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Incremental Health Care Expenditures of the Spouses of Older Adults With Alzheimer's Diseases and Related Dementias (ADRD)

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ABSTRACT

Objective: Previous research has found that having a spouse with Alzheimer's disease and related dementias (ADRD) is associated with higher health care expenditures, however it is unclear if this difference remains after accounting for the demographics and health status of the non-ADRD spouse. This paper aims to estimate the adjusted incremental health care expenditures of having a spouse with ADRD. Design: Cross-sectional study of publicly available survey data (2003–2017 Medical Expenditure Panel Survey). Setting: Representative sample of U.S. households. Participants: Community-dwelling and married older adults (n = 28,356). Measurement: Two-part models and recycled prediction techniques to estimate the incremental effects of having a spouse with ADRD on annual health care expenditures, while adjusting for demographics, socioeconomic characteristics, and health conditions. Results: Spouses of older adults with ADRD were older, had worse perceived mental health, and had greater difficulties with activities of daily living, compared to older adults with cognitively normal spouses. Spouses of ADRD patients had significantly higher unadjusted total health care expenditures, however their adjusted incremental expenditure was not significantly greater. After controlling for demographics and health status, ADRD spouses had significantly higher home health care expenditures, but significantly lower outpatient expenditures. Conclusion: Results suggested that the higher health care expenditures in older adults with ADRD spouses can be attributed to the higher rate of comorbidities.
rate of functional limitations, and mean age in this group. The increased use of home health and decreased use of outpatient in this population suggests the importance of tailoring preventative health care and social services to meet the needs of this group. (Am J Geriatr Psychiatry 2020; □□□□□)

INTRODUCTION

Alzheimer’s disease and related dementias (ADRD) affect over 5 million adults in the United States. The majority of individuals with ADRD live at home with spouses and their spouses often live in a state of chronic stress. Spouses of community-dwelling persons with ADRD often act as primary caregivers, providing a range of supports from medication administration to assisting with activities of daily living (ADL). They are also challenged by changes in the quality of the relationship with their partner and often changes in their own self-identity. Spouses of persons with ADRD, especially those who serve as the primary caregivers of their spouses, have been found to be at high risk for negative physical and mental health outcomes, including frailty, chronic medical illness, obesity, accelerated cognitive decline, depression, and premature mortality.

Older adults who have spouses with ADRD average 24% higher total annual medical expenditures than older adults with cognitively normal spouses. This increase in medical expenditures has been found to begin three months prior to their spouse receiving a formal diagnosis of ADRD. These excess expenditures also remain after accounting for differences in health conditions captured in claims data. It is not yet known if there are other quantifiable factors that contribute to the excess medical expenditures in this population, or if having a spouse with ADRD can significantly increase medical expenditures even after accounting for other known predictors of medical expenditures. Understanding factors that lead to excess health care expenditures is essential to improving the design of the health care delivery model, such as caregiver services and coordination of ADRD caregiving, that can reduce high health care expenditures and increase care efficiency in this population.

In addition, it is important to determine the types of excess expenditures, if any, that spouses of individuals with ADRD may have encountered. Previous studies have shown tremendous uses of home health care among ADRD patients, which results in ADRD patients having higher medical expenditures than persons without ADRD. Spouses of individuals with ADRD may also benefit from home health services as studies have shown that nursing home placement can be prolonged for ADRD patients when their spouses receive support. However, it is unknown whether spouses of persons with ADRD are utilizing in-home supports. Understanding the incremental home health expenditures associated with being spouses of ADRD patients can be informative to the design of Medicare and Medicaid financing and payment models.

