest was in the main effect of religiosity and the two-way and three-way interaction effects among religiosity and physical health and gender.

The three-way ANOVAs using religiosity in middle and late middle adulthood as predictors of life satisfaction in older age yielded the same results. We therefore only report the findings obtained using religiosity in middle adulthood as the independent variable. Our decision to do so was guided by the fact that predicting life satisfaction in late adulthood from data collected in middle adulthood involved a time interval of close to 30 years. The time span for analyses using measures of religiosity from late middle adulthood involves only 15 years.

In the three-way ANOVA using scores on the overall LSI as the dependent variable, there was a significant effect of the covariate, $F(1,95) = 5.12, p < .05$. In other words, as expected, life satisfaction in late adulthood was predicted by subjective ratings of health in middle adulthood. After control-

ling for the covariate, the main effects of religiosity in middle adulthood, health status in late adulthood, and gender were not significant. Among the two-way interactions, there was a significant joint effect of religiosity and health status on the LSI, $F(1,95) = 4.85, p < .05$. As shown in Figure 4.4, this interaction effect was due to the fact that among individuals who were physically ill in late adulthood, those who were rated as highly religious in middle age tended to score higher on the LSI than those individuals who were rated as low in religiosity, $t(38) = 1.87, p < .07$. Among individuals in good health, religiosity did not have an effect on levels of life satisfaction, $t(62) = .64, n.s.$

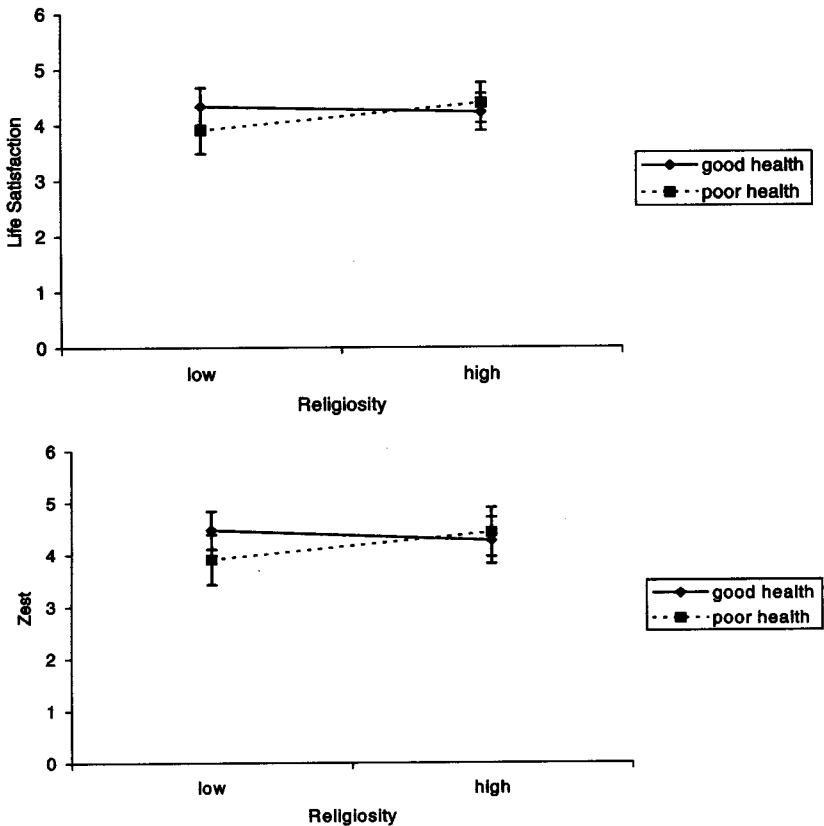


FIGURE 4.4. Level of overall life satisfaction and zest in older age as a function of religiosity in middle adulthood and health status in older age controlling for health in middle adulthood.

