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Original Article

The Mental and Physical Health Consequences of Changes in Private Insurance Before and After Early Retirement

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Abstract

Objectives: This study evaluated the impact of private insurance coverage on the symptoms of depression, activities of daily living (ADLs), and instrumental activities of daily living (IADLs) in the years leading up to Medicare eligibility focusing on the transition from full-time work to early full retirement.

Method: The Health and Retirement Study was used to (a) estimate 2-stage selection equations of (i) the transition to retirement and (ii) current insurance status, and (b) the impact of insurance coverage on health, net of endogeneity associated retirement and insurance coverage.

Results: Employment-based insurance coverage was generally associated with better health. Moreover, being without employment-based insurance was particularly problematic during the transition to retirement. Non-group insurance only moderated the association between losing employment-based insurance and IADLs.

Discussion: Results indicated that private insurance coverage is an important contextual factor for the health of early retirees. Those who maintain steady coverage tend to fare the best in retirement. This highlights the dynamic nature of changes in health in later life.

Key Words: Insurance—Retirement—Health

As the U.S. population becomes older and health expenditures continue to increase, it is important to understand how retirement relates to health in later life (Anderson, Goodman, Holtzman, Posner, & Northridge, 2012). Retirement's relationship with health, however, is ambiguous. Some studies find lower depression and improved self-esteem upon retirement (Reitzes, Mutran, & Fernandez, 1996) whereas others report few changes in health after retiring (Drentea, 2002; Herzog, House, & Morgan, 1991; Midanik, Soghikian, Ransom, & Tekawa, 1995; Ross & Drentea, 1998). Retirement transitions, however, are situated in a variety of contexts that may shape the way retirement relates to subsequent health (Coursolle, Sweeney, Raymo, & Ho, 2010; Gayman, Pai, Kail, & Taylor, 2013; Reitzes et al., 1996) and may relate differently to mental health than they do to physical health. Having access to private insurance coverage may be one such contextual factor.

Although private insurance coverage is generally associated with good health (Dor, Sudano, & Baker, 2006; Quesnel-Vallee, 2004), little is known about how the loss of private insurance affects health after early retirement. This is important, in part, because the number of employers offering retiree health benefits has declined (e.g., from 22% in 1997 to 11% in 2008 for retirees under 65) (Gould & Hertel-Fernandez, 2010). Therefore, people are increasingly

entering into retirement without private insurance coverage, and this shift may have important health implications.

In this study, I use the 1996–2010 waves of the Health and Retirement Study to assess: (a) whether employment based health insurance affects changes in depressive symptoms, activities of daily living (ADLs) limitations, and instrumental activities of daily living (IADLs) limitations; (b) if so, whether the lack of employment-based insurance can be offset through the addition of private non-group insurance; and (c) whether the influence of insurance coverage on health differs between those working full-time and transitioning to retirement during the ages leading up to Medicare eligibility.

Background

Retirement and Health

Retirement is a major life course transition (Van Solinge & Henkens, 2007) and life course transitions are particularly meaningful in shaping individuals' health trajectories (Ferraro & Shippee, 2009; Hareven & Masaoka, 1988; Rutter, 1996; Wheaton, 1990). Although becoming less common (Cahill, Giandrea, & Quinn, 2006; Flippen & Tienda, 2000; Han & Moen, 1999), a substantial minority of workers transition directly from full-time work to early retirement. Indeed, recent estimates indicate roughly half of those between the ages of 51 and 61 who transitioned out of full-time work moved directly to full retirement (Cahill et al., 2006). This is important because, in the United States, early retirement is fairly common, with 47% of men and 60% of women out of the labor force before they become age eligible for Social Security (Coile & Gruber, 2004). Thus, a considerable number of workers still transition directly from full-time work to early full retirement.

Although retirement's influence on health is somewhat ambiguous (Drentea, 2002; Gallo, Bradley, Siegel, & Kasl, 2000; Herzog et al., 1991; Midanik et al., 1995; Reitzes et al., 1996; Ross & Drentea, 1998), the health consequences of retirement may be contingent upon the social context surrounding this transition (Wheaton, 1990). For instance, individuals have varying degrees of resources during the transition to retirement that may be meaningful for their health. One important resource may be private insurance coverage. Thus, the early retirement process may depend on the extent to which individuals have access to employment-based insurance in the years before and after retiring.

