Religion and the Quality of Life in the Last Year of Life

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Objectives. Religious involvement in old age appears to remain quite stable until the very end of life, reflecting patterns established earlier in life. Are there differences in quality of life (QOL) for those who are religiously involved in that last year compared with those who are not?

Methods. We studied 499 elderly persons participating in ongoing annual interviews who died in the 12 months following an interview. We examined public and subjective religious involvement and indicators of health-related and psychosocial QOL, including health status and functional ability, family and friendship networks, depression, and well-being.

Results. More deeply religious respondents were more likely to see friends, and they had better self-rated health, fewer depressive feelings, and were observed by the interviewer to find life more exciting compared with the less religious. Respondents receiving strength and comfort from religion reported poorer self-rated health. Those who attended religious services often were most likely to have attended holiday parties, even after adjusting for health status. Significant interactions indicated that the disabled benefited more from both public and subjective religious involvement than the nondisabled.

Discussion. Overall, QOL in the last year of life is positively related to religious involvement, particularly its more subjective dimensions.

Key Words: End of life—EPESE—Quality of life—Religion.

THE concept of the quality of life (QOL) is as multifaceted as the World Health Organization's all-encompassing 1948 definition of health, which incorporated physical health, and psychological and social well-being (World Health Organization, 1958). Research on QOL in old age has tended to focus on health-related quality of life (HRQOL). Although physical health is a critically important dimension for its own sake, and even more so as a determinant of psychological and social well-being, it is still only a part of the picture. Maintaining relationships with family, friends, and neighbors, and participation in larger social groups such as religious congregations may become increasingly difficult and simultaneously increasingly important to well-being in the lives of frail elderly persons with decreasing mobility and functional ability. Particularly as elderly persons approach the very end of their lives, the relative importance of these various dimensions may shift, and configurations that maintained a satisfactory QOL for decades of life may reconfigure. In this paper, we build on earlier research in a well-studied population-based sample of elderly persons, to ask about the particular role of religion as an indicator of social participation and subjective well-being, and its relationship with other indicators of social and psychological well-being during the last year of life (LYOL). The data provide an important opportunity to understand these configurations in the LYOL of elderly persons who were sampled from their communities, rather than being selected because they were part of clinic or hospice populations, providing us with a broader and more diverse set of LYOL experiences.

Current research on the last period of life employs the useful concept of trajectories (Bradley, Fried, Kasl, & Idler, 2000; Lynn & Adamson, 2003). Research on U.S. Medicare populations (Lunney, Lynn, & Hogan, 2002) has revealed four primary health and functioning trajectories for the end of life, including maintaining a high level of functioning that ends in sudden death (7% of deaths), terminal illness (usually cancer) with rapid decline (22% of deaths), chronic disease resulting in organ failure, characterized by periods of exacerbation and recovery within the overall downward trajectory (16% of deaths), and frailty, characterized by a long period of poor functioning (47% of deaths). The concept of trajectories at the end of life was originally proposed by Glaser and Strauss (1968), whose observations of patients carry a certain ironic dissonance. That is, the concept of trajectory implies a pattern or set of patterns, which are appealing and useful because they permit predictability in the direction and timing of events. At the same time, one of the major findings of Glaser and Strauss (1968) was that neither patients nor in many cases their families or caregivers have an "awareness of dying." This old observation is no less true today, and physicians themselves can often be described in the same way (Christakis, 2000). The period at the end of life is still life, and not death; it is thought of in that way by individuals and their families, and although the

overall quality of that life is certainly affected by the physical health trajectories individuals are in, it also comprises a great deal more than that.

In a recent major review of the social history of death and dying, Kellehear (2007) outlines changes in the epidemiological and cultural environment that have led to profound changes in the way dying occurs, from prehistory to the present. Throughout previous centuries of human history, death was most often due to trauma or to infectious disease; both could strike a person of any age and often followed a predictable, if short, course. Human beings anticipated deaths accurately and enacted them with appropriate practices and rituals for the transmittal of inheritance, the requirements of religious faith, and the maintenance of social order. Only in the latter part of the 20th century has life expectancy extended to old age for so many, and because of the very long course of the chronic degenerative diseases, the timing of death has become less predictable, awareness of dying less certain.