The objective of this study is to assess incremental health care expenditures related to being a spouse of a person with ADRD using a large-scale, nationally-representative survey. Using an innovative family and spouse linkage, this is the first study to use survey data to examine the incremental expenditures associated with being a spouse of a person with ADRD and controlling for a comprehensive list of demographics, socioeconomic status, and medical conditions. We hypothesize that there would be significant variations of demographic and socioeconomic characteristics between spouses of ADRD and non-ADRD patients. It is an empirical question to test the “incremental” health care cost associated with being a spouse of ADRD patient. It is likely that higher health care expenditures of spouses of older adults with ADRD, compared to spouse of non-ADRD patients, could be attributed to differences in age and health conditions. In addition, we hypothesize that spouses of individuals with ADRD may have similar patterns of health care expenditures with adults of ADRD, given their caregiving experience. That is to say that spouses of individuals with ADRD would have similar acute care expenditures and greater home health and drug expenditures, compared to spouses of individuals without ADRD.
METHODS

Data

We used data from 2003 to 2017 Medical Expenditure Panel Survey (MEPS), a nationally representative survey from the Agency for Healthcare Research and Quality. The MEPS is a household-level survey that collects information on health care expenditures, utilization, health status, insurance coverage, perceived physical and mental health status, reported functional limitations, and socioeconomic characteristics for non-institutionalized civilians living in the United States. MEPS participants are recruited from participants in the previous year’s National Health Interview Survey, which is conducted by the Center for Disease Control’s National Center for Health Statistics. The National Health Interview Survey sampling plan is based on the census. Medical condition and health care expenditure information is collected from medical records and verified by participants’ medical providers. MEPS utilizes sampling weights to adjust for survey nonresponse and reflect the demographics of the U.S. Census Current Population Survey.

Study Participants

We limited our study sample to married individuals ages 65 and older who were living together in the community. We defined an individual with ADRD using the International Classification of Disease, 9th and 10th revision diagnosis code guidelines released by Centers for Medicare and Medicaid Services. We identified spouses of persons with ADRD using the spousal identifier within MEPS. All couples where both spouses had ADRD were excluded. For the ADRD couples, the spouse of a person with ADRD was included in the analysis. For non-ADRD couples, we selected one spouse from each couple to include in our analysis using a random number generator. Our study sample has 28,356 individuals in total, including 849 spouses of a person with ADRD and 27,507 with spouses of a person without ADRD.

Variables

Our outcome variables were annual medical expenditures, which includes expenditures related to inpatient stays, outpatient visits, emergency department (ED) visits, home health visits, prescription drugs, and annual total medical expenditures. The total medical expenditure is a combination of inpatient, outpatient, ED, dental, home health, vision, prescription drugs, and other medical supplies and equipment expenditures paid by third-party payers and out-of-pocket (OOP) spending paid by the spouse and/or family. All expenditures were adjusted for medical services inflation to 2019 U.S. dollars.

In order to calculate adjusted health care expenditures, we selected covariates that could potentially influence medical expenditures and categorized them into three groups based on the Andersen health care utilization model: predisposing, enabling and need. Predisposing factors included sex, age, race/ethnicity and U.S. Census region. Enabling factors included types of health insurance, educational attainment, and family income. Need factors included self-reported physical and mental health status, self-reported impairment in one or more ADL, hypertension, diabetes, heart diseases, and smoking status. We also controlled for survey year to adjust for changes in linear trends.

Analysis

We first compared the bivariate characteristics of the two groups with \( \chi^2 \) test and sample weights. Next, we then compared unadjusted likelihood of having nonzero expenditures and average expenditure amounts between spouses of persons with ADRD and spouses of persons without ADRD using Student’s Independent t test. To estimate effects of having spouses with ADRD on health care expenditures, we used the two-part models, which was commonly used in health economics research when large portions of the population have no expenditures. Probit regression was applied as the first-part of the model to estimate the likelihood of having non-zero expenditures. With the likelihood estimated, we then applied generalized linear model (GLM) with gamma distribution with natural log link as the second part to estimate the associations of having spouses with ADRD and expenditure amount. Lastly, we used the recycled prediction method to estimate the incremental expenditure of having a spouse with ADRD. For this technique, we coded each individual as if
his/her spouse had ADRD and calculated the predicted expenditures from the GLM results. Then, we coded each individual as if his/her spouse did not have group and calculated the predicted expenditure from the GLM results. The excess medical expenditure due to being the spouse of a person with ADRD was then calculated based on the difference between the ADRD spouse group and the non-ADRD group. We constructed two models: Model 1 includes status of being a spouse of a person with ADRD, Census regions and survey year. Full model includes status of being a spouse of a person with ADRD, Census region and survey, plus predisposing, enabling and need factors aforementioned.