Insurance and Health

Private insurance coverage may be important for health after early retirement. Private coverage is generally associated with better health when compared to both those who are uninsured and those with public insurance (Dor et al., 2006; Levy & Meltzer, 2008; Quesnel-Vallee, 2004). Private insurance has been linked to positive physical health, lower risks of mortality, fewer ADL and IADL limitations, and fewer depressive symptoms, relative to the uninsured (Dunlop, Song, Lyons, Manheim, & Chang, 2003; Landerman et al., 1998; Wilper et al., 2009). Among retirement aged adults, having continuous private insurance coverage—relative to intermittent insurance, uninsurance, or loss of insurance—is associated with lower mortality, better physical health, better self-assessed health, and lower risk of onset of new difficulties with mobility (Baker, Sudano, Albert, Borawski, & Dor, 2001, 2002; Hadley & Waidmann, 2006). Clearly, having private insurance is an important factor for better health during retirement.

Retirees secure private insurance through two primary sources. First, the majority of retirees are covered by private insurance through their own former employer or through a spouse's employer. Second, a smaller group of retirees has insurance they purchase directly on the non-group market (Johnson, 2007). Importantly, people with non-group coverage tend to pay higher premiums, more out of pocket costs, and have poorer health than those with employment-based insurance (Johnson & Crystal, 2000; Kail & Taylor, 2014). It remains unclear, however, if both forms of coverage provide similar health benefits after retiring.

This is an important omission in the literature, in part because rates of employer provided retirement coverage have been dropping over the past few decades. For instance, the share of large firms offering insurance benefits declined from 88% to 63% in 2006 for retirees under 65 (Kaplan, Powers, & Zucker, 2009). Moreover, during the recession that began in late 2007, retiree insurance dropped to 36% for retirees under 65 (Gould & Hertel-Fernandez, 2010). This suggests people will have to increasingly rely on private non-group insurance to have private coverage during retirement. Thus, whether these two types of private insurance provide similar health benefits during the transition to retirement is an important question to answer.

Hypotheses

In sum, I conceptualize retirement as an important life course transition, but view access to employment-based coverage before and after retirement as an important contextual resource within which the retirement transition is contextualized. Moreover, because some people either (a) do not have access to employment-based insurance, or (b) lose their employment-based insurance during the transition to retirement, I view non-group insurance as an important resource that can help buffer against the deleterious consequences of being uninsured. Therefore, based on empirical research on the relationships between retirement and insurance coverage with health, I developed the following five hypotheses:

(1) Losing employment-based insurance will be associated with worse subsequent mental and physical health

compared to those with continuous employment-based insurance, but (2) better subsequent physical and mental health compared to those without employment-based insurance in consecutive waves.

(3) Being covered through private non-group insurance will be associated with better subsequent mental and physical health compared to those without this form of coverage, (4) particularly for those without employment-based insurance.

(5) The influence of employment-based insurance will be particularly consequential to subsequent mental and physical health during the transition from full-time work to retirement relative to continuous full-time work.

Data and Method

Data came from the 1996–2010 waves of the RAND files of the Health and Retirement Study (HRS). In 1992, the HRS included 12,600 people who were between 51 and 61, and their spouses. Respondents were reinterviewed every 2 years and new cohorts of 51 to 56 year olds were added in 1998 and 2004 (Health and Retirement Study, 2010; Juster & Suzman, 1995; RAND Center for the Study of Aging, 2010).

For the current study, the sample was first limited to people between the ages of 50 and 64 to capture people in the years prior to becoming age-eligible for Medicare. These people were then included in the sample until they turned 65 and became age-eligible for Medicare coverage. Second, because the focus of this study is on the transition to retirement, the sample was limited to individuals who were observed working full-time in $wave_{t-1,}$ and either remained working full-time or had transitioned to full retirement in $wave_t$. Third, because of missingness on items in the ADL and IADL measures, the 1992 and 1994 waves of the HRS were not used in these analyses. The resulting sample included 14,477 observations nested within 5,779 people (with person-wave as the unit of analysis) over 15 years.

Dependent Variables

For this study, one measure of mental health and two measures of physical health were used as dependent variables. First, "depressive symptoms" were measured using a shortened version of the Center for Epidemiologic Studies—Depression index (Radloff, 1977). The index includes the sum of eight items of symptoms experienced over the past week, including: felt depressed; everything was an effort; sleep was restless; was happy (reverse coded); felt lonely; felt sad; could not get going; and enjoyed life (reverse coded), with "1" indicating experiencing the symptom.

Second, difficulties with ADLs were measured as the sum of five dichotomous items indicating difficulty with the following tasks: walking across the room; getting dressed; taking a bath or shower; eating; and getting in or out of bed. Similarly, difficulties with IADLs were measured as the sum of five dichotomous items indicating difficulty with the following tasks: using the telephone; managing money; shopping for groceries; preparing a hot meal; and taking medications. All items were coded with "1" indicating experiencing the ADL or IADL limitation.

Independent Variables

The first study variable was a dichotomous indicator of whether a person transitioned from full-time work in $wave_{t-1}$ to full retirement in $wave_t$ (coded "1"), relative to those who worked full-time in $wave_{t-1}$ and remained working full-time in $wave_t$ (coded "0"). Full-time work was defined as having worked 35 or more hours per week and at least 36 weeks per year, and retirement was defined as averaging zero hours of work per week over the previous year (Kail, 2012; Kail & Warner, 2013; Maestas, 2010).