The protracted trajectory of dying in old age makes the conceptualization and measurement of QOL more critical than ever (Patrick, Curtis, Engelberg, Nielsen, & McCown, 2003). QOL has been usefully operationalized by researchers in different ways. Some recent research treats it as an entirely subjective construct, "known only to the individual concerned" (Diehr et al., 2007, p. 3, online manuscript); these researchers define QOL as people's "perceptions of their position in life in the context of their particular culture and value systems and in relation to their personal goals, expectations, standards, and concerns" (Diehr et al., 2007, p. 3). Some research portrays HRQOL as relatively objective, with the older person's appraisal of it as subjective QOL (Covinsky et al., 1999). These studies and some reviews (e.g., Gill & Feinstein, 1994) emphasize the overriding importance of the individual's subjective global appraisal of QOL and, particularly, the tendency of these global appraisals to be quite distinct from, and usually more positive than, HRQOL. In a descriptive qualitative study of definitions of QOL given by two groups of elderly persons aged 65 years and older and 85 years and older, Farquahr (1995, p. 1445) found that "there is more to quality of life than health." Areas of QOL mentioned by his informants in response to open-ended questions included social contacts, material circumstances, activities, and aspects of well-being including feeling unhappy or miserable and a desire to be young. Thus, although the non-HRQOL domain includes subjective global appraisals, it also captures domain-specific and objective indicators of social participation and psychological well-being.

What role does religion play? Do the religiously involved have better QOL in the social and psychological domains than those who are not so involved? These are closely related concepts, in that religious group membership is one form of social participation, and subjective religious feelings may also be related to psychological well-being. However, they are distinct enough that several recent studies have assessed the relationship between religion and various indicators of QOL. The World Health Organization's SRPB Group (for the study of Spirituality, Religion, and Personal Beliefs) studied the relationship between SRPB and QOL in 18 countries ($N = 5,087$) (World Health Organization, 2006). In this sample of adults (age range 16–90 years, with mean age = 41.3 years), the World Health Organization Quality of Life Group found that SRPB was positively and significantly correlated with all the domains of QOL: Psychological (.46), General QOL (.42), Social support (.37), Environment (.35), and Physical (.16).

Of particular interest are studies of religiousness and spirituality and QOL in end-of-life populations. One study found that a greater use of religious coping among patients with advanced cancer ($N = 170$) was associated with better QOL as measured by the McGill QOL Questionnaire, including the domains of physical well-being, symptoms, psychological, existential, and support (Tarakeshwar et al., 2006). A qualitative study of patients with early-stage dementia ($N = 23$) found an overall theme of "faith in God" from open-ended interviews and a positive, significant association between religion/spirituality and QOL (Katsuno, 2003). In a retrospective study of the quality of LYOL based on reports by surviving family members, Seale and Cartwright (1994) found that religious beliefs were thought to have been helpful to three out of the five decedents who held them, acceptance of death was seen more frequently among those with strong religious beliefs, and discussion of the impending death was more common for those with strong beliefs. Finally, there is a report from a study of 233 British retirees (Kirby, Coleman, & Daley, 2004); among both frail and nonfrail respondents, spirituality was associated with better psychological well-being, and there was an interaction effect, in that frailty had a smaller negative impact on well-being for the more spiritual respondents. Thus, in recent studies of representative samples of community-dwelling elderly persons and of patients near the end of life, religious participation and beliefs are positively associated with several social and psychological domains of QOL.

Prior Research With This Cohort

Three prior analyses of the New Haven Established Populations for Epidemiologic Studies of the Elderly (EPESE) bear directly on the present research. One examined the cross-sectional association of two dimensions of religiousness (attendance at services and subjective religiousness) with various indicators of social and psychological well-being (Idler & Kasl, 1997) in the full sample at baseline. Religious attendance (but not subjective religiousness) was positively associated with number of leisure activities, number of close friends, kin contacts, friend contacts, and the number of winter holiday celebrations the respondent attended, and was negatively associated with score on the Center for Epidemiological Studies Depression (CESD) Scale and three of its subscales. Subjective religiousness

(but not religious attendance) was positively associated with number of close kin but had no significant associations with any psychological well-being indicator. Both attendance and subjective religiousness were positively associated with the number of kin contacts. A second study (Idler, Kasl, & Hays, 2001) was the first to identify those individuals in the full sample who completed face-to-face interviews during their last 12 months of life. This study showed that religious involvement at the very end of life remained quite stable; compared with their own levels of involvement 3 years earlier, New Haven EPESE respondents' attendance at services declined, but only in their last 6 months of life, and subjective religiousness stayed the same or increased slightly. Overall, members of the sample were quite religiously observant; even in the last 6 months of life, the average level of attendance at services was still once per month (Idler et al., 2001). A third study examined dates of death in the sample with respect to their timing around religious holidays (Idler & Kasl, 1992). Christians were significantly more likely to die in the 30 days following Christmas and Easter than they were in the 30 days leading up to the holiday. Jewish respondents, especially males and those who were observant, were more likely to die after Yom Kippur and Passover compared with the period before. There were no significant differences in the number of Jewish deaths before and after Christian holidays or the number of Christian deaths before and after Jewish holidays. These findings and those in similar studies (J. Anson & O. Anson, 2001; Phillips & Smith, 1990) suggest that religious rituals, both weekly and annual, play an important role in a person's life, perhaps especially at the very end.

