Health Consequences of Retirement Among Married Couples:
The Moderating Effects of Spousal Characteristics

Sae Hwang Han

Department of Gerontology
McCormack Graduate School of Policy and Global Studies
University of Massachusetts Boston

Population aging in developed countries around the globe, including the United States, has placed issues pertaining to health effects of retirement at the center of social and policy discourses (Henkens et al., 2018), but research findings on the topic remain largely inconclusive (van der Heide et al., 2013). What is also not well-understood is the role of spousal characteristics in the relationship between retirement transitions and subsequent health among married individuals (Wang & Shih, 2014). This study contributes to the literature on retirement and health by addressing the following three research questions. The first question addresses whether retirement transitions are associated with subsequent self-rated health of the retiree among married individuals. The second and third research questions address whether the health consequences of retirement vary depending on spouse's labor force status and depression.

This study is based on nine waves of biennial data (1998–2014) from the *Health and Retirement Study* (HRS), a nationally representative panel study of older adults in the United States. The study sample included 4,208 married couples, representing 40,464 person-wave observations. Health was assessed with respondents' rating of their own health on a 5-point scale, recoded into a binary measure indicating self-rated poor health (1 = *fair* or *poor health*, 0 = *excellent*, *very good*, or *good health*). Labor force transitions were based on changes in retirement/labor force status across each set of adjacent waves. These transitions were assessed with the following indicators: *continued working* (reference); *transitioned to retirement due to non-health reasons*; *transitioned to retirement due to poor health; continued retirement*; and *other transitions*. Spousal labor force status was assessed with a three-category measure: *working* (reference, includes part- and full-time work); *retired*; and *other* (i.e., homemaker, disabled, unemployed). Depressive symptoms were assessed with an 8-item version of the Center for Epidemiological Studies-Depression scale. Covariates included sociodemographic measures as well as a number of time-varying factors that could potentially confound the relationship between retirement transition and health (see Tables 1 and 2).

A series of within-between random effects (WBRE) logistic regression models were estimated to address the research questions (Bell & Jones, 2015). A major methodological challenge for uncovering the direction of the relationship between retirement and health is endogeneity bias, which takes several forms. I addressed two sources of endogeneity that may bias the estimation of health consequences of retirement. First is the issue of reverse causality, where the health consequences of retirement may be biased by cases where retirement is driven by poor health. To account for this potential bias, retirees whose retirement decisions are unrelated to their health were identified by utilizing information on self-reported reasons for retirement, where retirements that

were reported to be due to poor health were specified in the models separately from retirements driven by other reasons. The second form of endogeneity bias is omitted variable bias. This is addressed through WBRE models that have been shown to perform at least as well as fixed effects models in terms of providing unbiased estimates, assuming a proper specification of within- and between-effects of time-varying predictors are included. The between-person component of the model compares the health outcomes of one person who continued working, for example, to another person who makes a labor force transition. Further, the within-person component compares the health of a person who continued working at a given observation point to the same person at a later time when he or she transitioned to retirement. The approach uses each person as his or her own control, and it produces estimates that are independent of selection effects attributed to all stable inter-individual differences, both observed and unobserved (Bell & Jones, 2015). The multilevel analyses based on WBRE formulations were conducted separately for wives and husbands, using the STATA XTLOGIT procedure. Odds ratios and 95% confidence intervals are presented.

The findings showed that withdrawal from the labor force was associated with worse health for wives, but not husbands, when the transition was not driven by poor health (Table 2, Models 1a and 1b); that is, compared to continuing to work, transitioning to retirement due to non-health reasons was associated with increased odds of reporting self-rated poor health for wives only. Transitioning to retirement due to poor health was associated with worse subsequent health for both spouses. Results from interaction models suggested that the health consequences of retirement may be different depending on spousal characteristics (Table 2, Models 2a and 2b). For wives, health consequences of non-health-driven retirement were significantly worse when their husbands were retired compared to when husbands were working. For husbands, health consequences of retirement driven by poor health was attenuated when their wives were retired compared to when wives were working. For both wives and husbands, health consequences of retirement driven by poor health were significantly worse when their spouses had a higher level of depressive symptoms. This study is among the first to examine how retirement transitions are related to the subsequent health of married individuals using a national sample in the United States, focusing on spousal characteristics.

