Retirement, Children, and Later-Life Mental Health among Older Americans

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This paper is a draft of my senior honors thesis. It is work in progress.

ABSTRACT

Past research has typically investigated the health effects of retirement and children separately. Few studies have examined how retirement and children may each uniquely and interactively affect the psychological well-being of older Americans. Using the Health and Retirement Study, this paper examines how the relationship between retirement and later-life mental health may depend on the presence of, and perceived future support from, children. Results indicate that for men and women, there is no significant difference between retirees and workers in reported number of depressive symptoms; for women, childlessness and lack of perceived future support from children are associated with more depressive symptoms; for men, the presence of, and perceived support from, children help to lower the chances for depressive symptoms only for non-retirees. In light of projected delays in retirement and increasing childlessness, this study underscores the importance of promoting supportive relationships between elderly parents and their children for better later-life mental well-being.

INTRODUCTION

The proportion of the population aged 65 and over in the U.S. is projected to increase from 12.4% in 2000 to 19.6% in 2030 (US Census Bureau 2001). Concern over the pressure of population aging on the public health system has motivated numerous research projects to investigate the predictors of later-life health in recent decades. Past research has examined many social determinants of later-life health, including elderly's educational attainment, marital status, and gender (Dupre 2007; Hughes and Waite 2009; Zhang and Hayward 2006). This study focuses on the association between retirement and the presence of, and perceived support from, children, and later-life mental health. Specifically, I ask: (1) is full or partial retirement related to better or worse mental health than non-retirement; (2) do childless elderly, elderly parents expecting no future support from their children, and elderly parents expecting some future support from their children, differ in psychological well-being; and (3) how might the presence of, and perceived support from, children moderate the relationship between retirement and mental well-being.

Recent trends in expectations of delayed retirement, growing number of "bridge jobs," and increases in childless elderly underscore the significance of research on the relationship between retirement, children, and later-life health. Based on 2002 data from the Health and Retirement Study, an increasing proportion of people in their early to mid-50s expect themselves to be working full-time after age 65. If retirement promotes later-life health, delayed retirement might induce more costs on the public health system. If retirement deteriorates later-life health, social and economic policies may provide

support for retirees to better adapt to retirement and for non-retirees to continue their engagement in the labor force. In addition, a rapidly growing number of older Americans now take on "bridge jobs" in their "phased retirement" transition from full employment to full retirement (Gustman and Steinmeier 2000). Understanding how partial retirement may affect later-life mental well-being differently as compared to full or delayed retirement is thus especially important under current context. Finally, according to the 2008 Current Population Survey (US Census Bureau 2010), 17.8% of American women aged 40 to 44 are childless, a substantial increase from 10.1% in 1980. If the presence of children promotes mental health, an increasing burden on the public health system might be expected as the childless elderly population continues to grow. This research on the relationship between retirement, children, and later-life mental health is thus a valuable source of insight into how societal trends toward delayed retirement, growing of "bridge jobs," and increasing childlessness will shape elderly health consequences in the coming years.

THEORETICAL FOCUS

Past research has mostly investigated the health effects of retirement status and children separately. Almost no studies have included retirement and children simultaneously as predictors of later-life mental health to examine how retirement and children may each uniquely and interactively affect the psychological well-being of older Americans. This study aims to tie together existing literature on the effects of retirement and children on later-life mental health and the buffering hypothesis of the protective effects of social support against stressors and examines how the relationship between retirement and later life psychological well-being may depend on childlessness and perceived support from children.

Retirement and Mental Health in Later Life

Prior studies have found contradictory effects of retirement on later-life mental health. On the one hand, retirement is viewed as a *crisis* that is detrimental to mental well-being, as it induces changes in the occupational roles, financial stability, and social networks of individuals (Dave, Rashad, and Spasojevic 2006; Bosse, Aldwin, Levenson, and Ekerdt 1987). Based on the Health and Retirement Study 1992-2005, Dave et al. (2006) find that, controlling for the endogeneity bias that pre-retirement health status may affect retirement decisions, complete retirement is associated with increases in depressive symptoms

and psychological problems. On the other hand, retirement may provide older adults an *opportunity* to continue to invest in their important life roles other than that of worker, which facilitates a continuation of self-esteem after retirement and is thus beneficial to psychological well-being (Dorfman 2002). Midanik, Soghikian, Ransom, and Tekawa (1995) find that retirement is associated with lower levels of stress, though there is no difference between retirees and workers in depressive symptoms and self-reported mental health status. Most studies, however, report no or weak net relationships between retirement and various measurements of mental health (e.g. Herzog, House, and Morgan 1991; Palmore, Fillenbaum, and George 1984). Palmore et al. (1984) suggest that retirement have "substantial effects only on those outcomes directly and necessarily linked to retirement" and have little effects on indirect outcomes such as health. In other words, much of the difference in health between non-retirees and retirees can be explained by conditions surrounding retirement transitions.

One possible explanation for such inconsistency in existing work on the relationship between retirement and mental well-being is that most work focuses on "the average effects of retirement" (Coursolle, Sweeney, Raymo, and Ho 2010) , while how retirement impacts later-life mental health might be conditional on the economic, personal, and social-relational resources surrounding retirement transitions, including income adequacy and pre-retirement job characteristics (economic resources), pre-retirement psychological well-being (personal resources), and marital status and marital quality (social resources) (Kim and Moen 2002). In addition, much prior research is limited in that it relies on cross-sectional data and thus is unable to control for pre-retirement circumstances that might select certain people into retirement (Drentea 2002; Herzog, House, and Morgan 1991). Other studies, though using longitudinal data, are based on small selected samples (Midanik et al. 1995) that are not generalizable to the American population.

In light of existing research, this study utilizes longitudinal data from the Health and Retirement Study and controls for many economic, personal, and social-relational resources surrounding retirement transitions that might affect how retirement affects later-life mental health, including pre-retirement mental and self-reported health status, prior job stress, age, gender, race/ethnicity, educational attainment,

marital status, and household income. To further investigate how the relationship between retirement and mental well-being may vary by contextual factors surrounding retirement transition, this study examines how such relationship may differ by the presence of, and perceived support, from children. It is also important to note that retirement transition is more complex than a simple dichotomy between full-time employment and full retirement and partial retirement is a "separate mode of retirement behavior" distinct from either full-time employment or full retirement (Honig and Hanoch 1985). Hence, this study employs respondents' self-reported retirement statuses and keeps the distinction among non-retirees, partial retirees, and full retirees.

Childlessness, Perceived Future Support from Children, and Later-life Mental Health

In terms of the health effects of children, conventional beliefs about the value of adult children suggest that children serve as sources of emotional, economic, and social support for the elderly and thus have positive effects on later-life health (Zhang and Hayward 2001). Children provide "a sense of meaning and order to life" (Buber and Engelhardt 2008: 32), help to monitor their parents' health (Plotnick 2009), and provide long-lasting support that relatives, friends, and neighbors are less likely to offer (Zhang and Hayward 2001). Contrary to these standard beliefs, however, much existing literature finds few significant differences between elderly parents and childless elderly in later-life mental well-being (Rempel 1985; Koropeckyj-Cox 1998; Zhang and Hayward 2001). The inconsistency between standard hypotheses and results of many empirical studies may reflect an implicit assumption that all elderly parents would indeed receive instrumental or emotional support from children if needed and undervalue the important role of nonkin relationships in supporting childless elderly, especially those who voluntarily chose to remain childless (Koropeckyj-Cox 1998). In fact, how parenthood relates to psychological well-being is likely to be conditional on the quality of parent-child relationships, which in part reflects the likelihood of elderly parents receiving support from children at present and in the future (Koropeckyj-Cox 2002). Using the 1988 National Survey of Families and Households, Koropeckyi-Cox (1998) finds that divorced older parents are more likely to have depressive symptoms than their married counterparts, probably because divorce increases family stresses and weakens the relationship between

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children and divorced parents.