From these studies, we have the suggestion that religious involvement is a salient aspect of life for members of the sample because it is associated with so many indicators of QOL, both objective (number of social network contacts) and subjective (optimism, depression, and its components). The question for the present study is whether these associations continue when elderly persons have moved very far along on their end-of-life trajectory, particularly for the majority of deaths accompanied by increasingly poor functioning. Results from the full sample in fact suggested that religious involvement played a special role for the disabled: The associations of religious involvement with positive affect and optimism were stronger for the disabled members of the sample than they were for those with no functional disability, suggesting a very strong relevance of religion for this end-of-life subsample. Together, these findings support the feasibility and usefulness of investigating the association between religiousness and QOL in the critical period of the last 12 months of life, particularly given the rare opportunity of examining self-reported (not retrospective or proxy) data.

We hypothesize that both public and private religious involvement will be positively associated with social participation and with higher levels of psychological well-being in our LYOL subsample. This is in contrast to the associations in the full sample, in which public involvement (more than private religious feelings) was associated with indicators of QOL. We also hypothesize that the associations will be stronger for those in the subsample with the most severely declining trajectories, that is, that there will be interactions between functional disability and both public and private religious involvement, showing stronger associations for those with the poorest functioning.

METHODS

Sample

The LYOL subsample ($N = 499$) is composed of members of the New Haven EPESE population ($N = 2,812$). Data collection procedures for the full sample have been described elsewhere (Cornoni-Huntley, Brock, Ostfeld, Taylor, & Wallace, 1986). The initial sample was stratified and weighted and was representative of the population of elderly persons aged 65 years and over residing in metropolitan New Haven, CT. The study began in 1982, and participants were interviewed annually; longer face-to-face interviews took place in 1982, 1985, 1988, and 1994, with shorter telephone interviews in the intervening years through 1989. Mortality surveillance was continuous through 1996, and the loss to follow-up was negligible, 1% or less. Virtually all deaths were confirmed by death certificate, and exact dates of death were provided.

Construction of the LYOL subsample is described in detail in Idler and colleagues (2001). We identified individuals who died within 1 year of the 1982, 1985, 1988, and 1994 interviews only because the shorter annual interviews did not contain questions on religion or social networks. Not all the 499 individuals who died within 365 days were able to provide self-report data; there are briefer proxy responses ($N = 103$) for those who were incapacitated. Proxy respondents were not asked to provide data on some social network questions, emotional well-being, or subjective religiosity; hence, subsample sizes vary. The subsample in the present analysis was constructed such that all respondents were in their LYOL, whether that year was 1983, 1986, 1989, or 1995, or more precisely, the 365 days following the 1982, 1985, 1988, or 1994 interview. Aside from the unchanging demographic factors of sex, education, and race, all independent, covariate, and dependent variables are taken from the final round of data collection for each individual. The study design, then, is prospective, with self-reported data from a subsample of individuals in their LYOL who were part of a larger representative sample.

Measures

Our independent variables for religious involvement measure attendance at religious services, how deeply religious the individual feels him/herself to be, and how much strength and comfort he/she gets from religion. Frequency of attendance is a numerical recoding of times per year from

six verbal response categories ranging from "never" to "more than once per week": values range from 0 to 104. A second measure is based on the question, "Aside from attendance at religious services, do you consider yourself to be deeply religious, fairly religious, only slightly religious, not at all religious, or against religion?" Our recoded values assigned a 1 for "not at all/against," a 2 for "only slightly," a 3 for "fairly," and a 4 for "deeply religious." Third, in response to the question "How much is religion a source of strength and comfort to you?" we assigned a 1 for "none," a 2 for "some," and a 3 for "a great deal." Proxies provided responses for the frequency of attendance at services item but not for the two more subjective items.

Demographic characteristics were coded 1 for male, 1 for not married, 1 for White (92% of the non-White were African American), and 1 for perceived low income, 0 otherwise. Age (at time of final interview) and education were measured in years. Health status covariates were coded 1 for hospitalization in the past year, 1 for ever having had a nursing home stay, 1 for one or more weeks in bed in the last 3 months, 0 otherwise. Number of (interviewer observed) prescription medications was a count. Functional disability was measured using 15 Activities of Daily Living, Rosow, and Nagi items, with the scale ranging from 0 (no disability) to 150 (for details, see Idler & Kasl, 1997).