The second study variable included four dummy coded measures of patterns of employment-based insurance. Individuals were coded "1" for *kept employment-based* insurance if they had insurance in $wave_{t-1}$ and in $wave_t$ from either their own employer or their spouse's employer. Individuals were coded "1" for *lost employment-based insurance* if they had insurance in $wave_{t-1}$ from their own employer or their spouse's employer but did not have this coverage in $wave_t$. Third, individuals were coded "1" for *no employment-based insurance* if they neither had insurance from their own employer or their spouse's employer in $wave_{t-1}$ nor in $wave_t$. Finally, individuals were coded "1" for *gained employment-based insurance* if they did not have insurance from their own employer or their spouse's employer in $wave_{t-1}$ but did have this coverage in $wave_t$.

The third study variable indicated whether or not people had "non-group insurance." Individuals were coded "1" on this measure if they were covered in $wave_t$ with insurance coverage purchased on the non-group market—regardless of whether people had employment-based insurance.

Control Variables

Several known correlates of health were controlled for in the following analyses. These include: *age* (measured in years); *education* (measured in years; capped at 17); *race* (dummy coded as *White*, *African American*, or *Other*); *Hispanic* ethnicity (coded "1" for people with Hispanic ethnicity); *gender* (coded "1" for *Males*); *prior self-assessed health* measured as a 5-point Likert item ranging from "1" (*excellent health*) to "5" (*poor health*); a dichotomous measure of marital status (coded "1" for those who were *Unmarried*) and two dichotomous measures of marital history (one coded "1" for widows/widowers and one coded "1" for people who had ever experienced a divorce); measures of *household income* and *Social Security* income (both of which were measured as the natural log of dollars); and *household wealth* (measured using the inverse hyperbolic

sine function to account for skewness, as well as zero and negative values) (Burbidge, Magee, & Robb, 1988; Gale & Pence, 2006). The analyses also controlled for prior depressive symptoms, prior ADLs, and prior IADLs. These variables were measured in the same fashion as the study outcomes, but assessed from $wave_{t-1}$; therefore the coefficients in the models can be interpreted as the influences on changes in health.

Analysis Plan

Analyses were done using STATA v.13 (StataCorp, 2011), and proceeded in two steps. First, the primary analyses presented here rely on a two-step Heckit procedure (Guo & Fraser, 2010) to help reduce potential issues of endogeneity between labor force status and subsequent health, as well as between insurance coverage and subsequent health. To that end, prior to estimating the primary models, two first stage equations were estimated. The first of these first step equations involved estimating a series of probit models predicting whether someone transitioned from full-time work to retirement, because people may be selecting in to retirement partially due to insurance coverage (French & Jones, 2011).

Similarly, people may also be self-selecting in to insurance plans on the basis of choice and, potentially, on anticipated changes in health status. To help reduce endogeneity between private insurance status and subsequent health, a series of multinomial logit models were estimated predicting each of the four patterns of employment-based insurance between $wave_{t-1}$ and $wave_t$.

Both of the first stage models included all of the covariates used in final regression models predicting health, with one important caveat. In order to generate credible estimates, it is necessary to include an exclusion restriction in the first stage equations: that is, a variable that is a significant predictor in the first stage equation that is not a significant predictor in the second stage equations (in this case, predicting subsequent symptoms of depression, ADLs, and IADLs) (Bushway, Johnson, & Slocum, 2007). For this study, "pension income" (measured as the natural log of dollars) was included in both the first stage models predicting subsequent labor force status and the first stage models predicting insurance coverage. Because each of these first stage models requires a variable that meets the criterion of an exclusion restriction, but is unique to that particular model, a time invariant measure of whether a respondent planned on working past the age of 62 (measured as the probability that the respondent would "work past 62" during the first wave the respondent was included in the sample) was included in the first stage models predicting retirement. Similarly, a measure of whether or not the respondent had preventative cholesterol tests and procedures was used in the first stage models predicting insurance coverage. In this model, a measure of total out-of-pocket medical expenditures was also included to help reduce the possibility that people with greater need were more likely to continue working to maintain their private insurance coverage.

From these first stage models, predicted values were estimated, from which the inverse Mills ratio was calculated separately for each of the outcomes (Bushway et al., 2007; Guo & Fraser, 2010; Wooldridge, 2002) (For the multinomial models, the inverse Mills ratio was calculated as the number of outcomes in the multinomial variable times the natural log of the predicted probability of being in a given outcome plus the predicted probabilities of being in each of the other outcomes for each wave.). To help reduce issues of endogeneity in the second stage regression models, the inverse Mills ratio for the transition to retirement and three of the four insurance outcomes, as well a dummy variable for each wave were then included, as is appropriate for two-step selection models with panel data (for more details on this process see Wooldridge 2002, page 583).