Hence, this study goes beyond treating parenthood as a binary state of being a parent or childless and examines how childless elderly, elderly parents expecting some future support from children, and elderly parents expecting no future support from children differ in terms of later-life mental well-being. The premise is that it may not be parenthood per se that promotes later-life mental well-being, but perceived support from children is associated with better mental health in later life. As Glenn and McLanahan (1981) suggest, "the mere knowledge that offspring are there to help if they are needed could contribute substantially to the psychological well-being of the elderly" (p. 411). I use perceived future support instead of actual received support from children as the indicator of whether children are indeed sources of instrumental and emotional support for elderly parents because most survey research over the past two decades suggests that most parents and adult children are not currently involved in routine, intensive exchanges of mutual instrumental support but are willing to provide support if needed in the future (Swartz 2007). This is probably because much of the elderly population in the United States remains healthy and self-sufficient until a relatively short period near the end of life when serious illness is concentrated. Although "manifest solidarity" (actual emotional and instrumental support) in parent-adult child relationships is less common, "latent solidarity" (cognitive aspects of the relationships that encourage family members to want to help each other) will foster "manifest solidarity" when family members are in need of help (Swartz 2007).

Perceived Future Support from Children as a Stress Buffer

As discussed earlier, how retirement impacts later-life mental health might depend on the economic, personal, and social-relational resources surrounding retirement transitions (Kim and Moen 2002). With respect to social-relational resources, although much has been learned about how the health effects of retirement might be conditional on marital quality, almost no studies have examined how the presence of, and perceived support from, children might moderate the impacts of retirement on later-life mental well-being. Based on the stress buffering hypothesis (Cranford 2004), this study addresses this gap and examines how the effects of retirement on later-life mental well-being may be conditioned on the

presence of, and perceived future support, from children. The stress buffering hypothesis, suggesting that social support might serve as a coping resource to buffer the negative health effects of stressors (Cohen and McKay 1984; Thoits 1995), provides the theoretical foundation for examining how children, if perceived by their elderly parents as willing to provide support in the future if needed, might alleviate the stress of acute life changes induced by retirement or the chronic strains of remaining in the labor force among the elderly. According to the stress buffering hypothesis, psycho-biologically, social support helps to "minimize the perception of a disruptive event as stressful and moderate physiological reaction to the event", and social-behaviorally, social support "facilitates an adaptive behavior response to the event" (Silverstein and Bengtson 1991). In the case of the interaction between retirement and children, children, as a form of social support, may provide emotional succor that minimizes elderly parents' perception of retirement or continual employment as stressful, and meanwhile, as a form of social control, may encourage health-promoting behaviors and discourage health-risking behaviors of their elderly parents in response to retirement or continual employment.

Tying together existing literature on the effects of retirement and children on later-life mental health and the buffering hypothesis of the protective effects of social support against stressors, I hypothesize that, controlling for individual socioeconomic and demographic characteristics:

1.1. Retirement is positively associated with later-life depressive symptoms if, on average, it is a stressful life event that deprives older adults of their social connections and roles at work, sources of income, and purpose of life;

1.2. Retirement is negatively associated with later-life depressive symptoms if, on average, it allows older adults to pursue other roles that were less accessible prior to the retirement;

1.3. The average association between retirement and mental health is insignificant, if, on average, most of the differences in mental health by retirement status can be explained by conditions surrounding retirement such as income and prior job stress, or the stress of retirement offsets the psychological benefits of retirement.

1.4. The direction of the difference in later-life depressive symptoms between partial retirees and

non-retirees, on average, follows the direction of difference between full retirees and non-

retirees. However, as partial retirees may still be involved in some sort of employment, I expect

the magnitude of the difference in later-life depressive symptoms between partial retirees and

non-retirees is smaller than the magnitude of difference between full retirees and non-retirees.

2.1 Childless elderly are more likely to have depressive symptoms than elderly parents expecting

some future support from children, as children are important sources of emotional, economic,

and social support for the elderly.

2.2. Elderly parents expecting no future support from their children are more likely to have

depressive symptoms than those expecting some future support from their children, as the

relationship between parenthood and later-life mental health is conditional on whether children

are indeed perceived as sources of social support for elderly parents.

3.0. Whether retirement is a stressful life event or an opportunity for alternative roles, perceived

future support from children dampens the difference in depressive symptoms between

full/partial retirees and non-retirees.

DATA AND METHODS

Sample

The Health and Retirement Study (HRS) is a multidisciplinary, longitudinal, and nationally

representative study that follows more than 26,000 Americans over age 51, with interviews administered

every two years. Funded by the National Institute on Aging and conducted by the University of Michigan,

it is the leading source of comprehensive data on older Americans' health, retirement, and socioeconomic

characteristics. This study uses on data from the original HRS cohort from waves 1 through 10 (1992-

2010). The original HRS cohort is multi-stage area probability sample of U.S. households with

oversamples of Blacks, Hispanics, and residents of the state of Florida. Respondent level weights are

applied in the data analyses so that the original HRS cohort is representative of non-institutionalized adults, born during the years 1931-1941, who reside in households in the contiguous United States. The response rates of the original HRS cohort in waves 1 to 9 all exceed 80%. At the baseline interview in 1992, the total number of age-eligible respondents of the original HRS cohort was 9,763.

In this study, I will treat the data as repeated cross-sections, while still making use of their longitudinal information. The units of analysis are person-wave observations rather than persons. The final analytic sample is restricted to respondents who had not yet retired at wave T-1, regardless of their retirement statuses at wave T. For each respondent, the dependent variable, the Center for Epidemiology Studies Depression (CES-D) Score, and retirement status, are measured at wave T, while all other independent variables are measured at wave T-1. This way, I focus on the short term relationship between retirement and emotional well-being. The duration between retirement and reported mental health status is two years or less. However, it is important to note that the relationship between retirement and mental health vary by the length of retirement. The first two years of retirement may be within the "honeymoon" phase proposed by Atchley (1976), during which the retirees enjoy pursuing their desired retirement plans and new activities (Kim and Moen 2002). Results of this study thus should not be generalized to other lengths of retirement.

Wave T-1 ranges from 1994 to 2008. Correspondingly, wave T ranges from 1996 to 2010. Wave 1 is not used as the baseline wave (i.e. wave T-1) because the measurement of CES-D score at wave 1992 is different from that in Wave 2 and onwards. But I will derive respondents' parenthood/childlessness from wave 1 data and treat parenthood/childlessness as time-invariant. Therefore, the 9763 age-eligible respondents of the original HRS cohort could generate a maximum of 78,104 person-wave observations (9,763 persons times 8 waves). Among these person-wave observations, 59,005 observations were excluded due to the restriction that one had not yet retired at wave T-1. 28.3% of these lost observations were completely retired at wave T-1, 9.6% were partly retired, the question about retirement status is irrelevant to 9.8% of these lost observations, and 27.8% of them had missing data on retirement status at wave T-1. 866 observations to whom the question about current retirement status is irrelevant at wave T

(i.e. homemakers, self-employed respondents, and respondents who have not worked for one or more years) were excluded from the analysis. Finally, 2,471 observations with missing data on any of the variables of interest were excluded. The majority (73.3%) of these observations were excluded because of missing data on self-reported retirement status at wave T. The resulting number of respondent-wave observations in the final analytic sample is 15,762 (from 5,220 respondents). Figure 1 explains the process of generating the final analytic sample graphically.

To investigate whether the 2,471 person-wave observations excluded from the analysis due to having missing values of some variables in interest are systematically different from the analytic sample, I conducted a series of t-tests to compare group mean differences in demographic and socioeconomic characteristics. Compared to the observations included in the analytic sample, excluded observations with missing values on some variables in interest are less likely to be childless, Non-Hispanic White, college-educated, never married, and less likely to rate health status at wave T-1 as "excellent" or "very good". Excluded observations are more likely to be Non-Hispanic Black, Hispanics, with less than high school education, and more likely to be report health status at wave T-1 as "fair" or "poor". The excluded observations also have a higher mean age than the included. The excluded and included observations, however, do not differ in terms of total household income at wave T-1.

Despite such differences, this strategy of data use is most suitable for this study because using the longitudinal property of the HRS survey helps to address potential problems arising from the endogeneity of retirement and mental health, as pre-retirement health status is found to be associated with individual's retirement plan (Dwyer and Mitchell 1999). By restricting the analytic sample to non-retirees at wave T-1, measuring mental health at wave T, and controlling for retirement status at wave T and mental health status at wave T-1, I can be more confident that retirement precedes the mental health outcome of interest and that the association between retirement and later-life mental health outcomes is not due to pre-retirement health conditions that select certain people into retirement. Admittedly, the resulting observations are not independent from each other, as most of them represent responses from the same respondent at different waves. Therefore, I will adjust the standard errors in the negative binomial

regression models presented below using standard methods. All statistics presented in this study are weighted by the respondent-level weight at wave T, the same wave at which the dependent variable is measured.

