The Unequal Burden of Health on Household Wealth: Gender Differences in Chronic Disease Effects

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Objective

This study aims to explore the relationship between health and household wealth in couples using data from the 1996-2020 Health and Retirement Study (HRS). Employing a hierarchical linear modeling (HLM) approach, it examines the economic influences of health issues on household wealth, differentiating between the effects of husbands' and wives' health conditions. The results indicate that wives' chronic diseases, such as diabetes, cancer, and stroke, are linked to significant reductions in household wealth, whereas similar health issues in husbands have a minimal effect. However, when health problems limit work capacity, the husband's diseases tend to negatively impact household wealth more than the wife's. These findings highlight the gender-specific effects of health on wealth and suggest that policymakers should consider these differences when designing policies aimed at health and financial security.

Significance

Health is a major determinant of financial well-being with potentially large economic implications (Bloom & Canning, 2003; Capatina, 2015). Poor health can significantly restrict a household's capability to accumulate assets, either through reduced earning capacity due to missed workdays, decreased productivity, or elevated medical expenses that can strain household budgets (Bor et al., 2017; Genoni, 2012; Smith, 1999). Health conditions can also influence household savings amount as well as portfolio decisions (Atella et al., 2012; Bressan et al., 2014; Rosen & Wu, 2004). Since couples often share resources and responsibilities, the health of an individual is not solely a factor in determining their personal quality of life but also serves as a crucial aspect influencing the well-being of their spouse. When one spouse encounters health challenges, the healthier one often assumes caregiving responsibilities (Lee & Tang, 2015; Min et al., 2020). The caregiving partner may reduce their work hours to provide care, affecting the overall financial situation of the household.

Previous research has either overlooked the distinction between the effects of health shocks on husbands and wives within couples, or has not examined the underlying causes of wealth disparities among households with different types of patients. Utilizing data from the Health and Retirement Study (HRS), our study investigates the gender-specific and disease-specific effects of health on household wealth. This research contributes to the literature by shedding light on how health affects total household wealth, income, and out-of-pocket medical expenses, offering a deeper understanding of the financial consequences of health issues in couples.

Method

Data

The 2020 RAND-HRS dataset, developed by the RAND Center for the Study of Aging, integrates data from the Health and Retirement Study (HRS) conducted biennially from 1992 to 2020 across 15 waves. This composite dataset provides comprehensive information on household financial positions, including assets and income, along with detailed health conditions, including chronic diseases and new health events. The longitudinal nature of the dataset enables analysis of how changes in health status impact wealth reduction. To minimize confounding variables related to career stages and age disparities, the study focused on households with at least one pre-retiree aged 50 or older but not yet retired, compiling data from 12 HRS survey waves between 1996 and 2020, resulting in a sample size of 14,897.

Variables

The dependent variable in this study is total household wealth, defined as the sum of all assets minus debts, which includes residences, non-residential real estate, businesses, vehicles, various investment accounts, and other assets. To address their right-skewed distributions, household wealth, annual gross income, and out-of-pocket medical expenses are log-transformed, with all monetary values adjusted to 2020 dollars using the Consumer Price Index.

Independent variables include indicators of severe health conditions and a binary variable for work limitations, allowing for the comparison of health shocks between husbands and wives in

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coupled households. Specifically, the study utilizes objective health measures diagnosed by medical professionals to mitigate the biases of self-reported health data, focusing on eight prevalent chronic diseases among older adults, with the first five categorized as severe health conditions based on their severity and financial impact.

Methods of Analysis

This study employs a hierarchical linear modeling (HLM) approach that includes both random intercepts and fixed effects to analyze household wealth. The random intercept captures household-level variations in wealth that cannot be explained by observed variables, allowing each household to begin from a different baseline wealth level. In contrast, fixed effects represent individual characteristics, such as demographics and health conditions, assuming a uniform impact across all households. Recognizing that divorce can significantly affect household wealth and may correlate with health shocks, the model includes two indicator variables (d_{ij}^{f}, d_{ij}^{m}) to denote household marital status. Specifically, for married or partnered households, $d_{ij}^{f} = d_{ij}^{m} = 1$; for single female households, $d_{ij}^{f} = 1$, $d_{ij}^{m} = 0$; for single male households, $d_{ij}^{f} = 0$, $d_{ij}^{m} = 1$. Consequently, the statistical model to describe the wealth of household i in wave j is given by

$$W_{ij} = \beta_i + \beta_1 d_{ij}^{f} + \beta_2 d_{ij}^{m} + d_{ij}^{f}\boldsymbol{x_{ij}^{f}}\boldsymbol{\beta^{f}} + d_{ij}^{m}\boldsymbol{x_{ij}^{m}}\boldsymbol{\beta^{m}} + \boldsymbol{x_{ij}^{h}}\boldsymbol{\beta^{h}} + \varepsilon_{ij}$$

where W_{ij} is the household wealth, β_i is the random intercept for i-th household, and ε_{ij} is the residual term. $\boldsymbol{x_{ij}^{f}}$ and $\boldsymbol{x_{ij}^{m}}$ represent vectors of variables for female and male household members, respectively, while $\boldsymbol{x_{ij}^{h}}$ denotes a vector of household-level variables. The vectors account for a range of factors, including chronic diseases, demographics, work status, health insurance coverage, out-of-pocket medical expenses, total wealth, income, marital status, and the number of children.

