Partner Consequences of Health Shocks

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INTRODUCTION

Health problems are common among older Americans. According to self-reports from the National Health and Interview Survey, more than one-fifth (22.9%) of adults aged 55 and over in the United States were in poor or fair health. Furthermore, among these same individuals, 47.3% report hypertension and 24.8% report heart disease. Rates of diabetes were highest among those aged 65-74 years at 19.2% (Schoenborn and Heyman 2009). With the proportion of adults aged 55 and over expected to make up nearly one-third of the total U.S. by 2030 (U.S. Census Bureau 2008), examining the differences in health status will help to further our understanding of health patterns at older ages.

Existing research has focused on individual risk factors while giving less attention to social contexts and environments, such as families, peers, and the community. For spouses specifically, not only does their health have implications for their own well-being but also for the well-being of their partner. There are numerous ways in which the dyadic network can have an effect on health, such as through social support and influence, social engagement, contact between individuals, and access to resources (Berkman and Glass 2000). Additionally, intimate partners can be of great influence, both positively, such as motivating changes in poor health behaviors, and negatively, such as encouraging the relapse of problematic behaviors.

Previous literature has yet to fully examine how changes in the health of family members, particularly spouses, affect one's own health. A majority of research in this area has focused on concordance of health among spouses. Studies have found significant spousal concordance in behaviors such as smoking, alcohol intake, weight gain, and even cardiovascular risk (Castelnuovo et al. 2008; Christakis and Fowler 2008; Graham and Braun 2002; Sobal et al. 2003). Though there is a self-selection effect in that people are likely to marry someone with

similar behaviors to themselves, research also shows that spousal behaviors change in concordance with their partner over time (Gorin et al. 2008; Sobal et al. 2003). One weight loss study even found that if an individual is participating in a weight loss program, there is a significant chance that their nonparticipating spouse will also lose weight (Gorin et al. 2008). This may reflect the influence of one spouse on another and/or a shared environment.

Many studies indicate that compared to men, women are more likely to experience worse physical and mental health outcomes when caring for an ill spouse (Dura et al. 1990; Fitting et al. 1986). For example, wives experienced a higher risk of experiencing depressive symptoms if their husbands were diagnosed with chronic conditions, high blood pressure or a stroke. However, there was no significant effect on husbands' depressive symptoms following the diagnosis of chronic conditions of their wives (Ayotte, Yang, and Jones 2010). Additionally, while women suffered poorer mental health than men when taking care of a spouse with dementia, no gender differences appeared when caring for a spouse with Parkinson's (Hooker et al. 2000). Because of this confounding research and the lack of literature on the effects of spousal care giving due to health shocks, it is important to examine whether the effects differ between for men and women.

Research suggests that marriage is generally beneficial for health and well-being, although questions remain over specific causal mechanisms as well as issues of selectivity and shared environments. In this context, it may be particularly informative to consider what happens among older couples when one spouse/ partner experiences a negative health shock. Tracing downstream changes in the other partner's physical and mental health following a serious health event may give insight into the ways in which spouses contribute to each other's health status. The present research uses longitudinal data from the HRS, combining multiple waves for persons

ages 50+. In the current analysis, we consider how the experience of a negative health event of one partner affects the mental health of the other partner. This study is a pilot for a larger study that will examine both physical and mental health outcomes.

Using multiple waves of the Health and Retirement Study (HRS), we examine changes in health statuses among married/cohabiting couples. More specifically, we have two research questions: (1) Is there a relationship between a change in one spouse's health and the health of their partner? (2) If so, are the effects the same for men and women?

DATA AND METHODS

Data for this pilot study come from the Health and Retirement Study (HRS), a nationally representative study of adults aged 50 and older in the United States beginning in 1992. This research begins with data collected from Wave 1 (1992) and Wave 3 (1996), and our intent is to expand to include a longer time span. Our sample consists of respondents who completed interviews at both waves, reported being married or cohabiting at Wave 1 and who remained with the same partner at Wave 3, had information for all of the variables, and had a valid sample weight. Our final sample includes 6,217 individuals (2,945 men and 3,272 women).