Stata 15 MP was used to conduct the analysis. We took into account the complex survey design by using sampling weight, sampling strata and primary sampling unit when correcting standard errors. The study involved only secondary analysis of data; therefore, it was deemed exempt from further consideration by our Institutional Review Board.

RESULTS

Table 1 shows the comparison of baseline statistics between individuals with and without ADRD spouses. Around 3% of non-institutionalized married individuals were spouses of persons with ADRD. Over 69.50% of spouse of a person with ADRD were 75 years and older as compared to 34.50% of spouse of a person without ADRD. Compared to spouses of persons without ADRD, spouses of persons with ADRDs were more likely to report difficulties with ADLs (7.8% versus 2.8%). Results also showed that spouses of a person with ADRD had significantly lower family income, and more likely to live in the South, and more likely to only have Medicare coverage.

Table 2 compares the likelihood of having health care expenditures and amounts of expenditures, if any, between the two groups. Overall, spouses of persons with ADRD were more likely to have any medical expenditures, and expenditures of hospital stay, prescription drugs, and home health services compared to ones without ADRD spouses. The likelihoods of encountering any ED expenditure, outpatient expenditures, and OOP were not significant.

In concordance with our hypothesis, Table 2 also shows that spouses of persons with ADRD had significantly higher total health care expenditures ($13,234.83 versus $10,533.89), prescription drug ($2,864.3 versus $2,637.14), home health ($9,811.99 versus $7,142.95), and OOP ($1,857.73 versus $1,410.47), compared to spouses of persons without ADRD. On the other hand, ADRD spouses had significantly lower expenditures of outpatient visits ($2,084.21 versus $2,534.46). Expenditures of ED and hospital stays were not significant.

Table 3 displays estimates of total medical expenditures using adjusted and unadjusted two-part models. Model 1 shows that being the spouse of a person with ADRD was significantly associated with likelihood of having any health care expenditures (part 1) and positively associated with the amount of health care expenditures if any (part 2). Model 2 controlled for predisposing, enabling, and need factors in addition to census region and survey year. Results showed that being a spouse with ADRD was positively associated with the likelihood of having any health care expenditures (part 1), but there was no significant association with the amount of total health care expenditures for those who had any expenditures (part 2). We also found that racial and ethnic minorities had lower total health care expenditures when comparing to the non-Hispanic whites, which is similar to our hypothesis. Black and Hispanic individuals had lower prescription drug cost and OOP expenditures than non-Hispanic whites (Results not shown). Lastly, we found individuals with Medicare and private insurance coverage had significantly higher likelihood of having any total expenditure than individuals who are covered by both Medicare and Medicaid, and also had higher likelihood than individuals with only Medicare coverage, which is also similar to our hypothesis. Specifically, individuals with Medicare and private insurance had higher outpatient expenditures, prescription drug expenditures and OOP expenditures (results not shown).

Table 4 shows the adjusted incremental average per-person per year health expenditures of different types of health care services using recycled prediction techniques. The adjusted annual per-person average total health care expenditure for was $11,716.19 (SE = $732.31) for spouses of persons with ADRD and $10,713.41 (SE = $165.27) for spouses of persons
without ADRD, although the difference was not significant (incremental difference = $1,002.78, SE = $738.15). Being a spouse of a person with ADRD continued to have significantly higher adjusted annual home health care expenditures ($555.53, SE = $162.40). In contrary to our original hypothesis, we found lower office-based outpatient expenditures ($419.22, SE = $133.24) among spouses of ADRD patients. There were no statistically significant differences between the two groups in total health care, inpatient, ED, or prescription expenditures. These were within our hypothesis.
DISCUSSION