Measures

Dependent Variable: CES-D Score at Wave T

The dependent variable is older adults' mental health status at wave T, measured by Center for Epidemiology Studies Depression (CES-D) Scale. The CES-D scale "is a short self-report scale designed to measure depressive symptomatology in the general population" (Radloff 1977: 385) and is widely used in existing literature as an indicator of mental well-being. It is worth noting that the CES-D scale measured in the HRS since wave 2[1] differs from the original CES-D scale developed by Radloff (1977) in the number of items (8 items in HRS vs. 20 in the original definition) and response format (yes/no response in HRS vs. four-point Likert scale in the original definition). But the abbreviated 8-item CES-D scale used in the HRS still show good internal consistency and construct validity in reflecting the underlying level of psychological distress and depression (Steffick 2000) The CES-D score in the HRS, ranging from 0 to 8, is the sum of six "negative" binary indicators and two reverse-coded "positive" binary indicators (Appendix 2 provides the wording of the corresponding survey questions of these indicators). The negative indicators measure whether the respondent experienced the following sentiments much of the time in the past week (1= yes, 0=no): depression, everything was an effort, sleep was restless, felt lonely, felt sad, and could not get going. The positive indicators measure whether the respondent felt happy and enjoyed life, much of the time in the past week. The two positive indicators are reverse coded, so that 1 refers to *not* feeling happy or *not* enjoying life. Thus the higher the score, the more negative the respondent's feelings in the past week and the worse the respondent's mental well-being. The mean CES-D score at wave T of the final analytic sample is 1.06 with a standard deviation of 1.65. The distribution

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[1] In HRS wave 1, the questionnaire asked the respondents to indicate how often they have experienced 11 items all or almost all of the time, most of the time, some of the time, or none or almost none of the time. However, for the simplicity of telephone administration, 3 items were dropped and the respondents only need to evaluate whether or not they have experienced 8 items much of the time this past week (Steffick 2000).

of the CES-D scores is skewed to the right, with 54.35% of the person-wave observations having a zero

CES-D score. Overall, the respondents have relatively good mental health. In fact, less than 4% of the

analytic sample scored 6 or higher on the 0-8 scale. The mean CES-D score at wave T of women is 1.2,

statistically significantly higher than that of men, 0.91.

Independent Variables

Self-reported Retirement Status at Wave T

As a rapidly growing number of older Americans now take on "bridge jobs" in their "phased

retirement" transition from full employment to full retirement (Gustman and Steinmeier 2000), the

meaning of the term "retirement" varies significantly by individuals' or institutions' own

conceptualizations. Past research using objective measures of retirement focused on individuals' labor

force characteristics, such as withdrawal from the paid labor force, reduction in hours worked, or receipt

of pension benefits (Denton and Spencer 2009). While these institutionalized retirement definitions are

correlated with individuals' self-definitions of retirement, whether one identifies as a retiree also depends

on other life circumstances such as spouse's employment status and gender (Szinovacz and DeViney

1999). The measurement of retirement status in this study is the respondent's self-definition of retirement

status, following Coursolle et al. (2010)'s argument that "an individual's perceived retirement status is

most meaningful for understanding emotional well-being" (p. 611). The premise is that if one is asked

whether retirement transition is a stressful *crisis* that induces significant life changes or an *opportunity* for

investments in important life roles other than that of a worker, the person first needs to consider whether

he/she thinks that he/she is in the stage of undergoing significant life changes or receiving increasing

opportunities for investments in other important life roles, i.e., whether one perceives oneself in the

transition to retirement or not. The HRS asks whether the respondent considers himself/herself completely

retired, partly retired, or not retired at all. This question is irrelevant to homemakers or those who do not

work for pay or who have not worked for one or more years. Given that the primary focus of this study is

to contrast non-retirees with partial retirees and complete retirees, respondents who are homemakers or

unemployed are excluded from the analysis. As discussed earlier, in order to account for the endogeneity

of retirement and mental health, the final analytic sample is restricted to respondents who have not yet retired at wave T-1. Respondent's perceived retirement status at wave T is thus the key independent variable in this study indicating whether retirement is associated with later-life mental well-being in the short term (two years or less). The duration of retirement and reported mental health status ranges from one day to two years. In the final analytic sample, 72.75% of the person-wave observations are not retired, 12.94% are partly retired, and 14.31% are completely retired. Men are significantly more likely to be partly retired than women, but equally likely to be not retired or completely retired.

<u>Childlessness and Perceived Future Support from Children</u>

In this study, I am interested not only in how the presence of children is related to later-life mental health, but also how perceived future support from children may affect psychological well-being of elderly parents. Hence, the final analytic sample is categorized into three groups given each respondent's parenthood/childlessness and perceived future support from children: childless elderly, elderly parents who expect no future support from children, and elderly parents who expect some future support from children. Respondents' parenthood/childlessness is treated as time-invariant and is derived from the number of living children or step children of the respondent and spouse at wave 1992 (the first HRS wave). If the respondent and spouse had no living children at wave 1992, the respondent is considered childless; if the respondent and spouse had at least one living child at wave 1992, the respondent is considered a parent. Admittedly, some respondents may become childless at later waves due to deaths of children and others may become parents due to adoption. In the final analytic sample, only 244 persons' parenthood/childlessness is inconsistent across waves and these 244 individuals contribute 708 person-wave observations. However, it is unclear whether the inconsistency is due to adoption or deaths of children or misreporting. As regression results are not sensitive to whether these 708 person-wave observations are included or excluded, the final analytic sample does not exclude these cases.

Perceived future support from children is derived from respondents' responses to the question "Suppose in the future, you needed help with basic personal care activities like eating or dressing. Do you have relatives or friends who would be willing and able to help you over a long period of time? If yes,

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what is the relationship to you of that person?" Respondents who are parents perceive no future support from children if they do not identify any child(ren) who would be willing and able to help. Respondents who are parents perceive some future support from children if they indicate at least one child who would be willing and able to help. As this question is only asked consistently from wave 1996 to 2010 and is tested in the experimental module on 822 respondents in 1994, perceived support from children needs to be imputed for some respondents in wave 1994. In the final analytic sample, 4,379 respondents' wave 2 data are used, 310 of which are childless and 301 responded to the experimental module. Among the remaining 3,768 respondents whose responses on perceived support from children need to be imputed, 1,495 of them reported consistent perceived support/ no support from children in waves 3 onwards. I thus imputed their responses in wave 2 as consistent with their responses since wave 3. For the remaining 2,273 respondents who provided inconsistent responses to perceived support from children, I tested two ways of imputation, imputing their responses in wave 2 as their responses in the most recent wave available, and imputing their wave 2 responses as the most prevalent response since wave 3. There are minimal differences in the results of these two imputation methods. Only 601 respondents' imputed responses on perceived support from children differ by the method. In addition, regression results are not sensitive to whether I use one way or another. For consistency, I used imputed their responses in wave 2 as their response in the most recent wave available. Figure 2 explains the process of imputation graphically.

In the final analytic sample, 8.55% of the person-wave observations are childless, 44.03% are elderly parents who perceive no future support from children, and 47.43% are elderly parents who perceive some future support from children. Men and women differ significantly in terms of childlessness and perceived support from children. Men are more likely to be childless and to perceive no future support from children and less likely to perceive some support from children than women.

Mental and Self-rated Health at Wave T-1

In order to further address the issue of endogeneity of retirement and mental health, in addition to restricting the analytic sample to those respondents not yet retired at wave T-1 and controlling for

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retirement status at wave T, respondents' mental and self-rated health conditions at wave T-1 need to be controlled. In other words, I am modeling change in CES-D scores as a function of change in retirement status. In this way, we can be more confident that the association between retirement and later-life mental health outcomes is not due to pre-retirement health conditions that select certain people into retirement. Respondents' prior mental health status is measured by their CES-D scores at wave T-1. The distribution of CES-D scores at wave T-1 is similar to that of CES-D scores at wave T. The mean CES-D score of women is 1.14, statistically significantly higher than that of men, 0.86.

The HRS also asks respondents to rate their general health status, whether excellent, very good, good, fair, or poor. 21.42% of the analytic sample rated their health as "excellent" at wave T-1, over 66% rated their health as "very good" or good, about 10% rated "fair", and only 1.57% rated "poor". Men and women do not differ much in terms of self-reported general health status.

