Economic Implications of Dementia Within A Family

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Background and objectives: Dementia imposes significant financial burden on the patients, families, and the health care system. Prior work has examined health care spendings, adverse financial events (e.g., missed credit card payments), and family caregiving burden associated with dementia.[1-4] However, less is known about the trajectory of household income leading up to and after the onset of cognitive impairment in a household member. In this study, we examine how total household income, spousal earnings, and spousal employment changes with the onset of cognitive impairment.

Data and study participants: We used the 1998-2020 Health and Retirement Study (i.e., 12 biannual survey waves) to examine change in total household income, spousal earnings, and spousal employment leading up to and following incident cognitive impairment. The analysis included 3,330 respondents who developed dementia and their 1,322 spouses.

Main outcomes and measures: Dementia was determined through tests adapted from the Telephone Interview for Cognitive Status, or proxy assessment of respondent memory or cognition.[5,6] The primary exposure was wave relative to incident dementia (i.e., the first wave identified with dementia, or wave 0). We required at least one wave before and one wave after incident dementia; we included up to 6 waves before and/or after, where available, for a maximum range of wave -6 to wave 6. Outcomes of interest included total household income (i.e., sum of respondent and spouse earnings, pension and annuity income, government social insurance payments, household capital and other income) and, for married respondents, spousal earnings and whether spouse had worked for pay during the prior year.

Statistical analysis: An event study design was used to assess financial changes within a family following dementia.[7] For each of waves -6 to 6, we derived coefficients for time relative to the incident dementia wave 0 (reference: the wave prior to incident dementia [wave -1]) on the

outcomes of total household income and spousal earnings (linear regression) and spousal working for pay (linear probability regression). Models included binary indicators for calendar year to account for secular trends in outcomes.

Results: At the incident dementia wave (wave 0), the mean age for respondents with dementia (n=3,330) was 75 years and 63% were female. For the subset with spouses, the spouses' (n=1,332) mean age was 71 years and 43% were female. The mean annual total household income for respondents with dementia was $35,000; with the subset with spouses, mean spousal earnings were $8,000, and 28% of spouses worked for pay. Total household income decreased each wave before incident dementia (from $20,555 higher in the 6^{th} wave to $4,263 higher in the second wave pre-dementia compared to the wave pre-dementia), and continued to drop after incident dementia (from $5,978 lower in the second wave to $12,000 lower in the 6^{th} wave post-dementia compared to the wave pre-dementia, $p<.001$ for all). Spousal earnings were stable across waves before incident dementia but then decreased significantly over time after incident dementia (from $2,002 lower in the first wave to $7,330 lower in the 6^{th} wave post-dementia compared to the wave pre-dementia, $p<.001$ for both). Probability of the spouse working for pay was slightly higher before incident dementia (about 5% higher in the 5^{th} and 6^{th} wave pre-dementia compared to the wave pre-dementia, $p<.05$ for both), but decreased significantly over time after incident dementia (from 7% lower in the first wave to 15% lower in the 6^{th} wave post-dementia compared to the wave pre-dementia, $p<.01$ for all).

Discussion: Dementia has substantial economic impact on the family financial status, including total household income and spousal earnings and employment. Dementia may facilitate the depletion of family financial resources by reducing the household income.

Next steps: To identify the causal impact of dementia on the household income, we will identify a comparison group using coarsened exact matching based on age, sex, race/ethnicity, marital status, and survey wave and compare the financial changes within a family before and after incident dementia for respondents with dementia and their spouses relative to spousal dyads without dementia. In addition, we will perform the analysis by race/ethnicity to examine the variation in economic consequences of dementia within a family across race/ethnicity groups.

Reference

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