Our study examined differences of health care expenditures among spouses of person with and without ADRD. Similar to previous research, our results showed that spouses of ADRD patients had significantly higher total health care expenditures compared to spouses of a person without ADRD. Unlike previous studies, our study controlled for demographic and socioeconomic characteristics and health status. Our study found the differences in total health care expenditures were no longer significant after controlling for predisposing, enabling, and need characteristics of the spouse of ADRD patient. This finding was within the expectation of our proposed hypothesis. This suggests that certain demographic characteristics played mediation effects between expenditures and having spouses with ADRD. Spouses of ADRD patients were more likely to be women and older when compared to ones without ADRD spouses, which was also found in previous studies. We found these factors to both be positively associated with the total medical expenditures amounts.

Additionally, our study found both being racial/ethnic minorities and lacking private insurance coverage in addition to Medicare coverage were negatively associated with total medical expenditure amounts, which was also within the scope of our hypothesis. Previous studies have found that racial/ethnic minorities were less likely to utilize health care services including outpatient services, mental health services, prescription drugs and statin application, hence incurring less total health care expenditures. Elderly individuals who can afford to purchase private insurance may have higher income, hence they are more likely to use additional health care services and incur higher expenditures. Additional research is needed to determine which categories of spending are contributing to these differences.

We also found significant variations in different types of health care expenditures. In particular, we found that being a spouse of a person with ADRD was associated with increased home health care

### TABLE 2. Unadjusted Average Per Person Annual Health Care Expenditure Among Older Adults (≥65 years), 2003–2017

| Percentage of Individuals That Had Nonzero Expenditures | Spouse Not Have ADRD | Spouse Had ADRD | \( \chi^2 \) Value | Df | p Value |
|--------------------------------------------------------|----------------------|-----------------|----------------|----|---------|
| Total medical expenditure                               | 27,507               | 96.79%          | 849            | 98.37% | 113.26  | 596 | 0.03   |
| Total ED expenditure                                    | 27,507               | 12.95%          | 849            | 17.76% | 283.61  | 596 | 0.01   |
| Total outpatient expenditure                            | 27,507               | 91.84%          | 849            | 93.62% | 59.86   | 596 | 0.24   |
| Total hospital stay expenditure                         | 27,507               | 14.45%          | 849            | 18.51% | 184.82  | 596 | 0.01   |
| Total RX expenditure                                    | 27,507               | 91.05%          | 849            | 94.06% | 156.50  | 596 | 0.04   |
| Total homehealth expenditure                            | 27,507               | 6.18%           | 849            | 18.46% | 5,445.05| 596 | <0.001 |
| Total out-of-pocket expenditure                         | 27,507               | 94.46%          | 849            | 96.07% | 70.28   | 596 | 0.11   |

| Among Individuals With Nonzero Expenditures            | Spouse Not Have ADRD | Spouse Had ADRD | t Test Value | Df | p Value |
|--------------------------------------------------------|----------------------|-----------------|--------------|----|---------|
| Total medical expenditure if any                       | 26,332               | 10,553.89       | 120.75       | 829| 13,234.83| 633.6 | 21,759 | 0.001 |
| Total ED expenditure if any                            | 3,365                | 318.54          | 9.83         | 142| 304.45   | 633.6 | 3,505  | 0.77  |
| Total outpatient expenditure if any                    | 24,774               | 2,534.46        | 35.93        | 785| 2,084.21 | 633.6 | 25,557 | 0.03  |
| Total hospital stay expenditure if any                 | 3,783                | 2,587.18        | 59.3         | 156| 3,028.42 | 633.6 | 3,937  | 0.16  |
| Total RX expenditure if any                            | 24,664               | 2,637.14        | 32.21        | 792| 2,864.3  | 633.6 | 25,454 | 0.01  |
| Total homehealth expenditure if any                    | 1,757                | 7,142.95        | 259.95       | 192| 9,811.99 | 633.6 | 1,947  | 0.001 |
| Total out-of-pocket expenditure if any                 | 25,561               | 1,410.47        | 14.67        | 807| 1,857.73 | 633.6 | 2,6566 | 0.001 |