Demographic and Socioeconomic Characteristics at Wave T-1

Respondents' demographic and socioeconomic characteristics at wave T-1 including age, sex, race/ethnicity, marital status, highest degree of education, prior job stress, and household income are included to control for potentially spurious associations between retirement, children, and mental health. In this study, respondent's age is measured as age in years at the end of the interview at wave T-1. The reason to use age at the end rather than the beginning of the interview is that according to the HRS, when beginning and ending interview dates are different, most of the interviews are usually conducted on the ending date. In the analytic sample, the person-wave observations' ages range from 52 to 77, with a mean of 60. The mean age of men is very close to that of women. This study categorizes respondent's race/ethnicity into four groups: Non-Hispanic Whites, Non-Hispanic Blacks, Non-Hispanic Others, and Hispanics. The majority of the analytic sample (83.5%) is Non-Hispanic White, 8.3% are Non-Hispanic Black, and about 5.6% are Hispanics. I use a five-group categorization of marital status: married (including spouse absent), partnered, separated/divorced, widowed, and never married. About 69% of observations in the analytic sample are married, 15.6% are separated or divorced, and 9% are widowed. Compared to women in the sample, men are more likely to be married and partnered but less likely to be

divorced, widowed, or never married. Highest degree of education is classified into four groups: less then

high school, high school diploma/GED, some college, and college or higher. About 85% of the analytic

sample earned at least a high school diploma or equivalent. The HRS asks whether the respondents

strongly agree, agree, disagree, or strongly disagree with the statement that "my job involves a lot of

stress". 5.31% of the final analytic sample was not working at wave T-1 (although they consider

themselves as not retired at wave T-1) and thus this question does not apply for them. In the final analytic

sample, over half (55.86%) of the person-wave observations either strongly agree or agree that their jobs

at wave T-1 involve a lot of stress. 4.14% strongly disagree that their jobs involve a lot of stress. Women

are more likely than men to strongly agree that their jobs involve a lot of stress, but are less likely than

men to agree or disagree that their jobs involve a lot of stress. Women are also more likely to be not

working at wave T-1 but consider themselves as "not retired" than men. Total household income in the

last calendar year at wave T-1, reported in dollars, is another measure of the socioeconomic status of the

respondent in addition to respondent's educational attainment. Total household income of the respondent

and spouse is the sum of all income in the household, including wage/salary, household capital income,

employer pension, social security benefits, unemployment and workers' compensations, veterans'

benefits, welfare, food stamps, and all other household income. The mean total household income of last

calendar year at wave T-1 in the analytic sample is $78,287 with a standard deviation of $149,995. The

mean total household income of men ($94,899) is significantly higher than that of women ($62,439).

Analytic Strategy

Given that the dependent variable, CES-D score at wave T, is a count variable skewed to the right

(Figure 3 in Appendix 1 illustrates the weighted distribution of the CES-D score), Poisson regressions or

negative binomial regressions are more appropriate than ordinary least squares regressions.

Postestimation evaluation of the Poisson regression models suggest that the distribution of CES-D scores

at wave T does not follow a Poisson distribution and may be overdispersed. Therefore, negative binomial

regression models are estimated in both bivariate and multivariate analyses. Post-estimation results

suggest that the negative binomial models fit the observed data well (see Figure 4 in Apendix 1).

As discussed earlier, this study is to examine three associations, partial effects of retirement on later-life mental health, partial effects of the presence of, and perceived future support from, children on psychological well-being of older adults, and moderating effects of the presence of, and perceived support from, children on health consequences of retirement. Therefore, an additive multivariate model and an interactive multivariate model will be estimated. The additive multivariate model, i.e., multivariate model without the interaction between retirement and children, estimates the partial effects of retirement and children on later-life mental health. The interactive multivariate model, i.e., the multivariate model with the interaction between retirement and children, examines whether children moderate the effects of retirement on later-life mental health. In multivariate analyses presented in the results section, respondents who are not retired and elderly parents who perceive some future support from children are the reference groups, in order to highlight the health effects of retirement and perceived support from children. In addition, respondents who rated their general health as excellent, who strongly agree that their jobs at Wave T-1 involve a lot of stress, who are married, Non-Hispanic White, male, and have at least college education are the reference groups, given that they tend to be groups with better later-life mental health based on previous studies. Previous studies have shown that women tend to report higher scores on measures of depression (Fernandez et al. 1998), have more negative attitudes towards retirement than men do (Kim and Moen), and have closer parent-child relationships than men do (Lye 1996). Therefore, it is also important to investigate whether the relationship between retirement, childlessness, perceived support from children, and mental health differs by gender. For this reason, I also run the additive and the interactive models by gender.

To illustrate, the additive model and the interactive model can be expressed as below:

Additive Model:

$$\log CESD_t = \beta_0 + \beta_1 Retirement_t + \beta_2 Children_{t-1} + \beta_3 CESD_{t-1} + \beta_4 SelfRatedHealth_{t-1}$$
$$+ \beta_5 Age_{t-1} + \beta_6 Gender + \beta_7 Race + \beta_8 Education + \beta_9 Income_{t-1}$$
$$+ \beta_{10} JobStress_{t-1}$$

Interactive Model:

$$\log CESD_t = \beta_0 + \beta_1 Retirement_t + \beta_2 Children_{t-1} + \boldsymbol{\beta_3 Retirement_t * Children_{t-1}} +$$

$$\beta_4 CESD_{t-1} + \beta_5 SelfRatedHealth_{t-1+}\beta_6 Age_{t-1} + \beta_7 Gender + \beta_8 Race +$$

$$\beta_9 Education + \beta_{10} Income_{t-1} + \beta_{11} JobStress_{t-1}$$

In terms of the partial effect of retirement, I expect the coefficient for being fully retired relative to being not retired to be *positive* if on average, retirement is a crisis to the elderly and to be *negative* if on average, retirement is an opportunity to invest in other important life roles and increase self-esteem. The coefficient for being partly retired relevant to being not retired is expected to be *closer* to zero than that of being fully retired, because partly retired persons are still somewhat involved in the labor force and thus may exhibit similar health outcomes as non-retirees. I expect the coefficient for retirement statuses to be insignificant if most of the differences in mental health by retirement status can be explained by conditions surrounding retirement or if on average, the stress of retirement offsets the psychological benefits of retirement. In terms of the partial effect of children, I expect both the coefficient for childless respondents relevant to elderly parents with perceived future support from children and the coefficient for elderly parents without perceived future support from children to be *positive*. In other words, I expect that being a parent with perceived future support from children is associated with better health, i.e., lower CES-D-scores, than their childless counterparts and elderly parents without perceived support from children. Elderly parents without perceived future support are expected to have similar CES-D scores as childless elderly. In terms of the interactive effect of retirement and children, perceived future support from children is hypothesized to mitigate the negative influence of retirement on health or that of continuous employment. In other words, I expect the difference between retirement and non-retirement in CES-D scores to be larger among childless elderly or elderly parents without perceived future support from children than elderly parents expecting some future support from children.

RESULTS

Retirement

The first set of columns in table 2 shows weighted coefficients and robust standard errors of the additive model, i.e. multivariate regression of CES-D score at wave T on all of the independent variables.

The coefficients in the additive model denote the partial effects of the independent variables, controlling for all other independent variables.

Net of childlessness, perceived support from children, prior health status, prior job stress, and demographic and socioeconomic characteristics, on average, full retirees are expected to have higher CES-D scores than non-retirees, while partial retirees are no different from neither full retirees nor non-retirees in terms of their CES-D scores. However, the association between full retirement and later-life mental well-being is weak. The coefficient for complete retirement relative to non-retirement is less than a-third of the coefficient of CES-D score at wave T-1 and the p-value of the coefficient for complete retirement in reference to non-retirement is only marginally significant (p=0.042). In fact, when separate models are run by gender, such difference in reported number of depressive symptoms between non-retirees and full retirees no longer exist. For both men and women, full retirees, partial retirees, and non-retirees do not differ in terms of CES-D scores at wave T. This result is consistent with many previous studies showing limited effects of retirement on later-life mental health. Once pre-retirement characteristics are included in the model, the relationship between retirement and later-life mental health is weak if not insignificant (Palmore et al. 1984). Most significantly, in the final analytic sample of this study, the differences in later-life depressive symptoms among full retirees, partial retirees, and non-retirees are largely explained by one's prior health status. Once prior health status (CES-D score at wave T-1 and self-reported general health status at wave T-1) is added to the bivariate regression of CES-D score on retirement status, the coefficient of partial retirement relative to non-retirement becomes insignificant and the coefficient of full retirement relative to non-retirement declines from 0.22 in bivariate association to only 0.07.