The same significant two-way interaction between religiosity and health status was found for the Zest subscale of the LSI, $F(1,95) = 5.87, p < .05$ (see Figure 4.4). As was the case with the overall LSI, the interaction effect was due to a marginally significant difference in zest or feelings of optimism between religious and nonreligious participants who were in poor physical health, $t(40) = 1.68, p = .10$, but there was no difference among participants who were in good physical health, $t(62) = 1.00, n.s.$ The only other finding for the Zest subscale was a significant two-way interaction between religiosity and gender, $F(1,95) = 4.03, p < .05$ (see Figure 4.5). As was the case in the concurrent analysis described in the previous section, this interaction was due to a crossover between men and women, with highest levels of optimism being demonstrated by highly religious women and men who were low in religiosity.

The three-way ANOVAs using the Mood Tone and Congruence subscales of the LSI resulted in no significant main effects of religiosity, health status, or gender. None of the interactions was significant.

Finally, we repeated the four 3-way ANOVAs with LSI and its three subscales as dependent variables, using religiosity in early adulthood (30s), health status in late adulthood, and gender as independent variables. We were interested in finding out whether the buffering effect of religiosity on life satisfaction among individuals in poor health could be predicted over a time period of close to 40 years. The four ANOVAs did not result in any sig-

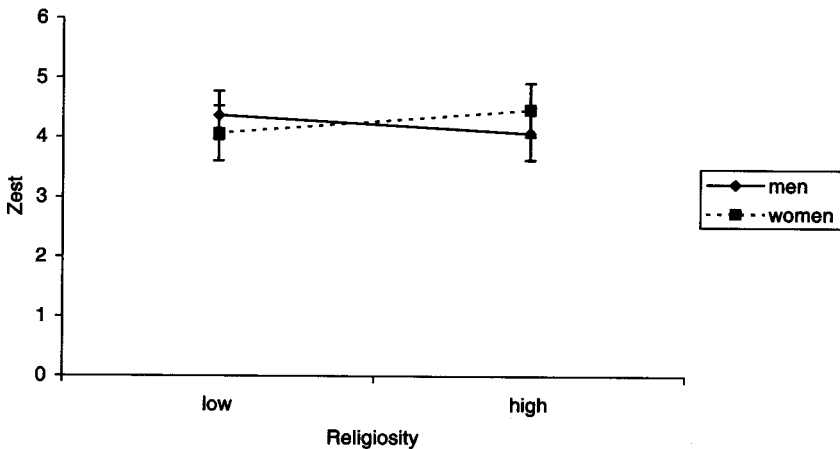


FIGURE 4.5. Level of zest in older age as a function of religiosity in middle adulthood and health status in older age, controlling for health in middle adulthood.

nificant main effects or interactions with the exception of the Zest subscale, for which was replicated the previously reported finding of a significant joint effect of religiosity and gender on feelings of optimism (zest) in older adulthood, $F(1,109) = 5.83, p < .01$.

In sum, our analyses using longitudinal data on religiosity to predict life satisfaction in late adulthood replicated very closely the findings we obtained using concurrent measures of religiosity and life satisfaction in older age. The analyses revealed two consistent sets of findings. First, the positive effect of religiosity on life satisfaction in general and feelings of zest in particular among individuals in poor physical health was not just a concurrent phenomenon. Rather, the buffering effect of religiosity on life satisfaction in late adulthood could be predicted from a time interval of close to 30 years even after controlling for the initial ratings of subjective health. Second, we also found a stable interaction effect between religiosity and gender, with women who were highly religious in early adulthood and men who were low in religiosity showing greater zest or optimism as older adults than other members in the study.