Notes: Analyses of Medicare Expenditure Panel Survey 2003–2017. Estimates are nationally representative and are calculated adjusting for person weights, stratum and primary sampling unit. Our sample represents 617,801.36 individuals with ADRD spouses and 20,983,645 individuals without ADRD spouses that is community-dwelling elderly individuals aged 65 years and older. P-values are results from t test comparison of between individuals with ADRD spouses and individuals without ADRD spouses. ADRD: Alzheimer’s disease and related dementias; Df: degrees of freedom; ED: emergency department; SE: standard errors.
### TABLE 3. Results of Two-Part Models of Total Medical Expenditures From Two Models

#### Model 1

| Variables                          | First Part: Probit Regression | Second Part: Generalized Linear Model With Gamma Distribution |
|------------------------------------|-------------------------------|---------------------------------------------------------------|
| Spouse and ADRD condition          |                               |                                                               |
| Spouse without ADRD               | REF                           | REF                                                           |
| Spouse w ADRD                     | 0.29 0.13 2.23 (0.03)         | 0.16 0.07 2.20 (0.03)                                         |
| High blood pressure               |                               |                                                               |
| No                                | REF                           | REF                                                           |
| Yes                               | 0.74 0.05 15.86 (<0.001)      | 0.10 0.03 3.74 (<0.001)                                       |
| BMI > 30                          |                               |                                                               |
| No                                | REF                           | REF                                                           |
| Yes                               | 0.04 0.06 0.70 (0.48)         | 0.03 0.03 0.87 (0.38)                                         |
| Diabetes                          |                               |                                                               |
| No                                | REF                           | REF                                                           |
| Yes                               | 0.60 0.07 8.01 (<0.001)       | 0.29 0.05 8.86 (<0.001)                                       |
| Ever smoked                       |                               |                                                               |
| No                                | REF                           | REF                                                           |
| Yes                               | −0.24 0.06 −3.81 (<0.001)     | −0.04 0.06 −0.73 (0.47)                                       |
| Difficulties in any ADL           |                               |                                                               |
| No                                | REF                           | REF                                                           |
| Yes                               | 0.16 0.20 0.78 (0.44)         | 0.94 0.05 17.39 (<0.001)                                      |
| Age in years                      |                               |                                                               |
| 65−74                             | REF                           | REF                                                           |
| 75+                               | 0.17 0.05 3.15 (0.01)         | 0.15 0.05 5.72 (<0.001)                                       |
| Sex                               |                               |                                                               |
| Male                              | REF                           | REF                                                           |
| Female                            | 0.24 0.04 5.95 (<0.001)       | −0.10 0.03 −3.63 (<0.001)                                     |
| Race/Ethnicity                    |                               |                                                               |
| NH White                          | REF                           | REF                                                           |
| NH Black                          | −0.41 0.08 −4.82 (<0.001)     | −0.28 0.08 −3.30 (<0.001)                                     |
| Hispanic                         | −0.40 0.06 −6.00 (<0.001)     | −0.34 0.05 −6.40 (<0.001)                                     |
| Other races                       | −0.08 0.09 −0.89 (0.37)       | −0.04 0.05 −0.75 (0.45)                                       |
| Education attainment              |                               |                                                               |
| Less than 4-year college          | REF                           | REF                                                           |
| 4-year college or more            | 0.22 0.09 2.35 (0.02)         | 0.07 0.05 1.31 (0.19)                                         |
| Health insurance coverage         |                               |                                                               |
| Medicare & Private insurance      | REF                           | REF                                                           |
| Medicare & medicaid (dual eligibility) | −0.31 0.05 −6.71 (<0.001) | −0.16 0.03 −5.67 (<0.001)                                     |
| Medicare                          | −1.37 0.16 −8.71 (<0.001)     | −0.55 0.50 −1.08 (0.28)                                       |
| Person’s income                   |                               |                                                               |
| <10K                              | REF                           | REF                                                           |
| 10K−20K                           | 0.12 0.09 1.34 (0.18)         | 0.13 0.09 1.54 (0.12)                                         |
| 20K−30K                           | 0.14 0.07 2.07 (0.04)         | 0.07 0.05 1.39 (0.16)                                         |
| 30K−50K                           | 0.25 0.07 3.74 (<0.001)       | 0.02 0.05 0.40 (0.69)                                         |
| >50k                              | 0.50 0.07 7.01 (<0.001)       | 0.08 0.05 1.69 (0.09)                                         |