For the final step of the analysis, for each outcome (depressive symptoms, ADLs, and IADLs), population average General Linear Models were estimated using a Generalized Estimating Equation approach (To test the robustness of these estimates, unit-specific models were also estimated using mixed effects multilevel modeling, and the results were substantively similar to those presented here [not shown but available upon request]. The xtgee command in Stata 13 was used to estimate these models.) to test (a) whether changes in employment-based insurance were related to changes in both mental and physical health, (b) whether acquiring non-group insurance was associated with changes in health or modified changes in insurance, and (c) whether the association between employment-based insurance and subsequent health varied by whether someone transitioned to retirement between waves (Tables 2 and 3). The data structure was such that patterns of insurance and labor force behavior were measured as changes between $wave_{t-1}$ and $wave_t$, and all time varying covariates were measured at $wave_{t-1}$, to predict each outcome measured at $wave_t$ (see Table 1 for detail on each variable). Most of the remaining variables were included as level-I (i.e., time varying person-wave) variables; the exceptions were education, the three measures of race and ethnicity, and gender, which were included as level-II (i.e., time invariant person) variables.

Results

Bivariate Results

Table 1 provides summary statistics (summary statistics for the samples used in the equations predicting insurance coverage and retirement are provided in Supplementary Appendices A and B). In this sample, 18% of the sample went from full-time work to retirement. Ten percent of the sample was without employment-based insurance in both waves, 7% of the sample had employment-based insurance in $wave_{t-1}$ but had lost it by $wave_t$, 80% of the sample had

Table 1. Person Level Descriptive Statistics (1996–2010)

	Mean/proportion	Standard deviation	Min	Max
Depression[a]	1.20	1.55	0.00	8.00
ADLs[a]	0.08	0.33	0.00	5.00
IADLs[a]	0.04	0.23	0.00	5.00
Retired	0.18	—	0.00	1.00
No employment-based insurance[b]	0.10	—	0.00	1.00
Lost employment-based insurance[b]	0.07	—	0.00	1.00
Kept employment-based insurance[b]	0.80	—	0.00	1.00
Gained employment-based insurance[b]	0.04	—	0.00	1.00
Non-group insurance[b]	0.07	—	0.00	1.00
Age[a]	58.25	3.12	50.00	64.00
Education[c]	13.38	2.74	0.00	17.00
White[c]	0.82	—	0.00	1.00
African American[c]	0.14	—	0.00	1.00
Other race[c]	0.03	—	0.00	1.00
Hispanic ethnicity[c]	0.09	—	0.00	1.00
Male[c]	0.49	—	0.00	1.00
Prior self-assessed health[d]	2.36	0.88	1.00	5.00
Prior depressive symptoms[d]	1.11	1.46	0.00	8.00
Prior ADLs[d]	0.05	0.24	0.00	4.00
Prior IADLs[d]	0.03	0.17	0.00	3.00
Unmarried[a]	0.26	—	0.00	1.00
Widowed[a]	0.09	—	0.00	1.00
Divorced[a]	0.40	—	0.00	1.00
Household income[d]	9.89	2.92	0.00	13.46
Household wealth[d]	11.87	4.28	−12.77	18.19
Social security[a]	0.52	1.73	0.00	10.39
Pension[a]	0.89	2.43	0.00	13.03
Medical expenditures[a]	1991.31	4650.95	0.00	204736.00
Cholesterol tests[a]	0.75	—	0.00	1.00
Work past 62[c]	51.63	37.24	0.00	100.00

Notes. ADLs = activities of daily living; IADLs = instrumental activities of daily living. n = 5,779.
[a]Indicates a variable measured at wave$_t$.
[b]Indicates a variable measured at both wave$_{t-1}$ and wave$_t$.
[c]Indicates a time invariant variable.
[d]Indicates a variable measure at wave$_{t-1}$.

employment-based insurance in both waves, and 4% of the sample did not have employment-based insurance in wave$_{t-1}$ but had gained it by wave$_t$. Finally, 7% of the sample had private non-group insurance coverage.

Multivariate Results Predicting Health

Model 1 of Table 2 shows how transitioning from full-time work in wave$_{t-1}$ to full retirement in wave$_t$ was associated with symptoms of depression in wave$_t$. Because the models account for prior symptoms of depression, the coefficients can be interpreted as change scores. In this model, those who transitioned from full-time work to retirement suffered from more symptoms of depression than did those continuously engaged in full-time work. Notably, this model adjusts for potential endogeneity between retirement and depressive symptoms via the included parameters generated from the first stage equation predicting the transition to retirement.