RELIGIOUS INVOLVEMENT AND SOCIAL ADAPTATION

In the previous section, we investigated the concurrent and longitudinal implications of religiosity on feelings of life satisfaction in older age. Successful aging, however, does not revolve solely around issues of self-satisfaction. As argued by Erik Erikson (1982/1998), successful adaptation to old age includes the ability to maintain a vital involvement in life despite suffering multiple losses. It also involves, according to Erikson, the necessity to reintegrate identity in a way that will allow the individual to confront the inevitability of death with equanimity and the kind of trust that provides hope and meaning for members of the younger generations. The development of a sense of ego integrity and the ability to maintain a generative and vital involvement with others may lead to feeling cheerful and satisfied with self or it may not. In other words, a positive appraisal of one's status in older age can lead to feelings of contentment that may not be captured by scores on self-report measures of mental health and life satisfaction. In this section of our chapter, we extend the analyses of the role of religiosity in preserving a healthy outlook on life beyond the narrow issue of adjustment to include measures of the broader construct of psychosocial adaptation.

We argue that there are two distinct, albeit not necessarily unrelated, ways of successfully adapting to late adulthood or for that matter to any other stage of the life course (Wink, 1991). The first strategy involves an inner-focused process of self-exploration, personal growth, creativity, and

reintegration of one's identity. We assume that this is what Erikson had in mind when he wrote about ego integrity as the task of successful adaptation to old age. The second path toward successful aging is more outer directed and focuses more on maintaining positive, harmonious, and empathic relations with others (Blatt & Shichman, 1983; Wink, 1991). It includes generative concerns about the welfare of future generations, involvement with communal undertakings, and maintaining close relations with family and friends. Because religious involvement tends to be a communal activity and assumes embracing, at least in part, an existing tradition or legacy, we assume that it is more likely to be associated with the more outer-directed and communal path of successful aging.

Measures of Psychosocial Adaptation

The two distinct types of psychosocial adaptation were assessed with self-report measures of ego development, sources of well-being, and engagement in daily life tasks.

Ego Development

The Ego Integrity Scale (Ryff & Heincke, 1983) assesses the extent to which individuals have come to terms with their successes and failures and whether they view their lives as meaningful and feel psychologically integrated. The Loyola Generativity Scale (McAdams, de St. Aubin, & Logan, 1993) assesses an individual's concern with the goal of providing for the next generation as reflected in teaching, creating things, commitment to others, and the desire to leave a legacy of some kind.

Sources of Well-Being

The Personal Growth Scale (Ryff, 1989) measures the extent to which an individual derives a sense of well-being from experiences of self as growing and expanding and continuing to develop (as contrasted with a sense of personal stagnation). The Positive Relations with Others Scale (Ryff, 1989) assesses the degree to which an individual derives a sense of well-being from having warm, satisfying, trusting relationships with others and the capacity to maintain a strong sense of affection and intimacy (as contrasted with feelings of isolation and mistrust).

Daily Life Tasks (Harlow & Cantor, 1996)

The Community Service Scale assesses how much an individual is involved in helping friends and neighbors and in community service. The Creative

Activities scale measures daily involvement in playing an instrument, painting, sculpting, and writing.

Among these six measures, the Ego Integrity, Personal Growth, and Creative Activities scales reflect the inner-directed mode of psychosocial adaptation. The Generativity, Positive Relations with Others, and Community Service scales assess the outer-directed way of psychosocial adaptation. In analyzing the relation between religiosity in early adulthood and the measures of outer-directed adaptation in older age, we used three control variables scored from the data in early adulthood (30s). Generative interests were measured with an observer-based index (Peterson & Klohnen, 1995) scored from the California Q-sort (Block, 1978). Personal sociability was measured with the California Psychological Inventory's Sociability scale (Gough & Bradley, 1996). Community involvement was coded from interview transcripts using a 0/1 dummy code.

Concurrent and Longitudinal Relations between Religiosity and Psychosocial Adaptation in Late Adulthood.

Table 4.4 presents the concurrent correlations between religiosity and measures of psychosocial adaptation in older age. The findings support our initial hypothesis that religiosity is related more closely to measures of outer directedness and an emphasis on relations with others than to measures of inner directedness and personal growth. For the total sample, religiosity was correlated positively with generativity, the attainment of well-being through positive relations with others, and an involvement in community-oriented activities. Among the measures of inner directedness, the only significant relation was that between religiosity and involvement in creative activities. For women, religiosity was correlated significantly with positive relations with others and with community service. For men, religiosity correlated positively with generativity and with involvement in creative activities and community service.

