

Increased Life Expectancy from Positive Perceptions of Retirement

Reuben Ng, Yale School of Public Health, New Haven, Connecticut
Deepak C. Lakra, University of Western Ontario, London, Ontario, Canada
Becca R. Levy, Yale School of Public Health, New Haven, Connecticut

Abstract

Studies on the relationship between retirement and subsequent health, including longevity, have produced mixed findings. One reason may be that these studies have treated retirement as a uniform event. In contrast, we examine whether individuals' attitude toward retirement (ATR) can impact longevity. As predicted, we found that participants with positive ATR at the start of the study lived longer than those with negative ATR. They had a median survival advantage of 4.9 years. The cohort was the Ohio Longitudinal Study of Aging and Retirement that measured ATR in 1975 and followed longevity for 23 years. Through survival analysis, we found that participants with negative ATR had 1.71 times higher risk of death as compared to those with positive ATR after controlling for relevant covariates including age, employment status, functional health and socioeconomic status. Possible mechanisms driving the ATR-longevity link are discussed.

Keywords: attitudes toward retirement, retirement, mortality, longevity, longitudinal

Introduction

Over the last five decades of the twentieth century the number of retirees in the United States and Europe has risen, a trend due in part to a decrease in retirement age (Brugiavini and Perrachi 2005; Gendell 2001). However, in recent years there has been a reversal of this longstanding trend. Specifically, workforce participation rates among the individuals over 60 years began to increase significantly (Gendell 2008). The recession has decreased the financial coffers of most, forcing many to delay retirement or come out of retirement to undertake full or part time jobs when they can be found (Roberts 2009).

Despite these changing patterns, 50% of those over the age of 65 years in the world today are currently retired (Fronstin, 2010), with many more contemplating retirement, prompting the need to understand the health effects of this life transition. However, studies of the latter have been inconsistent—some studies report that retirement leads to negative health outcomes, including earlier mortality (e.g., Nielsen, Sorensen and Skagen 2003) while other studies report that retirement leads to positive health outcomes, including prolonged survival (Ohruai, Matsui, He, Ebihara, & Sasaki 2004). One of the reasons for this inconsistency may be that the studies tend to consider retirement as a uniform event and they do not take into account the role that individuals' attitudes toward retirement holds.

In the following sections, we review the disparate literature on the relationship between retirement and health outcomes, including survival, and present our case for why attitudes toward retirement may be a missing link in understanding the retirement-mortality relation. We hypothesize that more positive attitudes toward retirement will predict greater survival, after adjusting for health and income.

Retirement and Mortality

The literature on retirement and mortality has reported three different relationships: retirement leads to worse health, retirement is not related to subsequent health, and retirement leads to better health.

Retirement leads to worse health: The finding that poor health, both as perceived by the individual and as indicated by objective measures, is associated with subsequent retirement has been documented in a number of studies (Nielsen, Sorensen & Skagen 2003; Karpansalo, Manninen, Kauhanen, Lakka, & Salonen 2004). The relationship between adverse health and retirement, however, appears to be bidirectional. Studies have also found that poor health can be a consequence of retirement (Kasl & Jones, 2000). For example, a retrospective study of Japanese men between the ages of 72 and 88 who were graduates of a school of engineering found that a younger age of retirement was associated with worse health and earlier mortality (Ohruai, Matsui, He, Ebihara, & Sasaki 2004). The findings are unlikely to be attributed to those with worse health being more likely to retire at younger ages, since the investigators excluded potential participants if the main reason for their retirement pertained to serious health conditions including respiratory disease, cardiac disease, cerebrovascular disease and cancer (Ohruai *et al.* 2004). This is consistent with studies from European countries. A recent prospective study of 16,827 individuals in Greece, for instance, demonstrated a 10 per cent increase in mortality with a 5 year decrease in age at retirement (Bamia,

Trichopoulou, & Trichopoulos 2007). Similarly, a Danish study showed a linear relationship between the number of years since retirement and the relative risk of death among those who opted for early retirement (Quaade *et al.* 2002).