In Model 2 of Table 2, the measures of employment-based insurance were added to the model. Results indicate both those (a) who were without employment-based insurance in wave$_{t-1}$ and wave$_t$, and, (b) who lost employment-based insurance between wave$_{t-1}$ and wave$_t$ suffered from more symptoms of depression than those with employment-based insurance in both wave$_{t-1}$ and wave$_t$. However, those who gained employment-based insurance coverage were not statistically different than those with employment-based insurance in wave$_{t-1}$ and wave$_t$. Notably, this model adjusts for potential endogeneity between employment-based insurance coverage and depressive symptoms via the included parameters generated from the first stage equation predicting insurance coverage. Model 3 of Table 2 added the non-group insurance variable to the previous model, and those with this form of insurance did not differ significantly from those without this form of coverage.

Model 4 of Table 2 shows how transitioning from full-time work in wave$_{t-1}$ to full retirement in wave$_t$ was

Table 2. Population Average GLM Regression Models Predicting Subsequent Health (1996–2010)

	CESD			ADLs			IADLs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Retired[a]	0.247*** (0.041)	0.219*** (0.041)	0.215*** (0.042)	0.081*** (0.009)	0.078*** (0.009)	0.078*** (0.009)	0.060*** (0.006)	0.060*** (0.006)	0.060*** (0.006)
Gained employment-based insurance[b]	—	−0.068 (0.063)	−0.067 (0.063)	—	0.001 (0.014)	0.001 (0.014)	—	−0.013 (0.010)	−0.013 (0.010)
No employment-based insurance[b]	—	0.114* (0.049)	0.136** (0.051)	—	0.003 (0.010)	0.005 (0.011)	—	0.010 (0.008)	0.011 (0.008)
Lost employment-based insurance[b]	—	0.242*** (0.055)	0.271*** (0.058)	—	0.028* (0.012)	0.030* (0.013)	—	−0.003 (0.009)	−0.001 (0.009)
Non-group insurance	—	—	−0.088 (0.056)	—	—	−0.005 (0.012)	—	—	−0.005 (0.009)
Age	−0.011** (0.004)	−0.011** (0.004)	−0.011** (0.004)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	−0.002* (0.001)	−0.002* (0.001)	−0.002* (0.001)
Education[e]	−0.026*** (0.006)	−0.026*** (0.006)	−0.025*** (0.006)	−0.004** (0.001)	−0.004** (0.001)	−0.004** (0.001)	−0.002 (0.001)	−0.002 (0.001)	−0.002 (0.001)
African American[c,e]	−0.028 (0.039)	−0.031 (0.039)	−0.033 (0.039)	−0.007 (0.008)	−0.007 (0.008)	−0.007 (0.008)	0.009 (0.006)	0.009 (0.006)	0.009 (0.006)
Other race[c,e]	−0.01 (0.077)	−0.014 (0.077)	−0.016 (0.077)	0.019 (0.016)	0.019 (0.016)	0.019 (0.016)	0.057*** (0.012)	0.057*** (0.012)	0.057*** (0.012)
Hispanic ethnicity[d,e]	0.098* (0.050)	0.088 (0.050)	0.084 (0.050)	−0.003 (0.010)	−0.004 (0.010)	−0.004 (0.010)	−0.004 (0.008)	−0.004 (0.008)	−0.004 (0.008)
Male[e]	−0.118*** (0.027)	−0.121*** (0.027)	−0.123*** (0.027)	0.007 (0.006)	0.007 (0.006)	0.006 (0.006)	0.006 (0.004)	0.006 (0.004)	0.006 (0.004)
Prior depressive symptom	0.394*** (0.008)	0.393*** (0.008)	0.393*** (0.008)	0.011*** (0.002)	0.011*** (0.002)	0.011*** (0.002)	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)
Prior ADLS	0.139** (0.046)	0.138** (0.046)	0.138** (0.046)	0.406*** (0.010)	0.406*** (0.010)	0.406*** (0.010)	0.067*** (0.007)	0.067*** (0.007)	0.067*** (0.007)
Prior IADLS	0.369*** (0.071)	0.363*** (0.071)	0.362*** (0.071)	0.042** (0.015)	0.042** (0.015)	0.042** (0.015)	0.237*** (0.011)	0.237*** (0.011)	0.237*** (0.011)
Prior self-assessed health	0.191*** (0.014)	0.192*** (0.014)	0.191*** (0.014)	0.028*** (0.003)	0.028*** (0.003)	0.028*** (0.003)	0.012*** (0.002)	0.013*** (0.002)	0.012*** (0.002)
Unmarried	0.164*** (0.035)	0.162*** (0.035)	0.162*** (0.035)	0.013 (0.007)	0.013 (0.007)	0.013 (0.007)	0.024*** (0.005)	0.024*** (0.005)	0.024*** (0.005)
Widowed	0.071 (0.049)	0.068 (0.049)	0.068 (0.049)	−0.007 (0.010)	−0.007 (0.010)	−0.007 (0.010)	−0.010 (0.008)	−0.010 (0.008)	−0.010 (0.008)
Divorced	0.061* (0.027)	0.059* (0.027)	0.058* (0.027)	−0.002 (0.006)	−0.003 (0.006)	−0.003 (0.006)	−0.007 (0.004)	−0.007 (0.004)	−0.007 (0.004)
Household earnings	−0.001 (0.007)	0.002 (0.007)	0.001 (0.007)	−0.005** (0.001)	−0.005** (0.001)	−0.005** (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Household wealth	−0.017*** (0.003)	−0.016*** (0.003)	−0.016*** (0.003)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001* (0.000)	−0.001* (0.000)	−0.001* (0.000)
Social security	−0.012 (0.009)	−0.012 (0.009)	−0.012 (0.009)	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Intercept	1.532*** (0.298)	1.468*** (0.299)	1.460*** (0.299)	0.000 (0.064)	−0.006 (0.064)	−0.006 (0.064)	0.069 (0.046)	0.068 (0.046)	0.068 (0.046)