Measures of social QOL included having a confidant (1 if *yes*), seeing friends (1 if *yes*), the number of kin seen regularly, and the number of different groups with which the respondent celebrated during the last winter holidays (Christmas, Hannukah, New Year's) (this measure was administered in only 1982 and 1985, hence the smaller sample size). Measures of psychological QOL included the CESD (scored 0–60) and its four subscales, for somatic (scored 0–21), negative affect (scored 0–21), positive affect (scored 0–12), and interpersonal difficulties (scored 0–6), as well as self-rated health (scored 1 = *poor* to 5 = *excellent*). There is a measure of whether the respondent "finds life exciting" (1 if *yes*); this variable is interviewer-observed, although it may be influenced by responses of the participants, notably the CESD items. Proxies were asked about number of kin seen but not other QOL measures.

Analysis

In a prior publication, the four waves of data were analyzed separately (Idler et al., 2001). For this study, we pooled the waves. All independent and dependent variables are taken from the interview immediately prior to death, as are the demographic and health status covariates, except sex, race, and education. Ordinary least squares and logistic regression analyses were performed with SAS, version 9.1. All analyses are unweighted. We first treat the three religion variables as dependent variables, to assess the potential impact of selection by health status. We then take the religion variables as independent variables, first separately and then combined, in models using the social and psychological QOL variables as dependent measures, adjusting for demographic and health status. We also test for interactions between the religion variables and functional disability because disability is a central measure of health status and a strong predictor of mortality in this sample. Thus, although the data are cross-sectional at one point during the LYOL, respondents were selected prospectively for a representative community sample, not because of their purported end-of-life status. Moreover, we examine the relationship between religiousness and QOL net of an extensive set of health status covariates, so that health selection is minimized as much as possible. We would note, however, that the majority of QOL indicators were measured by self-report, and thus, 103 proxy respondents are largely missing data for those analyses.

RESULTS

Table 1 shows characteristics for the full sample at baseline in 1982, for the subsample in the LYOL, and for the subsample at baseline in 1982. For 142 respondents, the baseline interview was the one that took place during their LYOL; hence, their values are the same; for the other 357, the baseline measure is taken approximately 4, 7, or 13 years prior to death. Because of overlap between the samples, the differences are for the purposes of illustration only, and no statistical tests are performed. Compared with the full baseline sample, the LYOL subsample attends religious services less frequently, about 18 times per year by comparison with 26. But on the more subjective measures of religiousness, there are no differences. The LYOL subsample is more likely to be male, is older by almost 7 years, has slightly less education, is slightly more likely to be White, is slightly more likely to have low income, and is much less likely to be married. As one would expect, on nearly every indicator of HRQOL, the LYOL sample has poorer health, with much higher functional disability scores, more prescription medications, a greater history of hospitalization in the past year or ever having been in a nursing home, and a higher percent with more than 1 week in bed in the last 3 months. When we compared the functional disability scores for the LYOL with the respondents' scores at the previous round of interviews 3 years earlier (data not shown), about 33% had experienced a major decline in functioning, whereas 44% had persisted with relatively little change in mild to moderate (scores 1–40) or severe (scores 41–150) disability during the previous 3 years. Among respondents with proxies, 69% experienced a major decline in functioning and just 30% stayed at approximately the same level of disability, whereas among nonproxy respondents, only 19% declined, 69% remained stably disabled, and 11% remained nondisabled. We could thus characterize the end-of-life trajectories of our subsample as similar to those found among elderly persons in the U.S. population as a whole, the majority of whom experience long periods of moderate to severe disability in the years prior to death.

Table 1. Descriptive Means and Percentages for Baseline Sample and LYOL Subsample, New Haven Established Populations for Epidemiologic Studies of the Elderly