Retirement not associated with health: In contrast, other studies have found a lack of association between retirement and health. For example, a study by Ekerdt, Baden, Bosse and Dibbs (1983) compared changes in physical health from pre-retirement to post-retirement among those 55 to 73 years of age to that of those of the same age who continued to work. Participants were members of the Veterans Administration Normative Aging Study. Though there was a general trend of decreased physical health over the course of follow-up, significant differences between those that retired and those that continued to work were not observed. Similarly, a longitudinal study comparing retired and working individuals between the ages of 54 and 59 at baseline demonstrated a lack of difference in physical health between the two groups (Mein, Martikainen, Hemingway, Stansfeld and Marmot 2003). Also, a study of Israelis found retirement did not impact mortality, after adjusting for gender, age, income, education, reason for retirement and diagnosed illness (Litwin, 2007).

Retirement leads to better health: Retirement has also been found to predict positive health outcomes. For example, a study found that mental health functioning declined among those who continued to work, but improved among retired individuals even after adjusting for differences in baseline health functioning (Mein *et al.* 2003). It should be noted, however, that this improvement was only found among those of the highest socioeconomic status,

The transition from employment to retirement can be a complex process involving both re-entry into the workforce and partial retirement (Henretta 1997). Further, as described by Wang (2007), there are multiple patterns of change in psychological well being with retirement that can be predicted from a number of individual and contextual factors such as job satisfaction, marital status, actively engaging in retirement planning, retiring from a stressful job and holding a bridge job. Highlighting these differences in patterns of change in psychological wellbeing, Wang (2007) questions the accuracy of conceptualizing retirement as a uniform process and proposes that the apparent inconsistency in the literature examining the effects of retirement on well being might be accounted for by them. The inconsistency in the literature on the relationship between retirement and health might further be explained by considering individuals' attitudes toward this life transition.

Attitude towards Retirement: Consistent with the notion of the transition to retirement being a dynamic and heterogeneous experience is the existence of variability in attitudes towards retirement. A cross-sectional study by Fillenbaum (1971) that was conducted among non-academic employees at an American university and medical centre between the ages of 25 and 67 found that 65 per cent of the sample both viewed retirement positively and looked forward to it, whereas 16 per cent regarded retirement as a negative stage of life and did not look forward to it. Similarly, a recent international survey found that considerable variability exists in how individuals in different countries tend to conceptualize retirement. For example, in the United States 40 per cent of the respondents associate retirement with poor health and 78 per cent associate retirement with freedom, whereas in Hong Kong 71 per cent of the respondents associate retirement with poor health and 57 per cent associate retirement with freedom (Taylor 2006). The cross-cultural differences in attitudes toward retirement suggest that some of the meaning an individual assigns to retirement may stem from the individuals' cultural stereotypes about this life stage. The reason the current literature demonstrates considerable variability in the relationship between retirement and health may in part be due to these studies failing to consider how individuals view retirement. Indeed, ageing is influenced by social definitions and social constructs (Bengtson, Burgess and Parrott 1996). One's ability to form personal aspirations, to cope with the environment and one's sense of self are influenced by experiences pertaining to social labelling (Kuypers & Bengtson 1973). Thus, how an individual interprets retirement, whether it is perceived as a reward following a long career or the commencement of one's loss of value to society, may influence how this life stage is experienced (Neugarten 1996).

A number of studies have investigated the health effects of self-perceptions of ageing. In a prospective study by Levy and Myers (2004), for instance, individuals who held more positive self perceptions of ageing were more likely to practice preventive health behaviours (including eating a balanced diet, exercising, and following directions for taking prescribed medication) over the course of 20 years of follow-up than were those with negative self-perceptions of ageing. This finding remained statistically significant after adjusting for age, education, race, and both functional health and self-rated health at baseline. Other prospective studies have demonstrated that positive-self perceptions of ageing are associated with increased longevity, improved functional health and better physical health (Levy, Slade, Kunkel and Kasl 2002; Levy, Slade and Kasl 2002; Wurm, Tesch-Romer and Tomasik 2007).

The effect of one's attitude towards retirement on health outcomes has not been investigated to date. As in the case with self-perceptions of ageing in general, personally held beliefs about retirement specifically, might influence one's ability to effectively interact with one's environment and might therefore influence health beyond the effects of retirement itself. As ATR have been documented to be stable over time, it seems likely that early-reported ATR could predict health decades later (Goudy *et al.*, 1980). Thus, we hypothesized that a positive attitude towards retirement

would be associated with increased survival, even after controlling for relevant variables including age, gender, race, functional health, marital status, retirement status, and socioeconomic status. The present study was conducted with the Ohio Longitudinal Study of Aging and Retirement (OLSAR), a prospective, survey-based study that assessed ATR at baseline in 1975 and followed participants' survival over the next 23 years.