Notes. ADLs = activities of daily living; CESD = Center for Epidemiologic Studies—Depression; IADLs = instrumental activities of daily living. n = 5,779 and N = 14,477; Models also account for the inverse Mills ratio estimated from the each of the two sets of first stage models, as well as dummy coded measures of wave of interview. Full results available upon request.

[a]Remained in full-time work.

[b]Kept employment-based insurance.

[c]White.

[d]Non-Hispanic.

[e]Indicates a time-invariant variable.

*p < .05. **p < .01. ***p < .001 (two-tailed tests) standard errors in parentheses.

Table 3. Population Average Generalized Linear Regression Models Predicting Symptoms of Depression, ADLs, and IADLs (1996–2010)

	CESD	ADLs	IADLs	CESD	ADLs	IADLs
	1	2	3	4	5	6
Retired[a]	0.214*** (0.042)	0.077*** (0.009)	0.059*** (0.006)	0.138** (0.047)	0.045*** (0.010)	0.043*** (0.007)
Gained emp. based ins.[b]	−0.056 (0.064)	0.001 (0.014)	−0.012 (0.010)	−0.052 (0.066)	−0.003 (0.014)	−0.009 (0.010)
Lost emp. based ins.[b]	0.165** (0.056)	0.010 (0.012)	0.018* (0.009)	0.087 (0.055)	−0.024* (0.012)	−0.011 (0.008)
No emp. based ins.[b]	0.292*** (0.067)	0.036* (0.015)	0.004 (0.010)	0.133 (0.072)	0.003 (0.016)	−0.004 (0.011)
Non-group ins.	0.033 (0.088)	0.019 (0.019)	0.021 (0.014)	−0.076 (0.056)	−0.001 (0.012)	−0.004 (0.009)
Interactions						
Gained emp. based ins. × non-group ins.	−0.343 (0.344)	−0.006 (0.075)	−0.034 (0.053)			
Lost emp. based ins. × non-group ins.	−0.212 (0.131)	−0.041 (0.028)	−0.048* (0.020)			
No emp. based ins. × non-group ins.	−0.171 (0.140)	−0.039 (0.030)	−0.040 (0.022)			
Retired × gained emp. based ins.				−0.210 (0.224)	0.040 (0.049)	−0.050 (0.035)
Retired × lost emp. based ins.				0.315* (0.123)	0.183*** (0.027)	0.142*** (0.019)
Retired × no emp. based ins.				0.390*** (0.113)	0.086*** (0.025)	0.017 (0.017)

Notes. ADLs = activities of daily living; CESD = Center for Epidemiologic Studies—Depression; IADLs = instrumental activities of daily living. n = 5,779 and N = 14,477; Models also account for age, education, African American, other race, Hispanic ethnicity, male, prior depressive symptom, prior ADLs, prior IADLs, prior self-assessed health, unmarried, widowed, divorced, household earnings, household wealth, social security, and the inverse Mills ratio estimated from the each of the two sets of first stage models, as well as dummy coded measures of wave of interview. Full results available upon request.

[a]Remained in full-time work.

[b]Kept employment-based insurance.

*p < .05. **p < .01. ***p < .001 (two-tailed tests), standard errors in parentheses.

associated with difficulties with ADLs in wave$_t$. In this model, as was the case for symptoms of depression, transitioning to retirement in wave$_t$ was associated with greater ADL difficulty. When the measures of employment-based insurance were added to the equation (Model 5), people who lost employment-based insurance between wave$_{t-1}$ and wave$_t$ suffered from greater ADL difficulty than those with continuous insurance coverage. Non-group insurance was added to the equation in model 6, and, as was the case for the similar model for symptoms of depression, this form of insurance was not associated with ADL difficulties.