Presence of and Perceived Support from Children

In contrast to many previous studies that found no significant adverse health impacts of childlessness, my multivariate results suggest that, holding retirement status, prior health status, and demographic and socioeconomic characteristics constant, both childless elderly and elderly parents who expect no future support from children are more likely to report depressive symptoms than elderly parents

who expect some future support from children. In addition, elderly parents who expect no future support from children are no different from childless elderly in later-life mental well-being. Therefore, elderly parents might be better off in mental health than childless elderly, conditional on the fact that children are indeed sources of social support for elderly parents.

However, the relationship between the presence of, and perceived support from, children, and later-life mental health differs by gender. For men, childless men, elderly fathers who expect no future support from children, and elderly fathers who expect some future support from children are no different from each other in terms of their CES-D scores, net of retirement status and other control variables. In contrast, the results for women are the same as those for the entire analytic sample. Elderly mothers who expect some future support from their children are less likely to report depressive symptoms than childless women and elderly mothers with no perceived support from children. Such gender difference suggests that the presence of, and perceived support from children, are more salient for women's mental well-being than men's. This is probably because women tend to be the major "kinkeeper" who keep family members in touch with each other in most families and adult child-mother relationships are closer than adult child-father relationships (Lye 1996; Swartz 2009).

The Interaction between Retirement and Perceived Support from Children

The second set of columns in table 2 shows weighted coefficients and robust standard errors of the interactive model, i.e. multivariate regression of CES-D score at wave T on all of the independent variables and the interaction terms between retirement status, childlessness, and perceived future support from children. To facilitate interpretation of the interaction terms between retirement and children, figures 5 to 7 plot the CES-D scores predicted by the interactive models, by retirement status and childlessness/perceived support from children, holding all other control variables at their means.

Contrary to my hypothesis that the presence of, and perceived support from, children moderate the relationship between retirement and mental health and thus the difference in CES-D scores between retirement and non-retirement is expected to be larger among childless elderly or elderly parents without

perceived support from children than elderly parents with perceived support, the results show the exact opposite situation. Among childless elderly and elderly parents expecting no future support from children, predicted CES-D scores of non-retirees, partial retirees, and full retirees are not statistically different. However, among elderly parents expecting some future support from children, partial retirees and full retirees are expected to have higher CES-D scores than non-retirees. The reason why the results show larger difference in predicted CES-D scores between retirees and non-retirees among elderly parents with perceived support from than among childless elderly or elderly parents without perceived support might be that perceived support from children helps to lower the chances for depressive symptoms among non-retiree, but not among partial or full retirees. In fact, for partial and full retirees, childless elderly, elderly parents without perceived support, and elderly parents with perceived support, are expected to report similar CES-D scores. It is only for non-retirees that expecting some future support from children is related to lower CES-D scores than expecting no future support from children or being childless. This result holds for men, but not for women. For women, the differences in predicted CES-D scores between partial retirees and full retirees/non-retirees are statistically insignificant across all groups of childlessness and perceived support from children. The presence of, and perceived support from, children does not moderate the relationship between retirement and later-life mental health for women.

Prior Health Status, Job Stress, and Socioeconomic Characteristics

Though the primary focus of this study is on the health effects of retirement and children, older adults' prior health conditions, prior job stress, and socioeconomic status also play a crucial role in predicting later-life mental health. In bivariate and multivariate associations, one's prior mental and self-reported health status, prior job stress, gender, race/ethnicity, educational attainment, and marital status are all strongly associated with their CES-D scores. Prior health conditions seem to be the strongest predictor of later-life depressive symptoms. One unit increase in CES-D score at Wave T-1 is associated with almost 30% increase in IRR. Respondents who disagree or strongly disagree that their jobs at wave T-1 involve a lot of stress report lower CES-D scores than those who agree or strongly agree. Respondents who consider themselves as not retired at wave T-1 but are not working at wave T-1 are no

different from respondents who strongly agree or agree that their jobs involve a lot of stress in terms of CES-D scores. Older adults reporting "fair" or "poor" general health status at wave T-1 have an IRR over 1.8 times higher than that of older adults reporting "excellent", controlling for all other independent variables. Overall, male, non-Hispanic Whites, college graduates, and married persons fare better in later-life mental health. For female respondents in the final analytic sample, CES-D scores at Wave T do no differ by race/ethnicity.

DISCUSSION

Results from this study suggest that the average association between retirement and later-life mental health is insignificant for men and women. Most of the differences in mental health by retirement status seem to be explained by prior health status. Parenthood per se may not have positive impacts on later-life mental psychological health. Rather, the health benefits of parenthood are conditional on whether children indeed are perceived by their elderly parents as sources of economic and emotional resources. Elderly parents who do not expect future support from their children are more likely to experience depressive symptoms than those who expect some future support from their children. In addition, childless elderly are more likely to experience depressive symptoms than parents who expect some future support from children, controlling for retirement status, prior health conditions, and demographic and socioeconomic characteristics. Childless elderly and elderly parents expecting no future support from do not differ in terms of later-life mental health. Being a parent and expecting some support from children is more salient for women's mental health than for men's, probably because mothers tend to be in closer relationships with their children than fathers.

Yet, for women, the presence of, and perceived support from, children does not moderate the relationship between retirement and later-life mental health. For men, opposite to my hypothesis that the presence of, and perceived support from, children moderate the relationship between retirement and mental health and thus the difference in CES-D scores between retirement and non-retirement is expected to be larger among childless elderly or elderly parents without perceived support from children than elderly parents with perceived support, the largest difference in reported number of depressive symptoms

between retirees and non-retirees is in fact among elderly parents with perceived support from children. This is probably because having children and expecting some future support from children are associated with better mental well-being only for non-retirees.

However, why perceived support from children lowers chances of depressive symptoms only for male non-retirees and why only among elderly fathers who expect some support from their children, full/partial retirement is associated with higher reported number of depressive symptoms, need to be further examined. I propose two speculative hypotheses. On the one hand, the support from children may still be important and beneficial but just the health benefits of children have not yet been revealed in the first two years of retirement. After all, the first two years of retirement is often referred to as the "honeymoon phase" (Atchley 1976) that involves non-routine activities. Future research may investigate how the relationship between retirement, children, and later-life mental health unfolds conditional on the length of retirement. On the other hand, expecting some support from children after retirement may imply a "role reversal" for many retirees. That "children tend to become like parents to their elders, and elders become like offspring of their children" may be a "psychological threat" for many children and parents, especially in the modern nuclear family (Glasser and Glasser 1962). The identity adjustment from being a working parent to a parent relying on children could make retirement as stressful for parents who expect support from children as for parents without perceived support or childless elderly. Such identity adjustment may be especially problematic for men because men typically are less involved in kin work prior to retirement (Szinovacz and Davey 2001). To further investigate this role reversal hypothesis, future research may consider whether among elderly parents who expect some support from their children, the support between parents and children is mutual, or is largely parents to children, or is predominantly children to parents. Prior research suggests that adult child's reliance on elderly parents' instrumental support is related to fewer parental depressive symptoms, because the integrity of parental roles is maintained through adult children's reliance on elderly parents (Byers, Levy, Allore, Bruce, and Kasl 2008).

This study is limited in the following ways. First, the retirement status of the respondent sometimes changes overtime. Caution must be taken when interpreting the implications of the effects of retirement status on later-life health. As this study restricts the analytic sample to non-retirees at wave T-1, controls for retirement status at wave T, and measures mental health outcome at wave T, the results only demonstrate the short term relationship between retirement status and emotional well-being. The duration of retirement and reported mental health status is two years or less. Whether the length of retirement influences the association between retirement, the presence of and perceived support from children, and later-life mental well-being needs to be further investigated. Second, how childlessness and perceived future support from children affect later-life mental health may differ by marital status. For instance, support from children may be more salient for widowed women; divorced men may be less likely to expect future support from children, as men are usually the non-custodial parent who maintains weak relationship with separated children. Future research should investigate the interaction between marital status and the presence of, and support from, children.