Methods

Participants

The OLSAR was designed as a longitudinal study of residents of a small town in Ohio who were over the age of 50 as of July 1, 1975 (Atchley, 1999). With the use of voter registration records, welfare records, a post-card census that was mailed to all addresses in the area, and a review of the telephone directory by long-standing members of the community, 1,805 prospective participants were identified. All prospective subjects were contacted and data was collected primarily by mail. Participants who were unable to complete the questionnaire, usually due to visual impairments, were followed-up over the telephone and interviewed.

For participation in the OLSAR individuals had to be residents of the community, be at least 50 years of age as of July 1, 1975 and had to be without cognitive impairment. Of those who met this criterion 1,157 (64.1 per cent) agreed to participate in the OLSAR. For the present study, two additional inclusion criteria have been imposed (see Figure 1). First, only those participants whose survival status (being either alive or dead) could be confirmed as of January 1, 1998 were included (for details about confirmation process see Levy *et al.* 2004). Second, we only included participants who completed the ATR questions, resulting in a final sample of 680. Information pertaining to age, gender and functional health was available for each of the 680 participants who met the inclusion criteria for bivariate analyses. However, 286 participants had missing information related to race/ethnicity, employment status, marital status or social status and were subsequently excluded from the multivariate analyses. This resulted in a sample of 394 participants for multivariate analyses. The excluded participants did not significantly differ from the 394 participants included in the multivariate analyses on attitude towards retirement ($F = 0.72$, $p = 0.397$).

Measures

Independent variable: The independent variable, Attitude Towards Retirement, (ATR), was assessed by asking participants what "best describes what you think about your life in retirement – and how your life is or will be during your retirement" (Atchley 1999). Participants were instructed to rate 14 pairs of adjectives. These pairs of adjectives included: sick – healthy, bad – good, inactive – active, sad – happy, immobile – mobile, uninvolved – involved, unable – able, dependent – independent, hopeless- hopeful, worthless – worthy, dissatisfied – satisfied, empty – full, idle – busy and meaningless – meaningful. For each pair, participants were instructed to select the score on a scale of one to seven that best reflected their life in retirement, such that a higher score indicated a more positive evaluation of retirement. For example, the meaningless–meaningful pair would score from 1 (extremely meaningless) to 7 (extremely meaningful).

A summary score was computed by averaging the adjective pair scores and multiplying by the total number of items (14). This was rounded to result in an overall score that ranged from 14 to 98. If more than two adjective pairs were missing, the scale score was recorded as missing. A categorical version of the scale score was created by dichotomising participants' scores based on the sample mean. Those with scores above the mean were classified as having a positive ATR, whereas those with scores below the mean were classified as having a negative ATR. Both the continuous and categorical versions of this variable were used in the multivariate analyses.

Outcome: Survival served as the primary outcome of interest. Date of death was ascertained from the National Death Index.

Covariates: Baseline characteristics including sex, age, race/ethnicity, marital status, employment status, socioeconomic status, and functional health were entered into the analysis as covariates. Marital status was classified into two groups (1. married; 2. never married, widowed, separated or divorced). Employment status was categorised into two groups (1. retired; 2. employed or housewife). Socioeconomic status was based on the Hollingshead Two-Factor Index of Social Position, which takes into account educational attainment and occupation (Hollingshead 1965). Lower scores on this index indicate a higher social status. Functional health was measured with Roslow and Breslau's (1966) Six-item Health Scale for the Aged.

Analyses

Chi-square tests and analysis of variance F-tests were used to assess demographic differences measured at baseline between those with positive scores on the ATR variable and those with negative scores on the ATR variable.

Kaplan Meier survival curves were calculated to assess differences in survival between the two attitude-towards-retirement groups, and were based on a follow-up period of approximately 23 years with mortality as the endpoint. The curves were compared to each other with the use of the Log-Rank statistic. Subsequently, tests of the

assumptions for proportional hazards were conducted. These included visually assessing the Kaplan Meier plot and incorporating time dependent variables into the Cox proportional hazards regression model. Once these assumptions were met, both univariate and multivariate Cox proportional hazards regression models were generated to test the hypothesis that having a more positive attitude towards retirement would be associated with a better survival. In the multivariate analysis, sex, age, race, retirement age, marital status, employment status at baseline, socioeconomic status, and functional health were entered into the model as covariates. Both the univariate and multivariate analyses were repeated using the continuous version of the ATR predictor variable.