	Minimum	Maximum, N	Baseline (maximum N = 2,812)		LYOL subsample[a] (maximum N = 499)		LYOL subsample at baseline[b] (maximum N = 499)	
			Mean/%	N	Mean/%	N	Mean/%	N
Attend services per year	0	104	26.5	2,762	18.3	481	22.9	485
How religious	1 (*not at all*)	4 (*deeply*)	3.2	2,728	3.2	376	3.2	475
Strength/comfort from religion	1 (*none*)	3 (*great deal*)	2.6	2,705	2.6	366	2.6	474
% Male	0	1	41.0	2,812	49.5	499	49.5	499
Age	65	99	74.5	2,811	81.2	499	76.6	499
Education, years	0	17	9.0	2,725	8.6	473	8.6	473
% White	0	1	79.0	2,803	80.0	498	80.0	498
% Low income	0	1	9.0	2,701	11.0	475	11.0	475
% Not married	0	1	62.5	2,786	72.0	494	64.0	493
Functional disability	0	150	18.8	2,781	55.2	486	27.3	493
Prescription medications	0	18	2.7	2,686	4.7	480	3.3	484
% Hospitalized in last year	0	1	20.0	2,792	42.0	490	36.0	491
% Ever in nursing home	0	1	4.0	2,793	32.0	492	28.0	492
% More than 1 week in bed, last 3 months	0	1	6.0	2,791	15.0	483	7.0	491
% With confidant	0	1	83.0	2,754	80.0	384	80.0	484
Number kin seen regularly	0	51	6.1	2,757	3.4	436	5.7	486
% Who saw any friend	0	1	78	2,704	83	378	74	477
Number of holidays celebrated last winter	0	6	1.5	2,812	1.4	258	1.4	499
Self-rated health	1 (*poor*)	5 (*excellent*)	3.6	2,775	3.2	389	3.4	487
CESD-20	0	57	8.4	2,698	12.1	367	9.9	468
Negative affect	0	21	2.4	2,340	3.5	293	2.9	413
Positive affect (lack of)	0	12	2.3	2,340	3.5	293	2.6	413
Interpersonal difficulties	0	6	0.4	2,340	0.5	293	0.5	413
Somatic symptoms	0	21	3.0	2,340	4.1	293	3.5	413
% Observer rated life exciting	0	1	81	2,539	57	285	75	445
Proxy respondent	0	1	0	2,812	103	499	0	499

Notes: LYOL = last year of life; CESD-20 = 20-item Center for Epidemiological Studies Depression Scale.
[a] Includes all those who died within 365 days of their 1982, 1985, 1988, or 1994 face-to-face interviews; data come from the final interview.
[b] Data from the baseline (1982) for those in the LYOL subsample.

With respect to QOL, the differences between the LYOL subsample and the full sample are inconsistent. The LYOL subsample is slightly less likely to report having a confidant, and reports seeing kin less often, but a greater percentage reports seeing friends. The number of holidays celebrated (question asked only in 1982 and 1985) was about the same. CESD and subscale scores are on average higher for the LYOL subsample, though both are well below the clinical depression approximation cut point of 16. Self-rated health is poorer for the LYOL subsample, and a smaller number were rated as "finds life exciting" by the interviewer.

In all the following analyses, we consider only the subsample of those in their LYOL. Table 2 describes the religiousness of our respondents and addresses the issue of health selection for the ability to attend services. Perhaps surprisingly, there are no differences by gender, age, education, race, income, or marital status within our LYOL subsample with respect to the frequency of attendance at service. However, those with higher levels of functional disability attend services less frequently; for every additional 10 points on our disability scale of 150, a respondent attends services almost two times per year less frequently. On the other hand, those who were patients in a nursing home

attended services on average 8.1 times more often than those who had not been institutionalized; this is possibly an indication of the frequency with which religious services are held in the nursing homes where respondents were residents. There are no other significant coefficients; functional disability and nursing home residence explain about 7% of the overall variance in religious service attendance. We note that the larger N for this model indicates that the attendance variable was answered in proxy interviews.

There are more demographic differences in how deeply religious respondents report themselves to be. Males, Whites, and those with more education are significantly less likely than females, non-Whites, and those with less education to say they are deeply religious. None of the health status or disability indicators are associated with feelings of religiousness. Demographic factors explain 10% of the variance in this measure. For the third measure of religiousness— receiving strength and comfort from religion—there is yet a different pattern. Males and Whites are less likely than females and non-Whites to say that they have received a great deal of strength and comfort from their religion, whereas those who had been in a hospital in the last year reported more strength and comfort. The R^2 for this third model is

Table 2. Unstandardized Coefficients From General Linear Models for Religion Variables

	Attendance at services		Deeply religious		Strength and comfort	
	b	*p* Value	*b*	*p* Value	*b*	*p* Value
Male	1.07	.707	−.26	.008	−.22	.005
Age	−.01	.939	.01	.200	−.00	.381
Education	.30	.378	−.03	.005	−.01	.200
White	1.74	.601	−.30	.010	−.21	.018
Low income	−2.46	.555	.05	.727	−.08	.485
Not married	2.44	.437	−.02	.848	−.07	.418
Functional disability	−.17	.000	−.00	.817	−.00	.640
Prescription drugs	.57	.160	.02	.310	.01	.589
Hospital stay	−3.04	.281	.01	.897	.20	.009
Nursing home stay	8.13	.028	−.15	.240	−.12	.260
Week in bed	−3.43	.396	.15	.300	−.00	.992
Intercept	19.12	.232	2.90	.000	3.32	.000
R^2	.07		.10		.08	
N	424		340		336	

.08. Proxies did not answer the two subjective religiousness items, so the sample sizes are smaller.