MEASURES

Dependent Variable

Respondent's level of depressive symptoms was measured with a modified 8 item version of the Center for Epidemiologic Studies Depression Scale (CES-D), based on a series of yes/no questions. We use Wave 3 depression as an outcome variable and control for depression at Wave I. The Wave 1 depression index has a Cronbach's alpha score of .81, with values ranging from 8-32. The depression index at Wave 3 has a reliability of .80, with values ranging from 0-8.

Independent Variable

A health shock is defined as the onset of a severe condition – conditions that are considered severe in this study include cancer, heart condition, stroke, and lung disease, as they may cause declines in functioning among individuals. Being that these conditions may differ in acuteness and severity, our future study will further examine these specific conditions along with other potential types of health shocks, such as accidents and death. Furthermore, because it is likely that conditions will increase in prevalence as the respondents age, we will explore the potential effect of how these conditions uniquely influence the health of their partner. Health status was constructed to look at self-reported ever diagnosed conditions of the respondent's partner between Waves 1 and 3. We divide this variable into three dummy variables: *Bad change* (comprised of respondents who reported a change in condition, going from no severe condition at Wave 1 to reporting a severe condition at Wave 3), *no change – bad* (comprised of respondents who consistently reported severe conditions at both Waves 1 and 3), and *no change – good* (comprised of respondents who consistently reported no severe conditions and both Waves 1 and 3), with *no change – good* serving as the reference category[1].

Controls

Socio-demographic variables for the respondent are taken from the Wave I interview and include age, race/ethnicity, education, income, and depressive symptoms at Wave 1. We present results for men and women separately. As this research progresses, we will expand to include additional controls, such as physical health and health related behaviors of the respondent, and social support to better understand the complexity of the health risks from social ties.

ANALYTIC STRATEGY

[1] Due to small samples sizes, respondents who reported having a severe condition at Wave 1 to reporting no severe condition at Wave 3 were omitted from the analyses.

Using the HRS, we examine the association between health status of the partner between Waves 1 and 3 and level of depressive symptoms of the respondent at Wave 3. Because depressive symptoms is a count outcome, is heavily skewed left, and has an overdispersed variance, we chose negative binomial regression.

All multivariate tables, shown separately by gender, display the weighted exponentiated coefficients, which can be interpreted as incidence rate ratios. Model 1 includes partner health status and level of depressive symptoms for the respondent at Wave 1, while Model 2 includes respondent socio-demographic characteristics.