Results

We had three primary goals in our analysis: one, to show that participants grouped into positive ATR and negative ATR do not differ at baseline. Two, use bivariate analysis to show that positive ATR is associated with better survival. We further stratify the analysis by employment status (employed/retired) to examine if the same results held up. Three, we used multivariate analysis to show that positive ATR is associated with better survival after controlling for covariates. In this section, we tested the robustness of our findings by stratifying the analysis by employment status and analyzing ATR as a continuous variable.

Baseline characteristics of the study sample: Demographic characteristics of the study sample are presented in Table 1. Baseline characteristics of the two groups, dichotomised according to the overall mean attitude towards retirement score are presented in Table 2. Those with a high score (a score above the mean of 80.35) have a more positive ATR, either at present or how they anticipate it ($p < .001$). At an alpha level of 0.05, the two groups do not differ by gender ($p = .056$), or marital status ($p = .081$). However, those with a positive ATR were more likely to be white ($p = .011$), have better functional health ($p < .001$), and be from a higher socioeconomic stratum ($p = .024$) than those with a negative attitude towards retirement. Further, those with a more positive ATR were younger ($p = .025$), and were less likely to be retired ($p = .003$) when compared to those with a more negative ATR.

Table 1. Baseline Demographic Characteristics of the Study Sample.

Characteristic	(N = 680) ^b
Age (years)	62.76 ± 9.27
Gender	
Male	305 (44.85)
Female	375 (55.15)
Race/ethnicity	
White	486 (97.59)
Black	12 (2.41)
Marital Status	
Never married	47 (7.04)
Widowed, Separated, Divorced	127 (19.01)
Married	494 (73.95)
Employment Status	
Retired	224(38.69)
Employed	334 (57.69)
Housewife	21(3.63)

^a Values are mean ± SD for continuous variables and n (column %) for categorical variables; ^b Numbers may not sum to total due to missing data, and percentages may not sum to 100% due to rounding.

Table 2. Baseline Characteristics of the Attitude Towards Retirement Groups. ^a

Characteristic	Attitude Towards Retirement Score		p ^c
	Negative (N = 261) ^b	Positive (N = 419) ^b	
Age (years)	63.77 ± 9.59	62.13 ± 9.01	0.025
Gender			0.056
Male	129(49.43)	176(42.00)	
Female	132(50.57)	243(58.00)	
Race/ethnicity			0.011 ^d
White	174(95.08)	312 (99.05)	
Black	9(4.92)	3 (0.95)	
Marital Status			0.081
Never married	18 (7.11)	29 (6.99)	
Widowed, Separated, Divorced	59 (23.32)	68 (16.39)	
Married	176 (69.57)	318 (76.63)	
Employment Status			0.003
Retired	99 (45.00)	125 (34.82)	
Employed	119 (54.09)	215 (59.89)	
Housewife	2 (0.91)	19 (5.29)	
Attitude Towards Retirement Score ^e	70.21 ± 9.83	86.67 ± 5.01	<0.001
Functional Health Scale Score	4.55 ± 1.62	5.16 ± 1.26	<0.001
Social Status ^f	31.08 ± 17.29	28.01 ± 15.27	0.024

^a Values are mean ± SD for continuous variables and n (column %) for categorical variables; ^b Numbers may not sum to total due to missing data, and percentages may not sum to 100% due to rounding; ^c P-value is for χ^2 test (or Fisher's Exact Test where indicated) for categorical variables or analysis of variance F-test for continuous variables; ^d P-value is based on the Fisher's Exact Test; ^e Assessment of one's life in retirement, calculated as the average score of non-missing items multiplied by the total number of items (14); ^f Hollingshead Two-Factor Index of Social Position in which higher values represent lower status.

Bivariate analyses: Over the 23 years of follow-up 64 per cent of those with a negative ATR and 48 per cent of those with a positive ATR died. Before the addition of covariates, those with a more positive attitude towards retirement had a better survival rate than those with a more negative attitude towards retirement. Based on a Kaplan-Meier analysis of participants' survival times, those with a positive ATR had a probability of surviving of 52.27 per cent while that among those participants with a negative ATR was reduced to 36.02 per cent (see Figure 1). Further, those with a positive ATR had a median survival benefit of 4.9 years. The two groups were compared through the use of the log-rank statistic, which indicated a statistically significant difference in survival experience ($p < .001$). This was confirmed with a univariate Cox proportional hazards regression model in which the dichotomous version of the positive attitude towards retirement variable was entered as the sole explanatory variable and mortality served as the outcome. In this analysis, once again, having a more positive attitude towards retirement was associated with better survival over the 23-year follow-up. In fact, the hazard ratio for all-cause mortality was 0.62 ($p < .001$), indicating that those with a less positive attitude towards retirement were 1.62 times as likely to die during follow-up relative to those with a more positive attitude towards retirement.