Table 3 shows results for the test of the hypothesis that religious involvement in the LYOL is associated with a better social QOL. These models adjust for all demographic and health variables. The number of kin seen is fewer if a respondent is not married or is in a nursing home. There is no significant association of any religion variable with seeing kin. With respect to seeing friends, however, those who are deeply religious are 62% more likely to have seen any friend than those who are less religious. None of the religion variables is related to reporting having a confidant, although being unmarried and/or disabled reduces the chances of having a confidant. The final social QOL indicator is the number of holidays celebrated; those respondents who attended services more frequently also attended significantly

more holiday parties. The models show only modest, albeit positive associations of religious involvement with social QOL during the LYOL.

Table 4 examines the hypothesis that religiousness during the LYOL will be associated with better psychological well-being, including CESD depressive symptoms and its subscales, self-rated health, and the interviewer's rating of how exciting the informant finds his/her life. For most of these models, having a low income and being disabled and, to a lesser extent, spending more than a week in bed is associated with poorer well-being, whereas there are no significant differences by gender, age, education, or race. Attendance at religious services has no main effect associations with any of the outcomes. Being deeply religious is associated with lower total CESD scores; for every increased level of religiousness, CESD scores decline by 2.6

Table 3. Unstandardized Coefficients and ORs From General Linear and Logistic Regression Models, for Indicators of Social Quality of Life

	Number of kin seen		Any friend seen[a]		Confidant reported[a]		Holidays celebrated	
	b	*p* Value	*OR*	95% *CI*	*OR*	95% *CI*	*b*	*p* Value
Religious attendance	.02	.141	1.01	1.00, 1.03	1.00	0.99, 1.02	.004	.030
Deeply religious	.25	.595	1.62	1.01, 2.61	1.28	0.80, 2.06	.09	.254
Comfort from religion	.56	.370	0.84	0.46, 1.55	1.41	0.78, 2.54	−.15	.184
Male	.49	.462	1.53	0.77, 3.06	0.68	0.34, 1.34	.04	.710
Age	.01	.800	1.01	0.96, 1.05	1.03	0.98, 1.08	−.001	.456
Education	−.13	.090	1.07	0.98, 1.16	0.95	0.88, 1.03	.01	.599
White	−.12	.878	1.26	0.58, 2.78	1.37	0.62, 3.00	−.17	.226
Low income	.39	.682	1.70	0.58, 4.97	1.22	0.44, 3.34	−.42	.009
Not married	−2.42	.000	1.39	0.67, 2.86	0.29	0.13, 0.67	−.72	.000
Functional disability	.01	.323	0.99	0.98, 1.00	0.98	0.97, 0.99	−.001	.634
Prescription drugs	−.02	.800	1.05	0.94, 1.17	1.07	0.96, 1.18	−.01	.753
Hospital stay	−.10	.880	1.31	0.64, 2.66	0.96	0.48, 1.94	.08	.515
Nursing home stay	−1.86	.040	0.95	0.38, 2.38	0.80	0.35, 1.84	−.12	.504
Week in bed	.02	.980	0.65	0.26, 1.65	0.48	0.20, 1.17	.10	.553
Intercept	4.26	.277	1.33	*p* = .508	−0.59	*p* = .776	2.40	.000
Likelihood ratio χ^2			21.52	*p* = .089	31.12	*p* = .005		
R^2	.10						.25	
N	317		321		323		221	

Notes: *OR* = odds ratio; *CI* = confidence interval.
[a] Logistic regression.

Table 4. Unstandardized Coefficients From General Linear and Logistic Regression Models for Indicators of Subjective Health and Psychological Well-being