Model 7 of Table 2 shows transitioning from full-time work in wave$_{t-1}$ to full retirement in wave$_t$ was associated with difficulties with IADLs in wave$_t$. In this model, as was the case for symptoms of depression and ADL difficulty, the transition to retirement in wave$_t$ was associated with greater IADL difficulty. In Model 8 of Table 2, employment-based insurances were added to the equation, but were not significantly associated with increased IADL difficulty. Finally, in Model 9 of Table 2, non-group insurance was added to the equation predicting IADLs limitations, and again, this form of coverage was not associated with IADL difficulty.

To assess whether the influence of employment-based insurance on subsequent health was contingent upon whether respondents had non-group insurance in wave$_t$, interactions between non-group insurance and each of the three measures of employment-based insurance were added to Models 3, 6, and 9 of Table 2, and are presented as Models 1–3 of Table 3. Although the associations between employment-based insurance and depressive symptoms with ALDs were not conditional upon non-group insurance in wave$_t$, these associations were contingent upon non-group insurance when predicting subsequent IADLs. Specifically, the positive association between losing employment-based insurance in wave$_t$ was significantly smaller among those who had non-group insurance in wave$_t$ for IADLs, and, importantly, revealed that after accounting for this moderating effect, the direct effect of losing employment-based insurance was significantly associated with greater IADL limitations. Because this was not apparent in the direct effects model (Model 9 of Table 2), this suggests that losing employment-based insurance primarily has deleterious consequences for those who are not able to offset this loss through the acquisition of non-group coverage.

To assess whether the influence of employment-based insurance was contingent upon whether someone transitioned to retirement, three additional interactions were constructed for each health outcome. In this case, each

of the three patterns of employment-based insurance were multiplied by the retirement variable. In Model 4 of Table 3, two of the interactions were significantly associated with depressive symptoms; both losing employment-based insurance and being continuously uninsured during the transition from full-time work to retirement were associated with greater symptoms of depression. In Model 5 of Table 3, as was the case for depression, both being without employment-based insurance in both waves and losing employment-based insurance during the transition from full-time work to retirement were associated with greater ADL limitations. Finally, in Model 6 of Table 3, losing employment-based insurance between $wave_{t-1}$ and $wave_{t}$ was associated with greater ADL limitations among those who transition from full-time work to retirement.

Discussion

Using the 1996–2010 waves of the Health and Retirement Study data, I sought to assess: (a) how changes in employment-based insurance were related to changes in mental and physical health; (b) whether private non-group insurance could offset the health risks among those without employer provided insurance; and (c) if the linkages between private health insurance and subsequent health would be conditional upon the transition to retirement. Results indicate private insurance coverage is generally important for the mental and physical health of people, though the association was contingent upon retirement status and varied across the three health outcomes. These findings provide several important insights into the role of insurance coverage changes on health during the transition to early retirement.

First, the hypothesis that losing employment-based insurance would be associated with poorer mental and physical health was generally supported. The results indicate, relative to those with employment-based insurance in consecutive waves, losing employment-based insurance was indeed associated with increased symptoms of depression and ADL limitations. For those without non-group coverage, losing employment base insurance was associated with increased IADLs as well. These findings extend earlier research that private insurance is generally important for better health (Dor et al., 2006; Dunlop et al., 2003; Landerman et al., 1998; Levy & Meltzer, 2008; Quesnel-Vallee, 2004) by showing that the loss of insurance coverage can quickly alter individuals' health trajectories. This finding highlights the dynamic nature of insurance in life course processes.

Second, it is notable that those who lost insurance fared worse than those who were without employment-based insurance in both waves regarding depressive symptoms. One plausibility is these people suffered from comparable numbers of symptoms of depression as those with steady coverage while working, but wound up looking more like those with no employer coverage after they lost insurance. Indeed, descriptive results bear this out. It could be that losing insurance coverage was itself a distressing event—thereby leading to increased symptoms of depression—and this would have not impacted those who were without insurance in both waves.

Third, it is notable that, in this sample, gaining employment-based insurance had no significant impact on subsequent symptoms of depression, ADLs, or IADLs. It may be that, unlike losing insurance—which may be stressful, in addition to representing the loss of a benefit—that there is no accompanying reduction in stress associated with gaining new insurance. Another possibility is that it may take time for the addition of health insurance to translate into good health.

Fourth, the hypothesis that being covered through private non-group insurance would be associated with better subsequent physical and mental health was not supported, and the hypothesis that this would be particularly the case for those without other forms of private insurance only had limited support. Although non-group insurance was not a predictor of changes in health between the waves before and after retirement, it did condition the association between losing employment-based insurances and subsequent IADLs, wherein non-group insurance helped buffer against some of the deleterious consequences of losing employment-based insurance. However, it is important to point out that non-group insurance did not offset the deleterious consequences of being without employment-based insurance for either depression or ADL limitations.