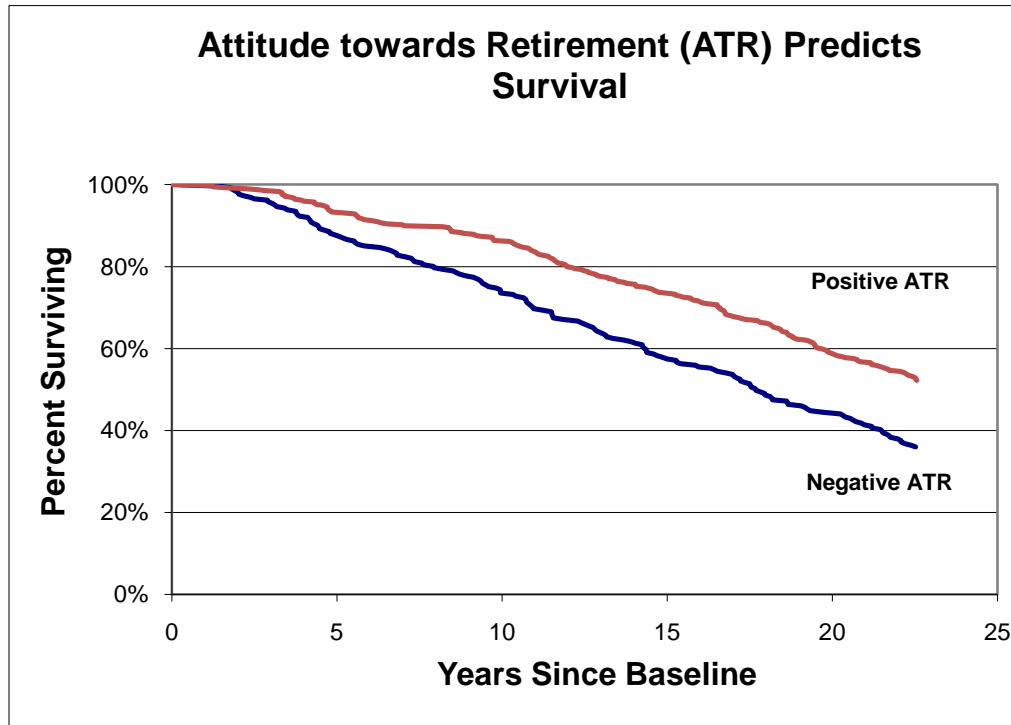


Figure 1: Positive Attitude Towards Retirement Predicts Survival

Stratified Analysis by Employment Status: To examine whether the effects varied by retirement status we stratified the sample according to whether or not participants had retired at baseline and observed similar findings in both groups. For retired participants, we found that positive ATR was associated with 31.94 per cent survival and a median survival benefit of 4.3 years over the those with negative ATR who had a lower survival rate of 13.86 per cent. The two groups were compared through the use of the log-rank statistic that indicated a statistically significant difference in survival experience ($p < .001$). The hazard ratio for all-cause mortality was 0.61 ($p < .001$), suggesting that participants with a less positive ATR were 1.61 times more likely to die during follow-up compared to those with a more positive ATR attitude towards retirement.

For participants *still working*, those with a positive ATR had a probability of surviving of 65.58 per cent while participants with a negative ATR was reduced to 53.78 per cent. Further, those with a positive ATR had a mean survival benefit of 1.2 years. The Log Rank test confirmed that these groups differed at $p < .05$. The hazard ratio for all-cause mortality was 0.67 ($p < .05$), indicating that those with negative ATR were 1.67 times as likely to die during follow-up relative to those with a positive ATR.

