Utilization of Specialized Geriatric Care Among Medicare Beneficiaries with Alzheimer's Disease and Related Dementia: An Observational Analysis

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INTRODUCTION

Over five million people aged 65 and older live with Alzheimer's disease and related dementias (ADRD); this figure is expected to grow to 13.8 million by mid-century.¹ The Federal government has identified increasing access to geriatricians, neurologists, and psychiatrists^{2,3} as an important strategy to improve care for adults with ADRD.³ Yet there is already a shortage of such providers,⁴ raising concerns about access to specialized care for the growing ADRD population³—especially among low-socioeconomic status populations that already face disparities in health outcomes as a result of barriers to specialist care.⁵

Our objective was to estimate differences in visits to specialized providers of geriatric care by past ADRD diagnosis and among those with ADRD to compare the characteristics of individual with and without visits to specialized providers. We examined these questions using data from a predominantly low-income population that may face greater barriers to specialized geriatric care.

METHODS

The Southern Community Cohort Study (SCCS) enrolled approximately 85,000 individuals aged 40–79 in 12 South-eastern states between 2002 and 2009. The cohort, recruited primarily from community health centers, is followed longitudinally using surveys, traditional Medicare claims, and Minimum Data Set (MDS) nursing home assessments. Our study population consisted of 10,380 participants aged 65 and older by 2016 and continuously enrolled in Medicare Parts A and B. We identified 1295 participants with at least one ICD9/10 code indicating ADRD from 1999 to 2016.

Use of specialized geriatric care in 2016 was defined as having at least one office-based visit with a neurologist,

psychiatrist, psychologist, or internal medicine physician or nurse practitioner with a specialization in geriatrics, neurology, or psychiatry. Office-based visits were identified in the Medicare Carrier file (point of service codes 11 or 50). We linked provider type from the National Plan and Provider Enumeration System to visit data using the performing National Provider Identifier.⁶

We estimated the odds of any specialized geriatric care utilization in 2016 between those with and without ADRD as well as the odds of any specialized geriatric care utilization among participants with ADRD using logistic regression, controlling for age, sex, race, marital status, income, education, and rural residence. Race was included because racism may create access to care barriers. Other covariates included any history of a long-term nursing home stay since 2001 based on nursing home assessments from the CMS Minimum Dataset, and the Elixhauser Comorbidity Index based on Medicare claims files. Years since baseline survey were included to control for differences in follow-up time. The study was approved by the Vanderbilt IRB. Analyses were performed using STATA, version 12.

RESULTS

Those with ADRD were more likely to have had a visit with a geriatric care specialist in the last year than participants without ADRD (19.4% vs. 10.0%); however, there were many differences in patient characteristics (Table 1). Controlling for these differences, the odds of having a visit with a specialized geriatric provider were 2.55 higher among those with ADRD as compared to those without (95% CI: 2.14–3.04, Table 2).

Among ADRD patients, the odds of having at least one specialized geriatric care visit in 2016 were higher for those with incomes in excess of \$24,999 relative to those with incomes below \$15,000 (OR: 1.58, 95% CI: 1.04–1.23). The odds of at least one visit were lower for those residing in non-metropolitan areas relative to those residing in metropolitan ones (OR: 0.54, 95% CI: 0.39–0.74). The odds of at least one visit were also lower among those with a history of any long-term nursing home use relative to those without (OR: 0.31, 95% CI: 0.20–0.48).

Table 1 Differences in Characteristics Among Fee-for-Service Medicare Beneficiaries by ADRD Status, 2016