(continued)
This finding validated our hypothesis. Home health care providers, who are already coming to the home to care for the person with ADRD, may be uniquely suited to provide support and coordinate care for ADRD spouses. As seen by this study, providers who are making home care referrals for their ADRD patients may already be recognizing that the spouses of ADRD patients may also benefit from home care and are thus making referrals for the dyad. Alternatively, home care nurses or case managers who are assessing the home care needs of patients with ADRD may be identifying the home care needs of the spouse and reaching out to primary providers for referrals. Future studies are needed to determine the potential impacts of home health services for spouses of ADRD patients.

After controlling socioeconomic status and health conditions, we found spouses of persons with ADRD had significantly less outpatient care expenditures than spouses of individuals without ADRD, which is in contrary of our original hypothesis. Previous studies found ADRD patients had higher expenditure of outpatient care. As persons with ADRD require extensive assistance and supervision, it can be difficult for their spouses to leave home, even to attend their own medical appointments. This lower use of outpatient care does not seem to have negative implications as we see no difference in inpatient and ED utilization, suggesting that they are receiving the essential. Additionally, this finding may suggest that home health can serve as an acceptable substitute for outpatient services.

**Limitations**

Several potential limitations of our study should be identified. First, when identifying patients with ADRD, we did not control for duration and severity of ADRD, as this information is unavailable in MEPS. Second, we did not control for an exhaustive list of comorbid conditions. Third, we did not know if the spouse was the primary caretaker of the person with ADRD. Fourth, with MEPS’s limited sample size and limited panel design, we will not be able to examine

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**TABLE 3. (continued)**

| Variables | First part: Probit Regression | Second part: Generalized Linear model with Gamma distribution |
|-----------|------------------------------|---------------------------------------------------------------|
|           | Dependent variable: binary variable=1 if total expenditure>0 | Dependent variable: natural logarithm of total health care expenditure |
|           | Coef (Probit) | SE | t (p value) | Coef (Probit) | SE | t (p value) |
| Self-reported physical health status | | | | | | |
| Fair/poor REF | | | | | | |
| Very good/good | -0.29 | 0.06 | -5.17 (<0.001) | -0.64 | 0.03 | -21.34 (<0.001) |
| Self-reported mental health status | | | | | | |
| Fair/poor REF | | | | | | |
| Very good/good | 0.01 | 0.05 | 0.27 (0.78) | 0.04 | 0.03 | 1.33 (0.18) |
| Census region | | | | | | |
| Midwest REF | | | | | | |
| South | -0.03 | 0.07 | -0.48 (0.64) | -0.06 | 0.04 | -1.42 (0.16) |
| West | -0.03 | 0.07 | -0.40 (0.69) | -0.06 | 0.05 | -1.19 (0.25) |

**Note:** Analyses of Medicare Expenditure Panel Survey 2003–2017. Estimates are nationally representative and are calculated adjusting for person weights, stratum and primary sampling unit. Our sample represents 617,801.36 individuals with ADRD spouses and 20,983.645 individuals without ADRD spouses that is community-dwelling elderly individuals aged 65 years and older. First part of the model is probit regression, and second part of the model is generalized linear model with gamma distribution and log link function. p values of first part model were calculated from the probit regression coefficients and standard errors, and p-values of second part were calculated from generalized linear model with gamma distribution and log link function coefficients and standard errors. All results are available upon request.