PRELIMINARY EVIDENCE

Descriptive Results

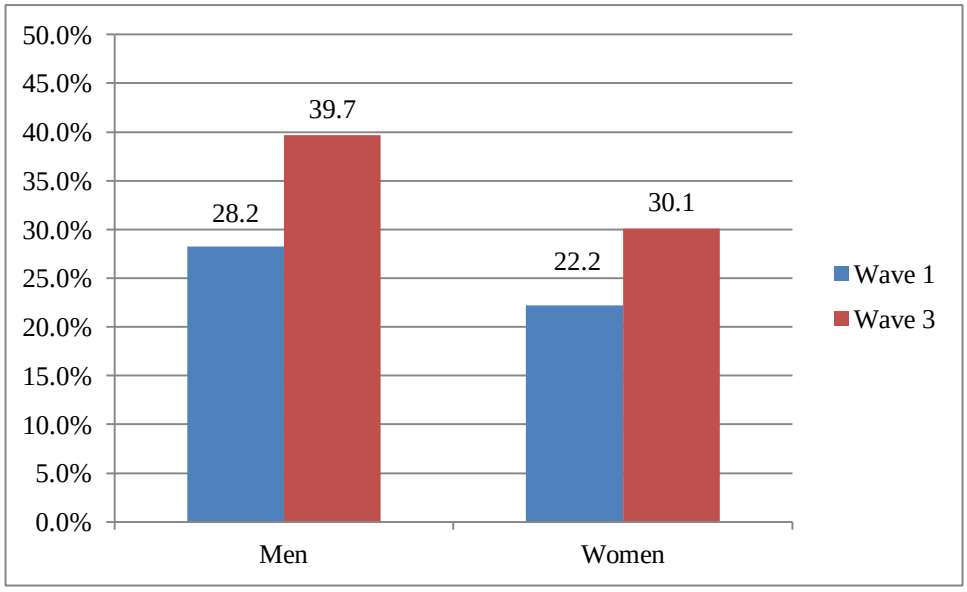
Table 1 displays the distribution of sociodemographic characteristics and mean level of depressive symptoms of the respondent, separately by gender. At Wave 1, the average age of males was about 57 years whereas for females, it was approximately 53 years. While men and women had similar levels of educational attainment, men earned an income than was more than two times that of women ($30,000 and $12,000, respectively). Additionally, the majority of both men and women were non-Hispanic white. When examining depressive symptoms at Wave 3, we find that on average, women reported higher levels of depressive symptoms compared to men.

Table 1: Descriptive Results for Respondents at Wave 1

Variable	Men	Women
Mean level of depressive symptoms (Wave 3)[2]	0.87	1.1
Age (in years)	57.2	53.3
Income	$30,141	$12,437
Education (in years)	12.6	12.5
Race/Ethnicity		
White	87.7%	87.5%
Black	7.3%	7.5%
Hispanic	5.0%	5.0%
N	2,945	3,272

Figure 1 shows the proportion of severe conditions reported by the partner at Waves 1 and 3 by gender. While there was an increase for both men and women in the proportion of severe conditions between Waves 1 and 3 (28% to 40% and 22% to 30%, respectively), men are more likely to report a severe condition at both time points.

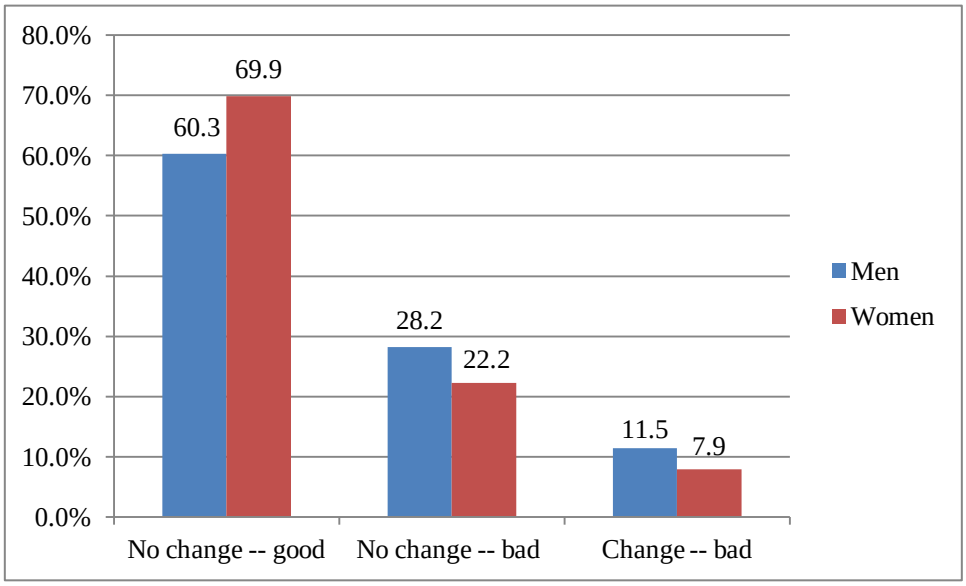
Figure 1: Partner's Reporting of Severe Condition



[2] Because Wave 1 depressive symptoms is measured different than at Wave 3, and because we are not examining change in depressive symptoms, we do not include the mean level of depressive symptoms at Wave 1.