Given recent trends in expectations of delayed retirement and growing number of "bridge jobs", promoting healthy and solidary relationships between elderly parents and their adult children may be especially important for improving later-life mental health. For women, although perceived support from children may not moderate the relationship between retirement and mental health, still, expecting some support from children on average is associated with better mental well-being than expecting no support. For men, perceived support from children is associated with lower chances of depressive symptoms among non-retirees. Promoting supportive elderly parent-child relationships may thus benefit the mental health of the growing number of elderly people who delay their retirement. In addition, for men, as perceived support from children is only salient for non-retirees but not partial or full retirees in terms of their psychological well-being, full/partial retirees and non-retirees differ significantly in reported number of depressive symptoms especially among elderly parents with perceived support from children. Finding ways to promote the role children could play in improving the mental well-being of their fully or partly

retired parents as one way to mitigate such difference is hence especially meaningful given more and more elderly people now take on "bridge jobs" and consider themselves as "partly retired".

The implications for the increasing childless elderly population, however, are uncertain. Indeed, children are important sources of support for elderly parents. This study finds that elderly parents who expect some support from their children report significantly fewer depressive symptoms than childless elderly and elderly parents without perceived support from children. However, this study did not distinguish voluntary childlessness from involuntary childlessness. Those who voluntarily choose to remain childless may be similar to parents who expect some future support from children in later-life mental health, because these childless older adults might have sustained non-kin relationships that are as important and supportive as the solidary filial relationship of the elderly parents with perceived support from children. It is likely that as a growing number of older adults voluntarily choose to remain childless, the differences between childless adults and parents with support from children will diminish over time.

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Appendix 1. Figures and Tables

Figure 1. Flow Chart of the Construction of the Analytic Sample

```
┌─────────────────────────────────────────────────────────┐
│  78,104 (9,763*8) possible person-wave observations       │
└─────────────────────────────────────────────────────────┘
                          ↓
┌─────────────────────────────────────────────────────────┐
│  19,099 person-wave observations (6,188 persons) not      │
│  retired at wave T-1                                      │
└─────────────────────────────────────────────────────────┘
                          ↓
┌─────────────────────────────────────────────────────────┐
│  18,233 person-wave observations (5,843 persons)          │
│  consider retirement status relevant at wave T            │
└─────────────────────────────────────────────────────────┘
                          ↓
┌─────────────────────────────────────────────────────────┐
│  15,762 (5,220 persons) in the final analytic sample, no  │
│  variables with missing value                            │
└─────────────────────────────────────────────────────────┘
```
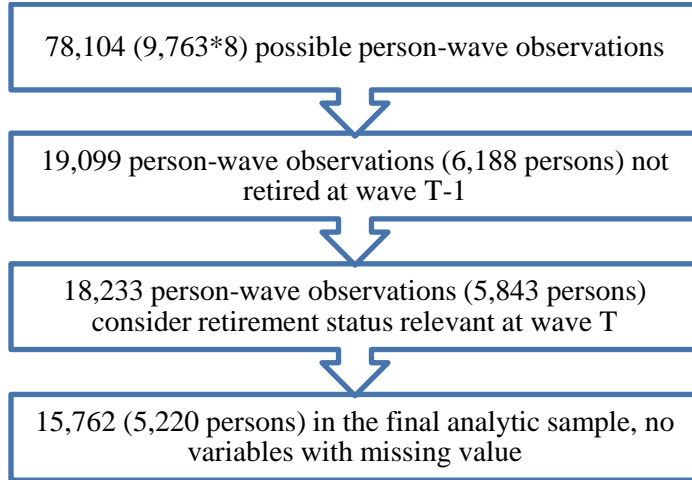
Figure 2. Flow Chart of the Imputation of Perceived Support from Children at Wave 2

```
                        ┌──────────────────┐
                        │  310 childless   │
                        └──────────────────┘
┌────────────────┐      ┌──────────────────┐
│ 4,379          │      │ 301 in           │
│ respondents'   │──────│ experimental     │
│ wave 2 data    │      │ module           │
│ used           │      └──────────────────┘      ┌──────────────────┐   ┌──────────────────┐
└────────────────┘      ┌──────────────────┐      │ 1,495 consistent │   │ Use consistent   │
                        │ 3,768 to be      │──────│ responses since  │───│ response         │
                        │ imputed          │      │ wave 3           │   └──────────────────┘
                        └──────────────────┘      └──────────────────┘
                                                  ┌──────────────────┐   ┌──────────────────┐
                                                  │ 2,273            │   │ Use most recent  │
                                                  │ inconsistent     │───│ response         │
                                                  │ responses since  │   │ available        │
                                                  │ wave 3           │   └──────────────────┘
                                                  └──────────────────┘
```
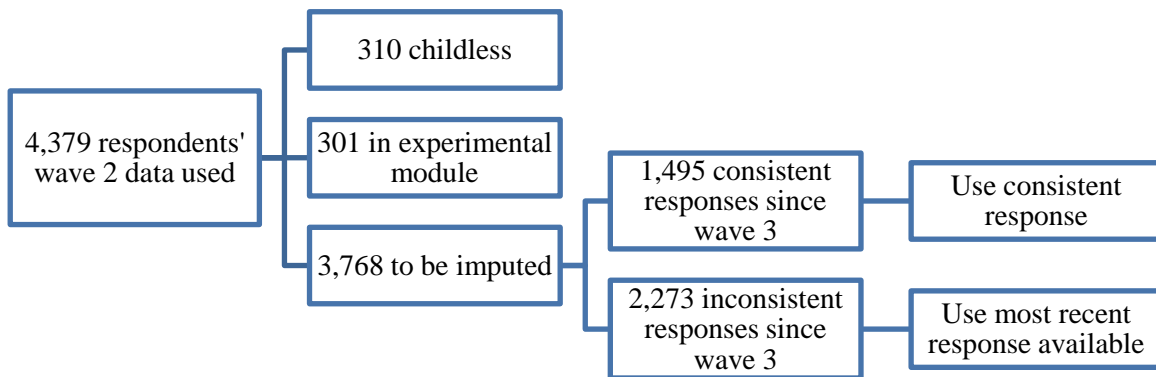
Figure 3. The Distribution of CES-D scores at Wave T
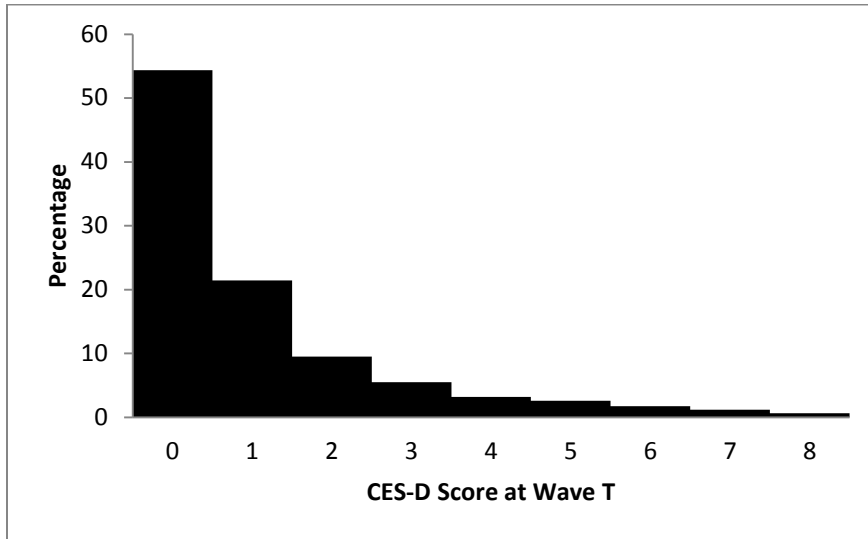
Note: Figures are weighted by wave T person-level weights.

Figure 4. Probability Distribution of Observed and Predicted CES-D Scores at Wave T
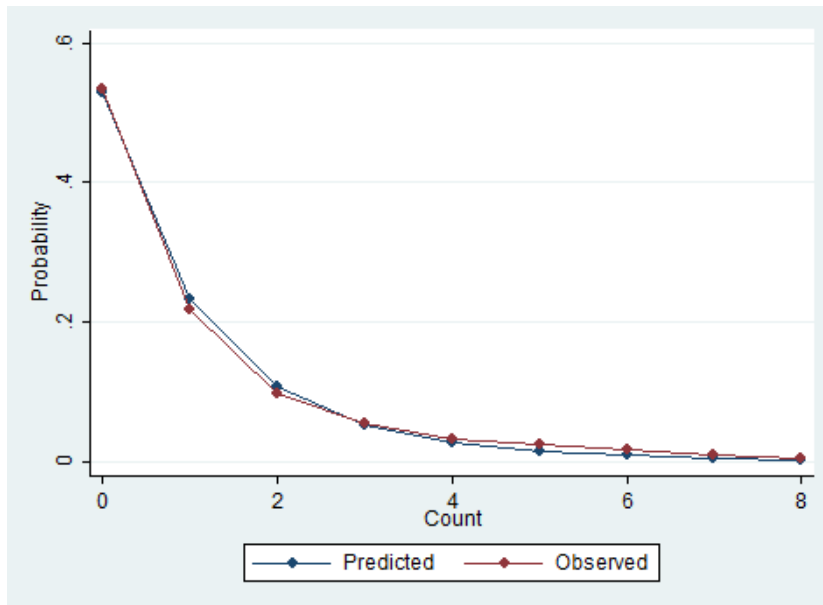
Note. Figures are weighted by wave T person-level weights.