*Model 1 controls spouses of ADRD patients, Census regions and survey year. Number of observations: 28,124. Degree of freedom: 596. F (18,579) = 1.76.*

*Model 2 controls spouses of ADRD patients, Census region and survey, plus predisposing, enabling and need factors discussed in Methods. Number of observations: 28,124. Degree of freedom: 596. F(36,560) = 22.88.*

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the initiation of home care and its effect upon subsequent outpatient expenses. Finally, our study population only included the non-institutionalized population. Hence, our study results could not be generalized to spouse of persons with ADRD who reside at long-term care facilities.

Policy Implications During and Post the COVID-19 Era

These findings are increasingly important in light of the current COVID-19 pandemic. Many of the health and social services that persons with ADRD depend on, like day programs and food delivery programs, have been limited by stay-in-place orders. Additionally, persons with ADRD have been found to be at high risk for developing severe COVID illness, thus spouses may feel obligated to halt any in-home supports and visits from friends and family members. Interruption in regular routines, like walks in the park and trips to coffee shops, can increase cognitive impairment and feelings of loneliness for both the person with ADRD and their spouse. Without external supports, caregiver burden is likely to intensify, which may translate to an increase in negative physical and mental health effects. Additionally, since the COVID-19 pandemic, we have seen major declines in the use of the home health care services across the nation. Many home health care providers are in jeopardy of going out of business. CMS has yet to approve reimbursement for home health services delivered through telehealth. It is clear that both individuals with ADRD and their spouses are dependent upon home health services to address their health and social needs. Urgent research is needed to understand how changes in home health service utilization influence outcomes and other health services utilization for individuals with ADRD and their spouses, including skilled nursing facility placement. As the COVID-19 pandemic is expected to continue for the next few years, there is an urgent need to identify alternative supports that can be used to promote the mental and physical health of community-dwelling persons with ADRD and their spouses. Home health services delivered through telehealth may be able to mitigate the impact of the loss of in-person services as well as keep home health care providers in business so they can return to providing this critical service as the conclusion of the pandemic. It is possible that the use of outpatient care may actually increase for ADRD spouses during the COVID-19 pandemic as telehealth may actual increase access to outpatient professional services.

With the number of individuals with ADRD on the rise and cure for ADRD remaining to be out of sight, the physical and mental health of informal caregivers must become a crucial component of ADRD treatment. The National Institute of Health plans to spend over 60 million dollars in 2020 and 2021 on research...
researching how to better improve caregiver’s health caregiver experience, along with creating better caregiving strategies.21,22 As the threat of COVID-19 continues to loom, finding the right balance of protecting older adults from infection, while ensuring they receive necessary care can be particularly challenging. Policymakers should consider achieving both goals while keeping the elderly ADRD households safe by mandating insurance programs to provide sufficient and affordable home health coverage for ADRD patients and their spouses who frequently act as the formal caregivers. Additionally, policymakers should consider reimbursement for home health services delivered through telehealth to promote continuity of care and minimize service gaps.43

CONCLUSION

As a substantial public health burden in the United States, ADRD has a negative effect on not only the patient but also the spouse. Our analysis provides estimates of the annual direct medical expenditures associated with having ADRD spouses among the non-institutionalized population. Older adults with spouses that suffers from ADRD have significantly higher total health care expenditures, however this increase in costs is mostly attributed to the higher rate of medical conditions and age. After controlling for differences between groups, home health spending remains considerably higher among those with spouses that suffers from ADRD. Future studies should continue to analyze the economic burden of ADRD on spouses and how care coordination programs could alleviate some of the caregiver burdens.

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AUTHORS’ CONTRIBUTION

All authors have participated sufficiently in the work to take public responsibility for all or part of the content, and have made substantive intellectual contributions to the submitted work in the form of: 1) conception and design, and/or acquisition of data, and/or analysis of data; and 2) drafting the article, and/or revising it critically for important intellectual content. All authors approve for this version to be published.

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