In Table 4.5 we present analyses involving the same psychosocial outcome variables as in Table 4.4, but we now use religiosity in early (30s), middle (40s), and late middle adulthood (mid-50s and early 60s) as our predictor measures. The overall pattern of findings for the total sample and for the subsample of men remained unchanged from that reported in Table 4.4. For the total sample, the only difference was an additional presence of marginally significant relations between personal growth and importance of religion from the 30s onward. In the case of women, however, the findings were quite different. Women who showed a lifelong involvement in religion, as opposed to an involvement only in late adulthood, were still more likely than their nonreligious counterparts to be

TABLE 4.4. Correlations between Religiosity and Measures of Psychosocial Adaptation in Late Adulthood

Measures of psychosocial adaptation	Religiosity		
	Total	Women	Men
Ego development			
Integrity	.05	.11	.05
Generativity	.20*	.14	.27*
Well-being			
Personal growth	.10	.12	-.01
Positive relationships with others	.26*	.27*	.08
Life tasks			
Creative activities	.24**	.14	.21 ^a
Community service	.33***	.28*	.35**

Note. For the total sample, the $N = 133$, except for the Ego Integrity Scale for which $N = 114$. For women, the $N = 70$. For men, the $N = 63$.

^a $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; two-tailed.

TABLE 4.5. Correlations between Religiosity in Early, Middle, and Late Middle Adulthood and Psychosocial Adaptation in Late Adulthood

Measures of psychosocial adaptation	Religiosity								
	Total			Women			Men		
	30s	40s	50s	30s	40s	50s	30s	40s	50s
Ego development									
Integrity	.05	.04	.06	.19	.20	.19	-.06	-.15	-.06
Generativity	.31***	.33***	.25**	.26*	.26*	.25*	.37**	.42***	.24 ^a
Well-being									
Personal growth	.16 ^a	.16 ^a	.21*	.25*	.23*	.33*	-.04	-.03	-.05
Positive relationships with others	.27**	.31***	.27**	.25*	.36*	.30*	.11	.10	.03
Life tasks									
Creative activities	.34***	.29***	.31***	.29*	.24*	.27*	.24 ^a	.23 ^a	.19
Community service	.35***	.30***	.33***	.20 ^a	.22 ^a	.28*	.48***	.36**	.34**

Note. For the total sample, the N ranges from 131 to 133, with the exception of the integrity scale, for which $N = 114$. For women, the N ranges between 70 and 71 ($N = 60$ for the integrity scale). For men, the N ranges from 61 to 62 ($N = 53$ for the integrity scale).

^a $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; two-tailed.

characterized by the outer-directed emphasis on maintaining positive relations with others and communal involvement. In addition, however, they also manifested an emphasis on generativity, personal growth, and involvement in daily creative activities. In other words, women who were religiously involved as young and middle-aged adults tended, as older adults, to develop a balanced pattern of adaptation involving a simultaneous concern for others and for personal growth. (The only exception was the consistent lack of relation between the importance of religion and the Ego Integrity scale, which means that any personal growth associated with religiosity does not include attempts at reorganization or reintegration of one's sense of identity.)

It is important to note the impressively consistent and stable life-course pattern of relations between religiosity and psychosocial outcomes in older age. In most instances, if we found a significant relation between a measure of psychosocial adaptation in older age and religiosity in late middle adulthood (a time interval of 15 years), then the same pattern was true for religiosity in early adulthood (a time interval of close to 40 years). In other words, knowing an individual's religious status in early adulthood (30s) served as an excellent predictor of psychosocial adaptation in late adulthood.