Figure 5. Predicted CES-D scores at Wave T for the Analytic Sample (N= 15,762)

Figure 6. Predicted CES-D scores at Wave T for Males in the Analytic Sample (N= 7,486)
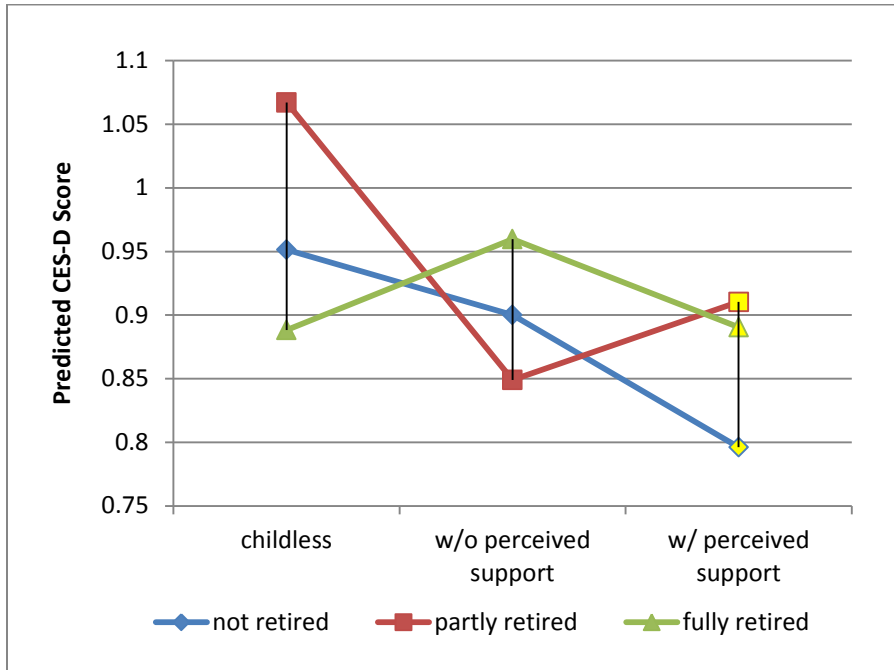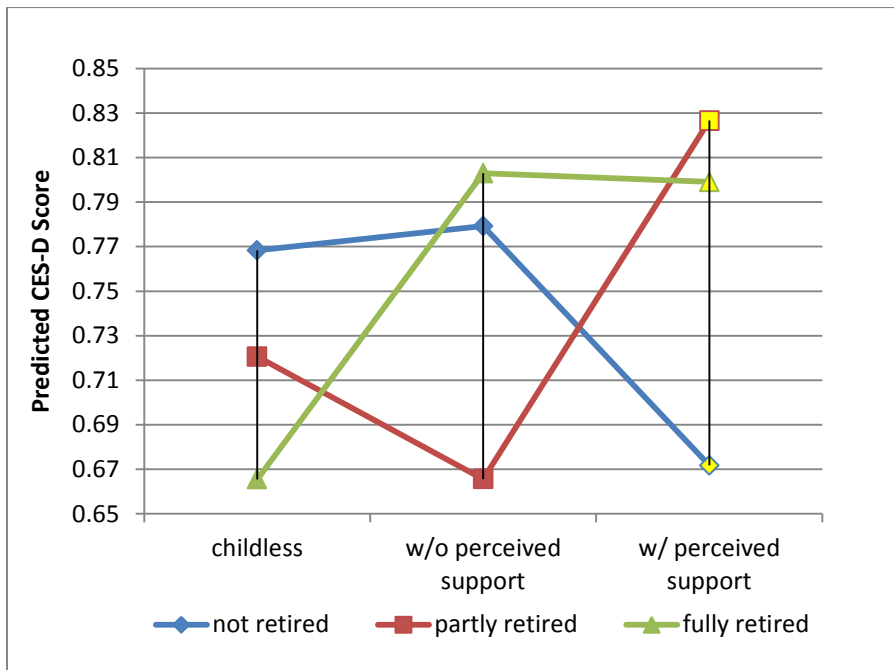
Figure 7 Predicted CES-D scores at Wave T for Females in the Analytic Sample (N=8,276)
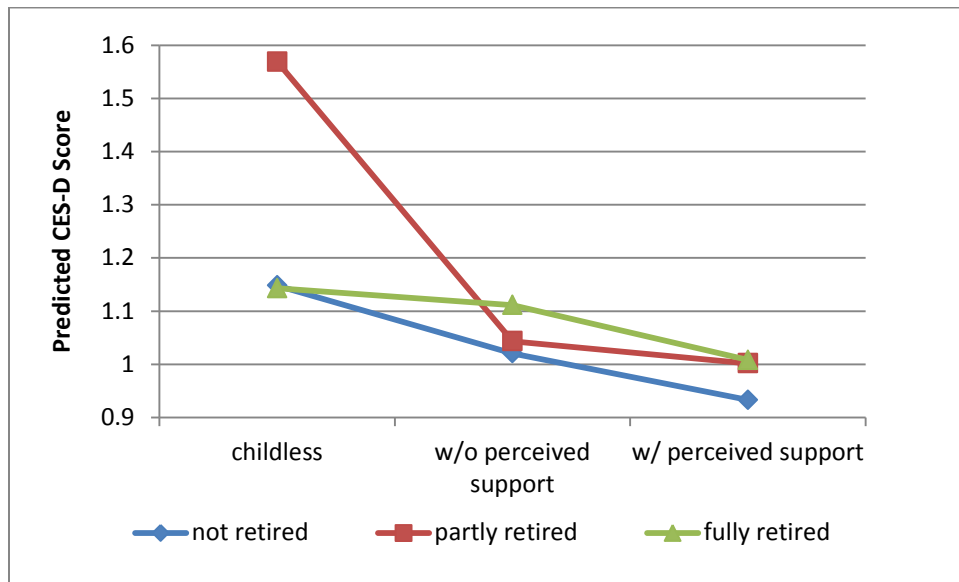
Table 1.Descriptive Statistics of Variables, 1992-2010 Health and Retirement Study

Variables	Analytic Sample N=15,762 % or Mean	(SD)	Male N=7,486 % or Mean	(SD)	Female N=8,276 % or Mean	(SD)	
CESD-score at Wave T (0-8)	1.06	1.65	0.91	1.47	1.20	1.80	**
Retirement Status at Wave T							
Not Retired	72.75		72.69		72.80		
Partly Retired	12.94		13.73		12.20		*
Completely Retired	14.31		13.58		15.00		
Childlessness X Perceived Future Supprt from Children							
Childless	8.55		9.47		7.66		**
Parent without Perceived Future Support from Children	44.03		47.47		40.75		**
Parent with Perceived Future Support from Children	47.43		43.06		51.59		**
Health Status at Wave T-1							
CESD-score at Wave T-1 (0-8)	1.00	1.60	0.86	1.42	1.14	1.76	**
Self-reported General Health Status at Wave T-1							
Excellent	21.20		21.42		20.99		
Very Good	36.74		36.18		37.28		
Good	30.05		30.58		29.54		
Fair	10.53		10.25		10.78		
Poor	1.48		1.57		1.40		
Individual Characteristics							
Age in Years at Wave T-1 (52-75)	60.34	4.60	60.34	4.55	60.34	4.65	
Gender							
Male	48.82						
Female	51.18						
Race/Ethnicity							
Non-Hispanic White	83.46		85.40		81.60		**
Non-Hispanic Black	8.30		6.52		10.00		**
Non-Hispanic Other	2.69		2.46		2.90		
Hispanics	5.56		5.61		5.50		*
Educational Attainment							
Less than High School	15.15		14.76		15.53		
High School/GED	36.29		32.03		40.36		**
Some College	22.94		21.38		24.43		**
College or More	25.61		31.83		19.68		**
Marital Status							
Married (including spouse absent)	68.79		80.63		57.50		**
Partnered	2.45		2.94		1.98		**
Divorced/Separated	15.63		10.07		20.94		**
Widowed	9.09		2.64		15.24		**
Never Married	4.04		3.73		4.34		**
Job Stress at Wave T-1							
Current job involves a lot of stress							
Strongly agree	16.49		14.65		18.23		**
Agree	39.37		41.26		37.56		**
Disagree	34.70		36.66		32.83		**
Strongly disagree	4.14		4.13		4.15		
Does not Apply or Not Working	5.31		3.30		7.23		**
Total Household Income at Wave T-1	78,286.5	149,995.3	94,899.3	181,297.8	62,439.4	107,283.5	**

Note: Figures are weighted by wave T person-level weights;

Note: * denotes a significant mean difference by gender at p<.05; ** denotes a significant mean difference by gender at p<.01

Source: Health and Retirement Study, 1992-2010.