Results

Table 1 provides descriptive statistics from the 1996 survey, covering a sample of 5,387 households. The data reveals that males generally show higher rates of chronic diseases compared to their wives. On average, 17.8% of males and 16.1% of females reported health limitations affecting their ability to work. Males also had higher incidences of diabetes, cancer, heart conditions, and slightly higher stroke rates. Interestingly, females had higher average out-of-pocket medical expenses, potentially due to the fact that 93.6% of males had health insurance coverage, compared to 91.3% of females. The statistics also show that males tended to be older than females and were more frequently engaged in full-time employment.

In Table 2, the results of the Hierarchical Linear Modeling of the total household wealth of all households indicated a strong association between chronic diseases of female members and household wealth reduction. When females had diabetes, cancer, or stroke, there was a significant decrease in household wealth. Chronic diseases of males, except for lung disease, were insignificantly correlated with household wealth. However, it is worth noting that when health conditions restricted work capacity, its effect on household wealth was more prominent for males than females.

Conclusions

The study reveals significant financial impacts of chronic health conditions on household wealth among pre-retirement couples. The findings show that, despite the higher prevalence of chronic diseases among husbands, wives' chronic diseases generally result in more significant declines of household wealth. These results suggest directions for future research, including the caregiver role of wives and the importance of employment security for both spouses. Additionally, the study highlights the need for a comprehensive review of health insurance policies, as existing coverage may not adequately protect households from financial consequences. Tailored healthcare programs focusing on preventive measures and gender-specific conditions are essential for accessibility and affordability. Policymakers should explore alternative healthcare financing options, such as Health Savings Accounts with employer contributions, and promote community health cooperatives and public-private partnerships for chronic disease management to enhance access to affordable care and reduce financial burdens on households.

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Table 1 Characteristics of the sample in the base wave

Variables	Husband	Wife
Chronic diseases		
Diabetes	2.17	0.63
Cancer	1.57	0.85
Lung disease	0.57	0.57
Heart condition	2.88	1.60
Stroke	0.76	0.55
Health limits work	17.73	16.08
Age in base year (mean)	60.02	56.99
Race		
White	86.10	86.4
Black	5.81	5.82
Hispanic	5.56	5.72
Other races	2.53	2.06
Level of education		
Less than high school	19.93	16.65
High school grad	34.39	41.86
Some college	20.17	23.68
College and above	25.51	17.82
Work status		
Working full-time	74.14	58.30
Working part-time	5.8	22.56
Not working	2.34	11.77
Retired	17.72	7.38
Health insurance coverage	93.57	91.25
Out-of-pocket medical expenses (mean)	2,531	3,404
	Household-level	
Total wealth (mean)	368,376	
Income (mean)	126,735	
Marital Status		

Married	99.53
Partnered	0.47
Number of children (mean)	3.37

Note: The above information is based on the third-wave interview, the survey of 1996. The sample size is 5,387. Numbers are in percentage. All means and percentages are weighted. Money amounts are converted to 2020 U.S. dollars.

Table 2 HLM results of total household wealth of all households

	Estimate	
Effect	Husband	Wife
Diabetes	-0.043	-0.090**
Cancer	0.045	-0.109**
Lung disease	-0.149**	-0.099
Heart condition	-0.044	0.058
Stroke	0.011	-0.167*
Health limits work	-0.113***	-0.082***
Age in the base year	0.017***	0.026***
Race (reference = white)		
Black	-0.659***	-0.572***
Hispanic	-0.579***	-0.429***
Other races	-0.237*	-0.368***
Level of education (reference = less than high school)		
High school grad	0.439***	0.419***
Some college	0.636***	0.639***
College and above	0.957***	1.021***
Health insurance coverage	0.022	0.063**
Out-of-pocket medical expenses	0.013***	0.006*
	Household-level	
Previous total wealth	0.058***	
Income (mean)	0.101***	
Number of children	-0.052***	
d1	-0.541***	
d2	-0.905***	

Note: Regressions include controls for the wave of interviews. The sample size is 14,897. *p < .05, **p < .01, ***p < .001