

Letter to the Editor

Community-based serious illness care for patients with dementia



1. Introduction

Cognitive and psychiatric disorders are prevalent in the homebound population, with dementia and depression being especially common [1]. One intervention that could potentially improve the care of those with dementia is community-based serious illness care (CBSC). CBSC programs such as home-based primary care have been shown to reduce cost and improve care for homebound patients [2]. Patients enrolled in the Veteran Affairs' Home-Based Primary Care program cost the Veteran Affairs health care system 24% less on health expenditures, compared with the 6-month period before enrollment [3]. However, CBSC programs have not been evaluated for their effect on patient outcomes in those with dementia. Because dementia patients require expensive care and suffer from frequent acute illnesses near the end of life, CBSC may affect emergency department (ED) visits and number of hospitalizations in this population differently [4]. This study describes patients in a multidisciplinary CBSC program called the "Reaching out to Enhance the Health of Adults in their Communities and Homes" (REACH) program by dementia status. Because this population may have different needs compared with patients without dementia, we examined differences in patient characteristics between those with and without dementia, including the associations between dementia and outcomes post-REACH program initiation.

2. Methods

We conducted an extensive chart review for each patient enrolled in the REACH program. We collected demographic information, including serious illness diagnoses, basic activities of daily living [5], and the presence of a home health aide or physical therapy. In addition to the chart reviews, an automated data pull extracted all primary care, specialty care, hospitalizations, and emergency department utilization in 12 months before and after the initial REACH admission visit. We first ran descriptive statistics to characterize the

overall REACH sample and to compare patients with and without dementia. We derived an incidence rate ratio from a Poisson regression to determine whether the presence of dementia affected how REACH admission reduced ED visits and hospitalizations. The three predictors used in the Poisson regression were the effects of a time period (in our case, pre-REACH vs. post-REACH enrollment), the effect of dementia, and the interaction of dementia across the two time-periods. To determine whether dementia significantly affected mortality, we calculated an odds ratio using logistic regression, using mortality as the outcome and dementia as a predictor variable. In our analyses, we did not adjust for any additional variables. This is a preliminary study with a small sample size, so raising the complexity of our models heightens the risk of finding spurious statistical associations [6].

3. Results

In this sample, there were 51 patients with dementia and 108 patients without. Dementia patients were older, with a mean age of 80.6 years (standard deviation \pm 9.2) compared with an average age of 65.7 years (standard deviation \pm 17.8) in the nondementia group (Table 1). Compared with the nondementia group, the dementia group had more African-American people and fewer white people, more chronic conditions (2.8 ± 1.6 vs. 1.9 ± 1.5) and fewer independent activities of daily living (3.3 ± 2.4 vs. 4.1 ± 2.1). Dementia patients were slightly more likely to be married. Patients with and without dementia had comparable rates of mortality, ED visits, and hospitalizations throughout the study period. REACH does not appear to differentially influence ED visits (incidence rate ratio 0.82 [95% CI 0.60–1.14]), hospitalizations (1.02 [95% CI 0.57–1.82]), or mortality (OR 1.42 [95% CI 0.68–2.98]) based on whether a patient has dementia.

4. Discussion

The dementia patients in REACH differed from nondementia patients on a variety of characteristics. Dementia patients were more likely to be older, female, and African-American. These patients also had a higher number of chronic conditions and were more likely to receive assistance from a home health aide. However, none of these differences appeared to change the REACH program's effect

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Table 1
Patient characteristics, n = 159

Patient characteristics	Dementia patients, N = 51	All other patients, N = 108	Total, N = 159
Age, mean (SD)	80.6 (9.2)	65.7 (17.8)	70.4 (17.0)
Female	34 (67%)	55 (51%)	89 (56%)
Race			
White	26 (51%)	74 (69%)	100 (63%)
African-American	23 (45%)	29 (27%)	52 (33%)
Other	3 (6%)	4 (4%)	6 (4%)
Patient is married	26 (51%)	41 (38%)	67 (42%)
Number chronic health conditions, mean (SD)	2.8 (1.6)	1.9 (1.5)	2.2 (1.5)
Independent ADLs, mean (SD)	3.3 (2.4)	4.1 (2.1)	3.9 (2.2)
Home health aide present before REACH	25 (49%)	32 (30%)	57 (36%)
Physical therapy/occupational therapy/nursing/social work present before REACH	17 (33%)	43 (40%)	60 (38%)
Mortality within study period	17 (33%)	28 (26%)	45 (29%)
Twelve months before REACH enrollment, mean (SD)			
Visits to ED	2.6 (2.6)	2.8 (4.9)	2.8 (4.3)
Hospitalizations	1.1 (1.7)	1.5 (2.2)	1.4 (2.1)
Twelve months after REACH enrollment, mean (SD)			
Visits to ED	2.2 (4.1)	2.1 (3.6)	2.1 (3.7)
Hospitalizations	0.6 (1.1)	0.9 (1.6)	0.8 (1.5)
Pre-REACH and post-REACH change in, mean (SD)			
Visits to ED	0.4 (4.4)	0.7 (4.6)	0.6 (4.5)
Hospitalizations	0.5 (1.9)	0.6 (2.0)	0.6 (1.9)

Abbreviations: ADLs, activities of daily living; ED, emergency department; SD, standard deviation; REACH, Reaching out to Enhance the Health of Adults in their Communities and Homes.

on patients with dementia. Our results agree with what is known about dementia in the larger population. It is a disease of aging [7], impairs activities of daily living [8], requires aides for assistance [9], and is more prevalent among African-Americans than white Americans [10]. Importantly, in the REACH sample, having a diagnosis of dementia did not appear to affect mortality, nor did it augment or decrease the effect of REACH on hospitalizations or ED visits. These results are limited to a single home-based care program in central North Carolina, with patients enrolled in a discrete time period, and measures hospitalization and emergency department utilization over only a 12-month before and after program enrollment time period. Subsequent work could also investigate whether particular components of CBSC programs are especially effective for patients with dementia. Many opportunities exist for evaluating and improving

home-based care, a promising intervention for improving the health of homebound patients with dementia.

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