References
Bell, A., & Jones, K. (2015). Explaining fixed effects: Random effects modeling of time-series cross-sectional and panel data. *Political Science Research and Methods, 3*, 133-153.
Henkens, K., van Dalen, H. P., Ekerdt, D. J., Hershey, D. A., Hyde, M., Radl, J., . . . Zacher, H. (2017). What we need to know about retirement: Pressing issues for the coming decade. *The Gerontologist*, 58, 805-812.
van der Heide, I., van Rijn, R. M., Robroek, S. J., Burdorf, A., & Proper, K. I. (2013). Is retirement good for your health? A systematic review of longitudinal studies. *BMC public health, 13*, 1180.
Wang, M., Henkens, K., & Van Solinge, H. (2011). Retirement adjustment: A review of theoretical and empirical advancements. *American Psychologist, 66*, 204

Table 1.
Descriptive Characteristics of the Study Sample at Baseline

	Wives		Husbands	
	M	(*SD*)	*M*	(*SD*)
Poor self-rated health[a], %	15.7		16.0	
Retirement/labor force status, %				
Working (part/full time)	71.6		84.3	
Retired (full retirement)	9.7		11.2	
Other (homemaker, unemployed, disabled)	18.7		4.6	
Individual-level characteristics				
Age (in years)	54.73	(7.46)	57.79	(7.22)
Race/ethnicity, %				
White (non-Hispanic)	73.4		73.7	
Black (non-Hispanic)	11.3		11.3	
Other race (non-Hispanic)	3.2		3.3	
Hispanic (any race)	12.2		11.7	
Educational attainment (in years)	13.04	(2.89)	13.14	(3.18)
Insured[b], %	90.9		91.3	
Occupation type, %				
Professional/managerial	32.7		35.2	
Clerical/sales/service	51.3		22.2	
Blue-collar	10.1		41.3	
Never worked	5.8		1.3	
Depressive symptoms[c]	1.29	(1.84)	1.02	(1.55)
Couple-level characteristics				
Household wealth (IHS-transformed)	22.71	(3.80)		
Median value (in $1,000)	148.00			
Household income (log-transformed)	11.00	(1.16)		
Median value (in $1,000)	65.30			
Duration of current marriage (in years)	24.02	(19.16)		
Number of people in household	2.81	(1.25)		
Number of waves used in study	4.8	(2.41)		

Notes. Dyad *N* = 4,208. *M* = mean. *SD* = standard deviation. IHS = inverse hyperbole sine. Baseline refers to the first wave in which the married couple participated in the *Health and Retirement Study* during the study period. [a]Poor self-rated health (1 = *poor* or *fair health*; 0 = *excellent, very good,* or *good health)*. [b]Insurance coverage through Medicare/Medicaid, either spouse's employer (current or past), or any other supplemental insurance (1 = *insured*; 0 = *not insured*). [c]8-item version of the Center for Epidemiological Studies-Depression Scale (CES-D).

Table 2.

Retirement Transitions, Spousal Characteristics, and Self-rated Poor Health Among Couples

	Main effects only				Interaction effects			
	Model 1a: Wives		Model 1b: Husbands		Model 2a: Wives		Model 2b: Husbands	
Main effects								
Retirement transitions (ref: continued working)								
Transitioned to retirement: non-health reasons	1.79***	[1.29,2.48]	1.26	[0.98,1.63]	1.00	[0.59,1.67]	1.23	[0.81,1.87]
Transitioned to retirement: due to poor health	2.20***	[1.45,3.35]	3.19***	[2.30,4.41]	1.61	[0.83,3.13]	3.39***	[2.03,5.67]
Continued retirement	1.14	[0.88,1.47]	1.31*	[1.04,1.65]	0.95	[0.68,1.32]	1.23	[0.91,1.67]
Spousal characteristics								
Spouse retired (ref: spouse working)	0.78*	[0.64,0.96]	0.97	[0.80,1.19]	0.64**	[0.46,0.88]	1.08	[0.81,1.44]
Spouse depressive symptoms (range: 0-8)	1.10***	[1.05,1.16]	1.07**	[1.02,1.11]	1.02	[0.94,1.10]	1.02	[0.96,1.08]
Interaction effects								
Transitioned to retirement: non-health reasons								
× Spouse retired (ref: spouse working)					2.44**	[1.26,4.71]	0.83	[0.48,1.44]
× Spouse depressive symptoms					1.11	[0.90,1.36]	1.09	[0.96,1.24]
Transitioned to retirement: non-health reasons								
× Spouse retired (ref: spouse working)					0.79	[0.33,1.85]	0.44*	[0.22,0.88]
× Spouse depressive symptoms					1.59**	[1.20,2.10]	1.20*	[1.02,1.41]
Continued retirement								
× Spouse retired (ref: spouse working)					1.13	[0.76,1.68]	0.91	[0.63,1.31]
× Spouse depressive symptoms					1.20**	[1.07,1.34]	1.08	[0.99,1.17]
Person-wave observations	20,232		20,232		20,232		20,232	

Notes. Dyad *N* = 4,208. Odds ratios and 95% Confidence intervals (in brackets). Main effects of, and interaction effects involving, 'other retirement transition category' and 'other spousal labor force status category' not shown. Models are fully-adjusted for between-person effects of retirement transitions and spousal characteristics, as well as linear time, age, race/ethnic status, education, household wealth[*] (inverse hyperbole sine-transformed), household income[*] (log-transformed), insurance coverage[*], occupational type for job with longest reported tenure, length of current marriage in years, number of people in the household[*], and year of interview ([*]indicates time-varying covariates, whose within- and between-person effects are also separately specified in models ; other covariates are measured at baseline).
p < .05. **p* < .01. ***p* < .001.