There are two possible explanations for the observed temporal consistency of the relationship between importance of religion and measures of outer-directed psychosocial adaptation in late adulthood. On the one hand, it could be argued that these findings make an important statement about the power of religious involvement in shaping human behavior. On the other hand, the findings could be interpreted as indicating something about the antecedent personalities and habits of individuals who tend to be religiously involved throughout the course of their adult lives. For example, it is uncertain whether the significant relationship between religiosity in early adulthood and communal involvement in late adulthood says something specifically about the lifelong implications of religious involvement or whether it reflects the more general stability over time of interest in community activities. In order to address this causal ambiguity, we performed three separate regression analyses predicting scores on measures of generativity, positive relations with others, and community service from religiosity in early adulthood while simultaneously controlling for generative interests, sociability, and community involvement in early adulthood (see the previous section on measures for the description of the control variables). As shown in Table 4.6, in all three instances, the relationship between religiosity in early adulthood and the outcome variables in older age remained significant even when generative interests, sociability, and community involvement in early adulthood were statistically controlled.

TABLE 4.6. Regression Analyses Predicting Three Aspects of Other Directedness in Late Adulthood from Religiosity and Control Variables in Early Adulthood

Measures	Beta weights
Regression predicting generativity in older age	
Generative interests in early adulthood	.03
Religiosity in early adulthood	.32**
R ²	.33**
(df)	(2, 109)
Regression predicting positive relations with others in older age	
Sociability in early adulthood	.17 ^a
Religiosity in early adulthood	.24*
R ²	.32
(df)	(2, 100)
Regression predicting community service in older age	
Community involvement in early adulthood	.14
Religiosity in early adulthood	.30***
R ²	.37***
(df)	(2, 129)

Note. ^a $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; two-tailed.

CONCLUSION

In this chapter, we use data from a longitudinal study of men and women to explore the relationship between religiosity and physical health and life satisfaction in older adulthood. Our sample consisted of a group of relatively healthy, older-aged persons born in California for whom we had data beginning with early adulthood. The comparatively small size of the sample and the fact that the majority of the participants still live in California limit the generalizability of the study's findings. Yet the longitudinal breadth of the study provides a unique perspective on the cross-sectional and long-term nature of the relationship between religiosity and health in late adulthood. Our findings can be summarized in three points.

First, we did not find evidence for a direct relationship between religiosity and physical health in either our concurrent or longitudinal analyses. The only exception was evidence of a tendency for religious women to have an optimistic attitude toward their health in late adulthood. The absence of a relationship between religiosity and physical health may be due to the overall good health of the study participants. It should be pointed out, of course, that whereas our health measures relied on self-report data, the use of clinicians' reports might have yielded different patterns in the data. Similarly,

because our measure of religiosity collapsed across different dimensions of religiosity (church participation and importance of religion), more discrete measures of religiosity might show different correlates with physical health. On the other hand, our confidence in the reliability of our findings is enhanced by the fact that we also failed to find significant relationships between religiosity and physical health using measures of church attendance and intrinsic religiosity taken from the Duke Religious Index. Other studies similarly indicate that general patterns in research findings tend to be maintained regardless of the specific ways in which religiosity is measured (see Thoresen, 1999).

The lack of evidence for a direct relationship between religiosity and physical health may also stem from the impact that individuals' genetic profiles have in older age in obscuring the effect on health of the daily practices associated with religiosity (e.g., abstinence, prayer, family and community involvement). In any case, it is also important to note that the research literature on the relationship between religiosity and physical health is less consistent and compelling than the literature on the relationship between religion and mortality and religion and mental health.