	Non-ADRD N = 9085	ADRD N = 1295	P value
Visit with a geriatric specialist*	10.0%	19.4%	< 0.001
Age	72 (5)	76 (6)	< 0.001
Female	62.8%	66.6%	0.007
Comorbidities (standard deviation)	2 (1)	3 (1)	< 0.001
Years since baseline (standard deviation)	12 (2)	12 (2)	0.013
Marital status			< 0.001
Current married	47.7%	39.7%	
Previously married	40.8%	49.3%	
Never married	7.7%	7.0%	
Missing	3.8%	3.9%	
Household income			< 0.001
< \$15,000	37.7%	52.9%	
\$15–24,999	17.7%	18.3%	
\$25,000–49,999	19.3%	13.7%	
\$50,000+	21.3%	10.1%	
Missing	4.1%	5.0%	
Education			< 0.001
High school or less	49.2%	62.2%	
More than high school, less than college	24.7%	20.0%	
College or more	23.4%	14.2%	
Missing	2.7%	3.6%	
Race			0.490
White	45.5%	43.6%	
Black/African American	49.1%	50.4%	
Other	4.1%	4.3%	
Missing	1.3%	1.7%	
Resides in a non-metropolitan county	35.6%	37.1%	0.330
History of nursing home residence	1.2%	23.6%	< 0.001

*Geriatric specialists are defined as specialist providers which were defined as neurologists, psychiatrists, or internal medicine physician/nurse practitioner with a specialty in geriatrics.

2016 Traditional Medicare Claims Data linked to the Southern Community Cohort's Baseline Survey and the National Plan and Provider Enumeration System. The table presents basic descriptive statistics and P values come from chi-square tests for categorical variables and t tests for continuous variables

DISCUSSION

Although ADRD patients were more likely to have used specialized geriatric care, increasing access to appropriate care for patients with ADRD is an ongoing challenge of clinical and policy importance. Those who received care tended to have higher socioeconomic status and lived in urban environments. Limitations of our analysis include reliance on claims-based algorithms to detect ADRD and categorize visits as specialized. Our lack of finding of a relationship with race may be due to the cohort examined, which was drawn primarily from community health centers. Our results suggest that longstanding differences in access to specialty care by socioeconomic status⁵ also apply to patients with ADRD.

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Table 2 Logistic Regression Analysis of Specialized Geriatric Care Utilization, 2016

	ADRD vs. non-ADRD participants (N = 10,380)		At least one specialist visit vs. no specialist visits ADRD participants only (N = 1295)	
	OR	95% CI	OR	95% CI
ADRD	2.5	2.1–3.0	–	–
Age	0.98	0.97–1.00	0.99	0.97–1.01
Female	1.5	1.3–1.7	1.2	0.9–1.7
Comorbidities	1.2	1.2–1.3	1.1	1.0–1.2
Years since baseline	1.0	0.9–1.0	1.0	0.9–1.1
Marital status (married reference group)				
Not currently married	0.9	0.8–1.1	0.9	0.6–1.2
Missing	1.0	0.6–1.5	0.6	0.2–2.3
Household income (< \$15,000 reference group)				
\$15,000–24,999	0.9	0.8–1.1	1.0	0.7–1.6
> \$24,999	1.1	0.9–1.3	1.6	1.0–2.4
Missing	0.7	0.5–1.1	0.3	0.1–1.2
Education (< high school reference group)				
High school, less than college	1.2	1.0–1.4	0.9	0.6–1.3
College or more	1.5	1.3–1.8	1.4	0.9–2.1
Missing	2.0	1.0–4.0	7.2	1.2–43.4
Race (White reference group)				
Black/African American	0.8	0.7–0.9	1.1	0.8–1.4
Missing	0.5	0.2–1.2	1.1	0.0–0.9
Resides in a non-metropolitan county	0.7	0.6–0.8	0.5	0.4–0.7
History of nursing home residence	0.4	0.3–0.6	0.3	0.2–0.5
Constant	0.3	0.1–0.7	0.6	0.1–3.9

*Geriatric specialists are defined as specialist providers which were defined as neurologists, psychiatrists, or internal medicine physician/nurse practitioner with a specialty in geriatrics

2016 Traditional Medicare Claims Data linked to the Southern Community Cohort's Baseline Survey and the National Plan and Provider Enumeration System. The table presents estimated odds ratios and 95% confidence intervals from 2 logistic regressions

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Compliance with Ethical Standards:

Conflict of Interest: The authors declare that they do not have a conflict of interest.

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