Multivariate analyses: A multivariate Cox proportional hazards regression model was conducted, in which the dichotomous version of the ATR score in addition to age, gender, race, marital status, employment status, functional health and social status were each included in the model as covariates. Having a positive ATR was still associated with better survival (hazard ratio = .586, $p < .001$) even after controlling for these covariates (see Table 3). This implies that after controlling for all covariates, those with a negative ATR were 1.71 times as likely to die relative to those with a positive ATR. Only three covariates, being female (hazard ratio = .555, $p < .001$), being older (hazard ratio = 1.07, $p < .001$) and having worse functional health (hazard ratio = .88, $p = .04$) significantly predicted mortality.

Additionally, we stratified the analysis by employment status and the results did not change. For those who have retired, having a positive ATR was still associated with better survival (hazard ratio = .546, $p < .001$) even after controlling for the aforementioned covariates. For those not retired, having a positive ATR was also associated with better survival (hazard ratio = .640, $p < .001$) even after controlling for covariates.

We repeated the same analysis, only this time ATR was entered into the model as a continuous variable. After controlling for functional health, gender, race, employment status, marital status, social status and age, having a more positive ATR was associated with a hazard ratio of .978 ($p = .001$), indicating that every one unit increase in one's positive ATR score was associated with a 2.2 per cent decrease in one's risk of death over the 22.56 year follow-up (see Table 4).

Table 3. Adjusted Cox Proportional Hazards Model: Categorical ATR Score

Variable	Hazard Ratio (95% CI) ^a	P
Positive ATR Score	0.59 (0.44-0.78)	<0.001
Functional Health Scale Score	0.88 (0.78-1.00)	0.042
Gender ^b	0.56 (0.40-0.78)	<0.001
Race/ethnicity ^c	0.96 (0.41-2.22)	0.920
Employment Status ^d	0.67 (0.42-1.06)	0.088
Marital Status ^e	0.91 (0.64-1.29)	0.578
Social Status ^f	1.00 (0.99-1.01)	0.377
Age (years)	1.07 (1.05-1.10)	<0.001

^a CI=Confidence Interval; ^b Males are the reference category; ^c Whites are the reference category; ^d Being retired is the reference category; ^e Being single is the reference category; ^f Higher values represent lower status

Table 4. Adjusted Cox Proportional Hazards Model: Continuous ATR Score

Variable	Hazard Ratio (95% CI) ^a	P
Positive ATR Score (continuous)	0.98 (0.97 – 0.99)	0.001
Functional Health Scale Score	0.91 (0.80 – 1.02)	0.110
Gender ^b	0.55 (0.39 – 0.76)	<0.001
Race/ethnicity ^c	0.95 (0.41 – 2.20)	0.902
Employment Status ^d	0.67 (0.42 – 1.07)	0.091
Marital Status ^e	0.93 (0.65 – 1.32)	0.669
Social Status ^f	1.00 (1.00 – 1.01)	0.311
Age (years)	1.07 (1.05 – 1.10)	<0.001

^a CI=Confidence Interval; ^b Males are the reference category; ^c Whites are the reference category; ^d Being retired is the reference category; ^e Being single is the reference category; ^f Higher values represent lower status

Discussion

Though the current literature has examined the effect of retirement on health, the results have been inconsistent between studies. Further, the influence of one's attitude towards retirement on health has not been investigated to date. In this study, a positive attitude towards retirement was shown to be protective. Those with this attribute at baseline had a significantly improved survival over the subsequent two decades, confirming our hypothesis. Participants with negative ATR had 1.71 higher risk of death as compared to those with positive ATR after controlling for age, gender, race, marital status, employment status, functional health and social status. When ATR was analyzed as a continuous variable, a one-unit increase in positive ATR was associated with a 2.2 per cent *decrease* in mortality. This effect remained after controlling for numerous factors thought to influence health outcomes. Retirement status was one of these factors, which itself was not predictive of mortality. This is consistent with studies by Ekerdt and colleagues (1983) and Mein and colleagues (2003) that do not show an association between retirement and subsequent physical health outcomes.

The finding that ATR predicts longevity was found in both those who had already retired and those who were still working at baseline, even after adjusting for relevant covariates. This suggests that the beliefs about retirement may be important both as one prepares for retirement and after one has started retirement and is adjusting to a new life. At both stages, if one is able to envision retirement as a time that allows for a meaningful and active lifestyle, however the individual defines these concepts, this attitude may act as a source of inspiration as an individual plans activities.