Second, although we did not find a direct relationship between religiosity and physical health, we did find a pattern of significant interactions between religiosity and physical health in explaining overall levels of life satisfaction and zest (feelings of optimism) in particular. Our analyses indicated that religiosity did not have an influence on life satisfaction among physically healthy individuals. Among those individuals who had poor physical health, however, religiosity acted as a buffer of life satisfaction. In other words, our findings suggest that when confronted with personal adversity in late adulthood, such as poor health, nonreligious individuals showed a tendency to exhibit lower levels of optimism about the present and the future than those who were religious. This finding was true not just for older-aged individuals who were currently religious. The same pattern of salutary effects of religion on life satisfaction among older age individuals who were in poor physical health could be predicted using measures of religiosity scored from interview data in middle adulthood (a time interval of close to 30 years), even after controlling for antecedent levels of general health. Although one should be cautious in making causal inferences, it would seem that the positive relationship between religion and life satisfaction in times of adversity goes beyond the mere possibility that psychologically healthy individuals acquire faith in times of stress. It seems, rather, that, as many social theorists have argued (e.g., Berger & Luckmann, 1966; Durkheim 1897/1951), religious participation is a critical, although somewhat latent, social anchor and that long-term investment in religious capital yields dividends that can compensate for subsequent declines in other human stock

(e.g., declining health). Finally, it is important to note that our findings suggest that religiosity has a selective effect on life satisfaction. In particular, it appears to buffer against feelings of pessimism, but it does not have the same effect on feelings of congruence between expectations and goal attainment.

We also found evidence of gender differences in the relationship between religion and life satisfaction. In particular, feelings of optimism about the present and the future (zest) were particularly true of religious women and nonreligious men. This interaction effect of religion and gender in predicting feelings of zest in old age was obtained using measures of religious involvement starting from early adulthood onward.

Third, in this chapter we have argued for the importance of broadening the concept of psychological well-being in late adulthood to include not only measures of adjustment (life satisfaction) but also of psychosocial adaptation. There is more to life than subjective feelings of happiness (cf. Ryff, 1989; Ryff & Singer, 1998), even though self-satisfaction has an impact on the quality of one's life. We found that among older-aged individuals, religious involvement has important implications for how one relates to oneself and to others. Not unexpectedly, religious individuals were more generative and more involved in community activities and tended to derive more satisfaction from personal relations with others as older adults. Once again this pattern of results was not only obtained with a concurrent measure of religiosity scored from interview material in late adulthood but also was evident in our analyses using measures of religiosity scored from interviews obtained at earlier time periods. These relations held true even when we controlled for antecedent levels of generativity, community involvement, and sociability. In the case of women, religious involvement early on in life also predicted an interest in personal growth and engagement in creative activities in older age. Thus the importance of religion for well-being in older adulthood extends beyond the confines of life satisfaction and feelings of optimism to include a much broader pattern of psychosocial adaptation.