	CESD-20		Positive affect (absence of)		Somatic subscale		Self-rated health Main Effects		Self-rated health Interactions[a]		Observer rating, life (not) exciting[b]	
	b	p Value	b	p Value	b	p Value	b	p Value	b	p Value	OR	95% CI
Religious attendance	−.02	.316	−.00	.898	−.00	.933	.00	.807	−.004	.230	.99	0.98, 1.00
Attendance × Disability									.001	.053		
Deeply religious	−2.63	.004	−.70	.044	−1.59	.000	.30	.000	.16	.152	.49	0.31, 0.78
Deeply × Disability									.004	.032		
Comfort from religion	1.51	.198	−.35	.412	1.13	.041	−.23	.042	−.50	.001	1.44	0.80, 2.56
Comfort × Disability									.006	.008		
Male	−.01	.996	.46	.318	−.07	.906	−.05	.677			.96	0.52, 1.77
Age	.09	.310	.05	.127	.05	.185	.00	.981			1.02	0.97, 1.06
Education	−.17	.246	−.01	.842	−.03	.687	.01	.347			1.04	0.97, 1.12
White	1.30	.376	.60	.232	.67	.297	−.08	.569			.68	0.33, 1.37
Low income	4.72	.011	1.60	.012	1.93	.019	−.42	.016			1.50	0.63, 3.57
Not married	2.14	.103	1.09	.021	.27	.654	−.08	.529			1.95	0.96, 3.94
Functional disability	.08	.000	.02	.010	.03	.003	−.01	.000			1.02	1.01, 1.03
Prescription drugs	.29	.110	−.03	.687	.06	.445	−.04	.023			1.04	0.96, 1.14
Hospital stay	−.54	.669	−.29	.530	.10	.857	−.05	.663			.65	0.34, 1.26
Nursing home stay	.28	.871	1.08	.088	−.56	.489	.31	.055			1.79	0.80, 3.96
Week in bed	3.84	.041	.64	.343	1.64	.058	−.38	.034			1.22	0.49, 3.05
Intercept	3.81	.610	.73	.782	.14	.967	3.37	.000			−2.13	$p = .277$
Likelihood ratio χ^2											71.42	$p = .000$
R^2	.20		.19		.17		.20					
N	316		257		257		324		324		296	

Notes: OR = odds ratio; CI = confidence interval; CESD-20 = 20-item Center for Epidemiological Studies Depression Scale.
[a] Parameter estimates are shown for main effects and interaction terms from three separate models that include all covariates.
[b] Logistic regression.

points. Among the CESD subscales, the positive affect and somatic symptoms subscales are also associated with religiousness; thus, it appears that the association of being deeply religious with fewer depressive symptoms is due particularly to the lower level of somatic symptoms and better positive affect experienced by the more deeply religious. Specific items include fewer difficulties sleeping, less poor appetite, and more feelings of happiness. Being deeply religious is also associated with better self-rated health and with better interviewer–observer ratings of the respondent finding his/her life exciting (respondents were 51% less likely to be rated by the interviewer as "does not find life exciting and enjoyable"). Getting a great deal of strength and comfort from religion shows a different picture, including associations with poorer outcomes; it is associated with more, not fewer, somatic symptoms and with poorer, not better, self-reported health.

To test the idea that religious involvement might carry special benefits for the most disabled respondents in the sample, we tested interactions of functional disability with each of the religion variables for each of the outcomes. The significant interactions were all for self-rated health. When tested singly in models, there are significant, positive-sign interactions of all three religion variables, meaning that among the most disabled, those who say they are deeply religious, get a lot of strength and comfort, and attend service (marginally) rate their health better than those who are less religiously involved, and these relationships are stronger than they are for the nondisabled. We show the composite of these three models in the second set of columns under self-rated health. Overall, we see that one or more of the religion variables is associated in the hypothesized direction with each of the dependent variables, with the exception that getting strength and comfort from religion was associated with poorer, not better, self-rated health. This finding had been anticipated in Table 2, where more reported strength and comfort was reported by those who had a hospital stay, suggesting that health crises may have elicited a religious response. The other finding in Table 4 is that people with disabilities show a stronger association of all three of the religion variables with better self-rated health than do the nondisabled.

We conducted a further set of analyses, subdividing the subsample into those who were in their last 6 months of life and those who had 7–12 months of life remaining. The findings (available on request) were largely similar but showed a larger number of significant associations for the 7- to 12-month group than for the 0- to 6-month group; all the significant interactions with self-rated health for the sample as a whole pertained only to the 7- to 12-month group.

DISCUSSION

To summarize, we found that our LYOL sample showed mixed evidence of health selection in the frequency of

attendance at services; although on the one hand, higher levels of disability were associated with lower levels of attendance at services, nursing home stays actually increased the frequency of attendance. Health status had no relationship with how religious our respondents felt they were, and hospital stays in the past year were associated with receiving more strength and comfort from religion. Thus, poor health is in some cases associated with more religiousness and in some cases with less. This underscores how important it is to consider different measures of religious involvement and to analyze different dimensions of religiousness separately, as respondents may selectively draw on religious resources; if respondents say that they have received "a great deal of strength and comfort from religion" it may imply a great deal of need, as suggested by the measure of recent hospitalization.