Figure 2 presents the partner's reporting of subjective health status between Waves 1 and 3 by gender. The majority of men and women are not likely to report a severe condition at either wave. However, the onset of a severe condition at Wave 3 did occur in our sample. About 12% of men and 8% of women reported the onset of a health shock between Waves 1 and 3. As we begin to expand our study to include a longer time series, we expect that the proportion of individuals experiencing health shocks will increase as respondents age. Furthermore, a longer study time will allow us to examine allow us to examine reoccurring events as spouses move in and out of specific health conditions.

Figure 2: Partner's Reporting of Health Status between Waves 1 and 3



Multivariate Results

Tables 2 and 3 show the results of negative binomial regression models predicting depressive symptoms at Wave 3.

Model 1 in Table 2 indicates men report 29% more depressive symptoms when the wife experiences a health shock, relative to wives with consistently good health. While this is slightly

mediated by respondent characteristics in Model 2, the effects remain marginally significant. Turning to women in Table 3, our baseline model shows that a health shock among husbands is significantly related to depressive symptoms. Women whose partner experienced a health shock have an 18% increase in the number of depressive symptoms. As with men, although the inclusion of sociodemographic characteristics slightly mediates this relationship (Model 2), the effect remains significant.

In terms of direct effects, higher years of education are associated with decreases in the number of depressive symptoms for both men and women. When examining race/ethnicity, results suggest that compared to white men, black and Hispanic men report 25% and 31%, respectively, more depressive symptoms. For women, being black is associated with 21% more depressive symptoms.

Table 2: Respondent Depressive Symptoms at Wave 3 (Men)

	Model 1	Model 2
Partners Health Status		
No change – good (ref)		
No change – bad	1.15*	1.07
Change – bad	1.29**	1.19+
Depressive Symptoms at Wave 1 (Respondent)	1.21**	1.19**
Age (in years)		1.01
Education (in years)		0.95**
Income		1.00**
Race/Ethnicity		
White (ref)		
Black		1.25**
Hispanic		1.31*

N = 2,945

Note: +p≤.10; *p≤.05; **p≤.01

Table 3: Respondent Depressive Symptoms at Wave 3 (Women)

	Model 1	Model 2
Partners Health Status		
No change – good (ref)		
No change – bad	1.25**	1.23**
Change – bad	1.18+	1.16+
Depressive Symptoms at Wave 1 (Respondent)	1.16**	1.14**
Age (in years)		0.99*
Education (in years)		0.92**
Income		1.00+
Race/Ethnicity		
White (ref)		
Black		1.21**
Hispanic		1.15

N = 3,272
Note: +p≤.10; *p≤.05; **p≤.01

DISCUSSION

This paper tackles an important and intriguing area that has received relatively little attention. In our findings, we show preliminary evidence that among both men and women, a health shock to an individual has an independent effect on the mental health of their partner.

FUTURE WORK

There are many directions that we would like to explore as this research progresses. First, we would like to incorporate multiple waves and repeated events to more adequately capture the health impact of social networks. Second, examining other types of health shocks, such as onset of disability, changes in activities of daily living (ADLs), changes in instrumental activities of daily living (IADLs), death, and unexpected health shocks, such as severe accidents, in addition to the acuteness and severity of these conditions, is important to fully understand the effect

health changes have on the well-being of one's partner. Finally we will examine how conditions uniquely influence the health of their partner. Not only will our analyses include depression as an outcome, but we will expand our range of medical conditions to include a wider range of physical and mental health outcomes, such as changes in hypertension and weight. We believe that this study will not only address a significant gap in various areas of literature, but it also has implications for policy and health care providers. Understanding the health risks that come from social ties and, especially, the impact of one partner's health on the other, will allow more effective prevention and treatment efforts.

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