ACKNOWLEDGMENTS

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REFERENCES

- Adams, S., Cartwright, L., Ostrove, J., Stewart, A., & Wink, P. (1998). Psychological predictors of good health in three longitudinal samples of educated midlife women. *Health Psychology, 17*, 412–420.
- Ainlay, S., Singleton, R., & Swigert, V. (1992). Aging and religious participation: Reconsidering the effects of health. *Journal for the Scientific Study of Religion, 31*, 175–188.
- Belloc, N., Breslow, L., & Hochstim, J. (1971). Measurement of physical health in a general population survey. *American Journal of Epidemiology, 93*, 328–336.
- Berger, P., & Luckmann, T. (1966). *The social construction of reality*. Garden City, NY: Doubleday.
- Blatt, S. J., & Shichman, S. (1983). Two primary configurations of psychopathology. *Psychoanalysis and Contemporary Thought, 6*, 187–254.
- Blazer, D., & Palmore, E. (1976). Religion and aging in a longitudinal panel. *Gerontologist, 16*, 82–85.
- Block, J. (1978). *The Q-sort method in personality assessment and psychiatric research*. Palo Alto, CA: Consulting Psychologists Press.
- Clausen, J. (1993). *American lives: Looking back at the children of the great depression*. New York: Free Press.
- Courtenay, B., Poon, L., Martin, P., Clayton, G., & Johnson, M. (1992). Religiosity and adaptation in the oldest-old. *International Journal of Aging and Human Development, 34*, 47–56.
- Dillon, M., & Wink, P. (2000, August). *Religious involvement over the life-course: Evidence from a longitudinal study*. Paper presented at the annual meeting of the American Sociological Association, Washington, DC.
- Durkheim, E. (1951). *Suicide: A study in sociology* (J. A. Spaulding & G. Simpson, Trans.). New York: Free Press. (Original work published 1897)
- Durkheim, E. (1976). *The elementary forms of the religious life*. London: Allen & Unwin. (Original work published 1912)
- Ellison, C. G. (1991). Religious involvement and subjective well-being. *Journal of Health and Social Behavior, 32*, 80–99.
- Ellison, C. G., Gay, D., & Glass, T. (1989). Does religious commitment contribute to individual life satisfaction? *Social Forces, 68*, 100–123.
- Ellison, C. G., & Levin, J. (1998). The religion–health connection: Evidence, theory, and future directions. *Health Education and Behavior, 25*, 700–720.
- Erikson, E. (1998). *The life-cycle completed*. New York: Norton. (Original work published 1982)
- Ferraro, K., & Albrecht-Jensen, C. (1991). Does religion influence adult health? *Journal for the Scientific Study of Religion, 30*, 193–202.
- Gough, H. G., & Bradley, P. (1996). *CPI manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Harlow, R., & Cantor, N. (1996). Still participating after all these years: A study of life task participation in later life. *Journal of Personality and Social Psychology, 71*, 1235–1249.
- Hout, M., & Greeley, A. (1987). The center doesn't hold: Church attendance in the United States, 1940–1984. *American Sociological Review, 52*, 325–345.

- Hummer, R. A., Rogers, R. G., Nam, C. B., & Ellison, C. G. (1999). Religious involvement and U.S. adult mortality. *Demography*, 36, 273–285.
- Hunsberger, B. (1985). Religion, age, life satisfaction, and perceived sources of religiousness: A study of older persons. *Journal of Gerontology*, 40, 615–620.
- Iannaccone, L. (1990). Religious practice: A human capital approach. *Journal for the Scientific Study of Religion*, 29, 293–314.
- Idler, E. (1987). Religious involvement and the health of the elderly: Some hypotheses and an initial test. *Social Forces*, 66, 226–238.
- Idler, E. (1995). Religion, health, and non-physical senses of self. *Social Forces*, 74, 683–704.
- Idler, E., & Kasl, S. (1992). Religion, disability, depression, and the timing of death. *American Journal of Sociology*, 97, 1052–1079.
- Koenig, H. (1997). *Is religion good for your health?* Binghamton, NY: Haworth Press.
- Koenig, H., Kvale, J., & Ferrel, C. (1988). Religion and well-being in later life. *Gerontologist*, 28, 18–28.
- Koenig, H., Parkerson, G., & Meador, K. (1997). Religion index for psychiatric research. *American Journal of Psychiatry*, 153, 885–886.
- Koenig, H., Siegler, I., & George, L. (1989). Religious and non-religious coping: Impact on adaptation in later life. *Journal of Religion and Aging*, 5, 73–84.
- Koenig, H., Siegler, I., Meador, K., & George, L. (1990). Religious coping and personality in later life. *International Journal of Geriatric Psychiatry*, 5, 123–131.
- Krause, N. (1991). Stress, religiosity, and abstinence from alcohol. *Psychology and Aging*, 6, 134–144.
- Larson, D., Koenig, H., Kaplan, B., Greenberg, R., Logue, E., & Tyroler, H. (1989). The impact of religion on men's blood pressure. *Journal of Religion and Health*, 28, 265–278.
- Levin, J. (1994). Investigating the epidemiologic effects of religious experience. In J. Levin (Ed.), *Religion in aging and health* (pp. 3–17). Thousand Oaks, CA: Sage.
- Levin, J. S., & Chatters, L. M. (1998). Research on religion and mental health: An overview of empirical findings and theoretical issues. In H. Koenig (Ed.), *Handbook of religion and mental health* (pp. 33–50). San Diego, CA: Academic Press.
- Levin, J., & Markides, K. (1985). Religion and health in Mexican Americans. *Journal of Religion and Health*, 24, 60–69.
- Levin, J., & Markides, K. (1986). Religious attendance and subjective health. *Journal for the Scientific Study of Religion*, 25, 31–40.
- Levin, J., Markides, K., & Ray, L. (1996). Religious attendance and psychological well-being in Mexican Americans: A panel analysis of three-generations data. *Gerontologist*, 36, 454–463.
- Levin, J., Taylor, R., & Chatters, L. (1994). Race and gender differences in religiosity among older adults: Findings from four national surveys. *Journal of Gerontology: Social Sciences*, 49, S137–S145.
- Liang, J. (1984). Dimensions of the Life Satisfaction Index: A structural formulation. *Journal of Gerontology*, 39, 613–622.
- Markides, K. (1983). Aging, religiosity, and adjustment: A longitudinal analysis. *Journal of Gerontology*, 38, 621–625.