Table 2. Weighted Coeffients and Robust Standard Errors from Additive and Interactive Models , 1992-2010 Health and Retirement Study

| | Analytic Sample (N= 15,762) | | | | Male (N= 7,486) | | | | Female (N= 8,276) | | | |
| | Additive | | Interactive | | Additive | | Interactive | | Additive | | Interactive | |
	Coef.	Robust SE	Coef.	Robust SE	Coef.	Robust SE	Coef.	Robust SE	Coef.	Robust SE	Coef.	Robust SE
Constant	-0.38	0.20	-0.39	0.20	-0.50	0.31	-0.47	0.32	-0.08	0.26	-0.08	0.26
Retirement Status at Wave T												
Not Retired [Referenced]												
Partly Retired	0.05	0.04	0.13 *	0.06	0.02	0.06	0.21 *	0.09	0.07	0.05	0.07	0.07
Completely Retired	0.08 *	0.04	0.11 *	0.05	0.07	0.06	0.17 *	0.09	0.08	0.05	0.08	0.07
Childlessness X Perceived Supprt from Children												
Childless	0.15 *	0.07	0.18 *	0.07	0.05	0.09	0.13	0.10	0.23 *	0.09	0.21	0.11
Parent without Perceived Future Support from Children	0.09 **	0.03	0.12 **	0.03	0.07	0.04	0.15 **	0.05	0.08 *	0.04	0.09 *	0.05
Parent with Perceived Future Support from Children [Referenced]												
Retirement Status at Wave T X Childlessness X Perceived Future Support from Children												
Partly Retired X Childless			-0.02	0.15			-0.27	0.21			0.24	0.20
Partly Retired X Parent without Perceived Future Support from Children			-0.19 *	0.08			-0.37 **	0.12			-0.05	0.11
Completely Retired X Childless			-0.18	0.15			-0.32	0.19			-0.08	0.22
Completely Retired X Parent without Perceived Future Support from Children			-0.05	0.08			-0.14	0.12			0.01	0.10
Health Status at Wave T-1												
CESD-score at Wave T-1	0.25 **	0.01	0.25 **	0.01	0.29 **	0.01	0.29 **	0.01	0.24 **	0.01	0.24 **	0.01
Self-reported General Health Status at Wave T-1												
Excellent [Referenced]												
Very Good	0.17 **	0.04	0.17 **	0.04	0.21 **	0.06	0.20 **	0.06	0.15 *	0.06	0.15 *	0.06
Good	0.39 **	0.04	0.39 **	0.04	0.41 **	0.06	0.41 **	0.06	0.38 **	0.06	0.38 **	0.06
Fair	0.57 **	0.05	0.57 **	0.05	0.61 **	0.07	0.61 **	0.07	0.55 **	0.07	0.55 **	0.07
Poor	0.62 **	0.08	0.62 **	0.08	0.73 **	0.12	0.74 **	0.12	0.50 **	0.10	0.50 **	0.10
Individual Characteristics												
Age in Years at Wave T-1	-0.01 *	0.00	-0.01 **	0.00	-0.01	0.00	-0.01	0.00	-0.01 **	0.00	-0.01 *	0.00
Gender												
Male [Referenced]												
Female	0.13 **	0.03	0.13 **	0.03								
Race/Ethnicity												
Non-Hispanic White [Referenced]												
Non-Hispanic Black	0.10 **	0.04	0.10 **	0.04	0.14 *	0.06	0.15 *	0.06	0.08	0.05	0.08	0.05
Non-Hispanic Other	0.15	0.10	0.16	0.10	0.19	0.16	0.19	0.16	0.14	0.12	0.15	0.12
Hispanics	0.13 **	0.05	0.13 **	0.05	0.17 *	0.07	0.18 *	0.07	0.10	0.06	0.10	0.06
Educational Attainment												
Less than High School	0.29 **	0.05	0.30 **	0.05	0.27 **	0.07	0.27 **	0.07	0.30 **	0.07	0.30 **	0.07
High School/GED	0.16 **	0.04	0.16 **	0.04	0.14 *	0.06	0.15 *	0.06	0.15 *	0.06	0.16 *	0.06
Some College	0.08	0.05	0.08	0.05	0.06	0.07	0.06	0.07	0.09	0.07	0.09	0.07
College or More [Referenced]												
Marital Status												
Married (including spouse absent) [Referenced]												
Partnered	0.11	0.08	0.12	0.08	0.15	0.13	0.16	0.13	0.06	0.10	0.06	0.10
Divorced/Separated	0.18 **	0.04	0.18 **	0.04	0.30 **	0.06	0.30 **	0.06	0.11 *	0.05	0.11 *	0.05
Widowed	0.14 **	0.05	0.14 *	0.05	0.27 *	0.11	0.26 *	0.11	0.10	0.05	0.10	0.05
Never Married	-0.02	0.09	-0.02	0.09	0.06	0.15	0.07	0.15	-0.08	0.11	-0.09	0.11
Job Stress at Wave T-1												
Current job involves a lot of stress												
Strongly agree [Referenced]												
Agree	-0.03	0.04	-0.03	0.04	-0.08	0.06	-0.08	0.06	0.00	0.05	0.01	0.05
Disagree	-0.19 **	0.04	-0.19 **	0.04	-0.26 **	0.06	-0.26 **	0.06	-0.15 **	0.05	-0.14 **	0.05
Strongly disagree	-0.25 **	0.08	-0.25 **	0.08	-0.32 **	0.11	-0.32 **	0.11	-0.22 *	0.11	-0.22 *	0.11
Does not Apply or Not Working at Wave T-1	-0.08	0.06	-0.08	0.06	-0.10	0.11	-0.09	0.11	-0.08	0.08	-0.08	0.08
Total Household Income at Wave T-1	0.00 **	0.00	0.00 **	0.00	0.00 **	0.00	0.00 **	0.00	0.00	0.00	0.00	0.00

Note: Figures are weighted by wave T person-level weights; Source: Health and Retirement Study, 1992-2010.

Note: * p<.05; ** p<.01

Appendix 2. Question Wording

Variable	Wording of the survey questions from which the variable is constructed
CES-D-score	Now think about the past week and the feelings you have experienced. Please tell me if each of the following was true for you much of the time this past week. (Yes/No) Much of the time during the past week, you felt depressed Much of the time, you felt that everything you did was an effort. Much of the time, your sleep was restless Much of the time, "you could not get going." Much of the time, you felt lonely. (Much of the time during the past week,) you felt sad. Much of the time you enjoyed life. Much of the time, you were happy.
Self-Defined Retirement Status	We are interested in what people think about retirement, whether they themselves are retired or not. At this time do you consider yourself partially retired, completely retired, or not retired at all?
Perceived Future Support from Children	Suppose in the future, you needed help with basic personal care activities like eating or dressing. Do you have relatives or friends (besides your husband/besides your wife/besides your partner/...) who would be willing and able to help you over a long period of time? IF yes, What is the relationship to you of that person or persons?
Self-Rated Health	Next I have some questions about your health. Would you say your health is excellent, very good, good, fair, or poor?
Job Stress	"My job involves a lot of stress." Do you strongly agree, agree, disagree, or strongly disagree with that statement?
Race/Ethnicity	Do you consider yourself Hispanic or Latino? Do you consider yourself primarily White or Caucasian, Black or African American, American Indian, or Asian, or something else?
Educational Attainment	What is the highest grade of school or year of college you completed?
Marital Status	Are you currently married, living with a partner, separated, divorced, widowed, or have you never been married?