With respect to our primary hypotheses, we saw only a single direction of association (positive) between our measures of religiousness and our measures of social QOL. Both public and subjective dimensions of religiousness are involved: More frequent attendance at services was associated with having more holiday celebrations, whereas feeling oneself to be deeply religious was associated with seeing friends. The direction is again positive (with one exception) for the psychological indicators of QOL; CESD depressive symptoms, somatic symptoms, self-rated health, and finding life exciting are all better for those who say they are deeply religious. The exception is that self-rated health is poorer for those who have received a great deal of strength and comfort from religion, a finding that speaks to the face validity of the measure, the search for what has been called religious consolation (Ferraro & Kelley-Moore, 2000). This finding also suggests that the religious coping used by older individuals to deal with health problems (Koenig, 2002; Musick, 1996) continues to be employed by individuals in their LYOL. The opposite sign and equally significant association of being deeply religious with better self-rated health, even after health status covariates are included, suggests that a broad concept of "health," including social, emotional, and possibly spiritual dimensions, is being considered by respondents (Idler, Hudson, & Leventhal, 1999).

In some ways, these findings for our LYOL subsample are quite similar to those we have seen in earlier studies for the full sample. Religiousness at baseline was positively associated with a varied set of indicators of better QOL, and these general patterns evidently persist to the very end of life. However, it is notable that although the indicators of QOL have remained the same, there is a real shift in which indicators of religiousness are in play. In Idler and Kasl (1997), attendance at services was the primary indicator associated with QOL, and subjective religiousness played little to no role. In the present study, we hypothesized that at the end of life there would be an increasing role of the private indicators of religiousness, given the respondents' de-

creasing mobility. What we found was that the balance shifted almost entirely. Attendance at services is associated directly only with celebrating holidays. Being deeply religious, however, is associated with seeing friends, having fewer depressive symptoms, greater positive affect, fewer somatic symptoms, better self-rated health, and finding life exciting. Notably, there are opposite signs for the measure of getting strength and comfort from religion. This measure was associated positively both with having been hospitalized and with poorer self-rated health, even after other measures of health status have been taken into account. However, the sign of its significant interaction term is positive, indicating that self-ratings of health are better among the disabled who gain strength and comfort from religion than among those who do not. This is a fascinating shift in that we are looking at the same sample, in the same place and with the same measures, but in different ways, in different situations, at different times of life. It is further evidence that religiousness is a multidimensional construct and that different dimensions are relevant to health in different ways at different times (Hill & Pargament, 2003). Our study is limited in that its dimensions of religiousness are composed of single items; other efforts in the measurement of late-life religiousness (Hays, Meador, Branch, & George, 2001; Paloutzian & Ellison, 1982) offer validated instruments with specific reference to religious regrets, turning points, and other indicators of a life course context.

One question that might be raised is: Were the respondents in the study aware of their LYOL status? The end-of-life trajectories of our respondents are quite similar to national patterns (Lunney et al., 2002) that Kellehear (2007) argues imply less and less certainty about the timing of death or a diminished subjective awareness of the approximate point where one falls along that trajectory. On the other hand, the research and clinical literature are filled with examples of what we might call insights into life expectancy, a type of mind–body relationship that is neither therapeutic nor etiological in the way we usually think of the concept but that is based on an inner knowledge and at most a minimal control over the timing of death. These examples include anecdotal accounts of patients correctly foretelling their own imminent deaths, despite an absence of clinical indicators (Nuland, 1995), individuals living only just long enough to accomplish a goal (Myerhoff, 1980), the preponderant timing of deaths after rather than before religious holidays (Phillips & King, 1988), the phenomenon of terminal decline in cognitive function (Wilson, Beck, Bienias, & Bennett, 2007), or the apparent ability of self-ratings of health to predict mortality (Idler & Benyamini, 1997). It is impossible to know the specific level of awareness that the respondents in this study had about their remaining length of life, but religion itself may provide intimations of mortality; respondents whose names are placed on a congregation's prayer list, who are visited by clergy, or who are given last rites find their place in an end-of-life narrative that is given form and

substance by religious belief and familiarity with end-of-life experiences by examples of care provided to others in the congregation.

For the religiously observant, religious rituals and experiences punctuate and undergird the life course. Some rituals and experiences are regular daily, weekly, or annual experiences that may provide a set of rhythms to long lives. Others are singular observances evoked by events and life course transitions: weddings, baptisms, bar mitzvahs, and funerals. The loss of family and friends mounts in old age; ritual practices and religious frameworks can provide comfort, understanding, and meaning for those stressful events. The Judeo-Christian tradition that predominates in this sample teaches caring and concern for the sick and otherwise disadvantaged. If religious beliefs and groups are successful at providing support and solace for the ill, then we should see heightened benefits for this group. In their persistence to the very last period of life, these beliefs may provide an arc of continuity that gives meaning and dignity to the whole life course and enhances QOL even in the context of the impending end of life. As life expectancy continues to increase, understanding the conditions underlying the QOL in these extended trajectories becomes increasingly important.

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