Finally, research on the health consequences of retirement has been ambiguous (Drentea, 2002; Gallo et al., 2000; Herzog et al., 1991; Midanik et al., 1995; Reitzes et al., 1996; Ross & Drentea, 1998). The current research contributes to this discussion by supporting evidence that the relationship between retirement and health may be contingent upon on a variety of contexts (Gayman et al., 2013; Wheaton, 1990). Specifically, having employment based health insurance after transitioning to retirement appears to be an important contextual factor for good health.

One limitation of this study is that it only explores the proximal consequences of private insurance coverage. It is plausible, however, changes in insurance coverage do not immediately translate into changes in health, but rather, these health consequences play out over time. As such, the analyses presented here likely represent a conservative estimation of the association between losing coverage and declines in health over time. Future analyses should consider the distal consequences of the loss of private insurance coverage.

Another set of limitations to this study involves things that cannot be measured with the HRS dataset. First, some people change employment status and/or insurance coverage in anticipation of changes in health (rather than current health status). Although the two first stage selection equations lend some credibility to the estimates, unfortunately these changes cannot be directly measured with the

HRS data. Second, the analyses cover a 15-year period, and during this period much has changed regarding the retirement and private insurance landscape. Notably, the period of observation includes the Great Recession. Although the models include dummy variables to account for the wave of the interview, there is presumably some residual unmeasured variation over time. It would be beneficial for future analyses to explore how the relationship between employment-based insurance and subsequent mental and physical health has changed over time.

Third, the HRS has considerable detail regarding the source of private insurance and provides details of the particular plan characteristics, including the generosity of coverage. However, there is generally considerable missingness in these measures and, therefore, they were not used here. Inasmuch as the plan characteristics may meaningfully differentiate the association between private coverage and subsequent health (and are plausibly driving the difference between employment-based insurance and non-group insurance), future research should explore these possibilities further with alternative data sources.

Finally, although the focus of this research was on private insurance coverage, some early retirees have access to public insurance through Medicaid, Medicare, or Veteran's Insurance (among others). Therefore, the impact of private insurance in this data is likely underestimated, because some people in this sample are supplementing their private insurance through public insurance programs.

These findings shed some insight into how the Affordable Care Act (ACA) might impact health in the years leading up to Medicare eligibility. First, if the ACA incentivizes employers to continuing offering insurance coverage as people shift into retirement, this may prove to be a boon to the health of early retirees. In fact, there have been attempts to do just this through the temporary federal Early Retiree Reinsurance Program (ERPP), which reimbursed employers who reinsure retirees to up to 80% of their health benefits claims cost (up to $90,000) (White House Press Release, 2010). Second, on one hand, early evidence suggests that fewer companies are offering retiree health insurance, which will leave early retirees in more economically precarious positions and more reliant upon the non-group market. On the other hand, there is also evidence that some retirees from lower income employment are opting out of their employer plans and into the ACA marketplace—in part, because of the federal subsidies for these plans (Kaiser Family Foundation, 2014). Third, when individuals lose employment-based insurance prior to Medicare eligibility, because of the individual mandate portion of the ACA, they will have to secure new insurance—likely via non-group plans. Although these new group plans may help limit increases in IADL limitations, it is not clear that they will entirely offset the health consequences of losing employer provided insurance. Fourth, there are relatively few of these non-group insurance plans available to early retirees. Although the ACA attempted to offset this dearth of non-group plans through the ERPP, the program quickly ran out of funding because of high demand (Kaiser Family Foundation, 2014). Finally, in the context of the ACA, future research questions around health and insurance will no longer center around the distinction between being insured and uninsured. They should, however, continue to focus on the distinctions between different forms and the generosity of coverage (For example, there are differences in generosity across the five levels of insurance offered through the Health Insurance Marketplace: bronze; silver; gold; platinum; and catastrophic.), and how various forms and the generosity of coverage are differentially associated with health outcomes.

Conclusion

As fewer companies offer health insurance to their former employees (Gould & Hertel-Fernandez, 2010; Kaplan et al., 2009), people are increasingly entering into early retirement without private insurance coverage. Although some early retirees are able to offset this insurance deficit by acquiring non-group insurance, in this study 75% of those without employment-based insurance during retirement were without any form of private insurance. Unless early retirees are increasingly able to secure non-group insurance, the findings presented here suggest the declines in employer provided retirement insurance may have serious negative consequences for U.S. population health—and it remains unclear how far the ACA can go to limit these consequences.

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Supplementary Material

Supplementary material can be found at: http://psychsocgerontology.oxfordjournals.org/

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