Positive self-perceptions of ageing in general are associated with increased longevity (Levy *et al.* 2002b). As the study presented here indicates, positive attitudes towards retirement are also associated with increased longevity. Thus, it is possible that attitude towards retirement is a subset of overall beliefs about ageing. In the study by Levy *et al.* (2002b) those with a more positive self-perception of ageing had a median survival advantage of 7.6 years. In the study presented here, a more positive attitude towards retirement was associated with a median survival advantage of 4.9 years. Thus, though having a positive attitude towards retirement is protective, the survival benefit might not be as strong as that provided by having a positive attitude towards ageing in general. However, as more than half of the sample with a more positive attitude towards retirement survived the period of follow-up, with a greater length of follow-up the survival benefit might approach that derived from having a positive attitude towards ageing in general.

The mechanism through which one's attitude towards retirement impacts survival is not yet clear, but might involve both behavioural and physiological processes. The relationship might be explained by one's willingness to engage in healthy behaviours. It has been shown that those with more positive self-perceptions of aging are more likely to perform preventive health behaviours, such as following directions for taking pharmacologic therapy (Levy & Myers, 2004). Thus, it is plausible that those with more positive ATR would also be more likely to engage in such behaviours. Further, the mediating factor between ATR and longevity might consist of a physiological mechanism. Evidence for biological manifestations of psychological processes is pervasive. For instance, chronic stress and depression have been shown to increase risk of cancer through the activation of the hypothalamic-pituitary-adrenal (HPA) axis and an associated impairment of the immune system (Reiche, Nunes, & Morimoto 2004). Another study on construction workers found that earlier retirement was associated with increase liver enzyme activity—a precursor of liver cancer—and mortality (Arndt et al., 1998). Further, behavioural and physiological factors may work collectively. In a review of 45 papers on factors affecting retirement mortality, Brown and McDaid (2003) found that a change in phase from employment to retirement may impact eating habits and this relation is augmented by negative attitudes. Obesity is associated with low cardiovascular fitness, elevating the risk of cardiovascular diseases (Wei et al., 1999) that leads to subsequent mortality. Taken together, the ATR-mortality link is not only mediated by behavioural or physiological factors but a complex coupling of both. In future research, it would be interesting to examine the origin of these ATR. Studies could be conducted on how early in life individuals develop ATR and how much these ATR are influenced by media and marketing. In our study, we found that those who are younger, of better functional health, higher SES and who are White had more positive ATR. Perhaps individuals in these groups tend to have more positive retirement role models. It is also possible that individuals in these groups have better resources available during retirement, which impacts the way they think about their retirement. Others have found that among those with a high SES, retirement led to better health (Mein et al. 2003). In our analyses, however, we included social status in the multivariate models, and it appears that positive ATR still predicted longer survival above and beyond this factor.

In future studies, it will be important to examine these effects in other cultures, and, if possible, with larger samples that allow stratification into types of jobs and job histories. Although the current study had a sample 394 participants, the sample was only large enough to stratify by currently employed and currently retired. Future research could also benefit from examining the relationship between ATR and survival in samples with a greater proportion of minorities, in other regions of the country and in other countries. In addition, future studies could benefit from asking more detailed health history questions. In our study, however, we found that the results remained after adjusting for functional health and self rated health. Future investigations might also seek to elucidate the mechanisms underlying the relationship between attitude towards retirement and survival and the best way to bolster positive attitudes toward retirement.

Some evidence exists that ATR are malleable. A study of industrial workers nearing retirement found that positive expectation of finances, friends, social activity, and level of preparedness were all significant predictors of more positive ATR (Glamser, 1976). The author recommended retirement counseling become part of retirement preparation. Shouksmith (1983) designed an intervention in the form of a pre-retirement planning seminar. He did a pre-post assessment of ATR using the same scale of our study (Atchley, 1999) and found that gains in positive attitudes were highest among participants who had not thought about retirement, but for whom it was impending.

In today's working world emphasis is given to financial planning for retirement. Our findings suggest that individuals would also benefit from seeking out positive examples of retirement and finding ways to make their own retirement as personally meaningful as possible.

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Contact Information (Header 1)

Your comments and questions are valued and encouraged. Contact the author at:

Reuben Ng
Yale School of Public Health
60 College Street, P.O. Box 208034
New Haven, CT 06520-8034
Phone: 203-785-6383
Fax: 203-785-7356
E-mail: reuben.ng@yale.edu; reuben_ng@hotmail.com
Web: <http://publichealth.yale.edu>

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