- Markides, K., Levin, J., & Ray, L. (1987). Religion, aging, and life satisfaction: An eight-year, three-wave, longitudinal study. *Gerontologist*, 27, 660-665.
- McAdams, D., de St. Aubin, E., & Logan, R. (1993). Generativity among young, midlife, and older adults. *Psychology and Aging*, 8, 221-230.
- McCullough, M. E., Hoyt, W. T., Larson, D. B., Koenig, H. G., & Thoresen, C. E. (2000). Religious involvement and mortality: A meta-analytic review. *Health Psychology*, 19, 211-222.
- McFadden, S. (1996). Religion, spirituality, and aging. *Handbook of the psychology of aging* (pp. 162-177). San Diego, CA: Academic Press.
- Morse, C., & Wisocki, P. (1988). Importance of religiosity to elderly adjustment. *Journal of Religion and Aging*, 4, 15-26.
- Neugarten, B. L., Havighurst, R. J., & Tobin, S. (1961). The measurement of life satisfaction. *Journal of Gerontology*, 16, 134-143.
- Oxman, T. E., Freeman, D. H., & Manheimer, E. D. (1995). Lack of social participation or religious strength and comfort as risk factors for death after cardiac surgery in the elderly. *Psychosomatic Medicine*, 57, 5-15.
- Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford Press.
- Pargament, K., Ensing, D., Falgout, K., Olsen, H., Reilly, B., Van Haitsma, K., & Warren, R. (1990). God help me: I. Religious coping efforts as predictors of the outcomes to significant negative life events. *American Journal of Community Psychology*, 18(16), 793-824.
- Peterson, B. E., & Klohnen, E. C. (1995). Realization of generativity in two samples of women at midlife. *Psychology and Aging*, 10, 20-29.
- Ryff, C. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081.
- Ryff, C., & Heinicke, S. (1983). Subjective organization of personality in adulthood and aging. *Journal of Personality and Social Psychology*, 44, 807-816.
- Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9, 1-28.
- Sherman, A., Plante, T., Simonton, N., Moody, V., & Wells, P. (2001). *Impact of religiousness and religious coping on quality of life outcomes for multiple myeloma patients receiving bone marrow transplantation*. Manuscript under review.
- Strawbridge, W. J., Cohen, R. D., Shema, S. J., & Kaplan, G. A. (1997). Frequent attendance at religious services and mortality over 28 years. *American Journal of Public Health*, 87, 957-961.
- Thoresen, C. E. (1999). Spirituality and health: Is there a relationship? *Journal of Health Psychology*, 4, 291-300.
- Ware, J. (1993). *SF-36 Health Survey: Manual and interpretation guide*. Boston: New England Medical Center.
- Wink, P. (1991). Self and object-directedness in adult women. *Journal of Personality*, 59, 769-791.
- Wink, P., & Dillon, M. (in press). Spiritual development across the adult life course: Findings from a longitudinal study. *Journal of Adult Development*.