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Differences in Depression Severity in Family Caregivers of Hospitalized Individuals with Dementia and Family Caregivers of Outpatients with Dementia

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Abstract

Objectives—To determine if family caregivers of hospitalized individuals with dementia exhibit greater depression severity than caregivers of outpatients.

Methods—Caregivers were recruited during care-recipient treatment. Measures assessed depression, stress, burden and grief.

Results—Forty-one caregivers of a hospitalized patient and 44 caregivers of an outpatient (total N = 85) were recruited. The groups did not differ except caregivers of hospitalized patients were younger and less likely to reside with the care-recipient. Regarding depression, 63.4% of caregivers of a hospitalized patient and 43.2% of caregivers of an outpatient scored within the clinical depressive symptoms range. Independent sample t-tests showed that caregivers of a hospitalized patient had greater severity of depression, burden, and grief. Caregiving for a hospitalized person remained a significant predictor of greater depression severity in regression models.

Conclusions—Family caregiving for a person hospitalized for psychiatric treatment of dementia is a risk factor for depression.

Keywords

Caregiver; Depression; Dementia; Hospital

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Objective

Family caregivers of ill elderly are vulnerable to physical and mental health problems including depression.¹ There are few published reports regarding family caregiving in the context of severe behavioral problems that result in hospitalization for dementia. Such studies are important because increased dementia symptom severity may lead to greater caregiver burden² and depression. Similarly, after hospitalization, caregivers of individuals with cognitive impairment due to dementia or delirium may require more-intensive aftercare assistance; yet the types and intensity of service needs are still not known.³ In comparison, there has been relatively more study of family caregiving during and after hospitalization for illnesses such as acute stroke,⁴ cancer, and heart failure.

It has been reported that family caregivers of individuals with dementia are curious for information about hospital treatment, particularly during end-of-life care. Beyond this, regarding psychiatric symptoms in caregivers of hospitalized individuals with dementia, we were able to identify only one publication which psychometrically assessed caregivers during hospital treatment for a care-recipient with dementia. Liptzin et al⁵ in 1998 compared the family burden reports of 11 caregivers of individuals undergoing hospital treatment for dementia to the burden reported by 38 caregivers of elders hospitalized for depression. In addition to assessing burden, Liptzin assessed caregivers' perceptions of behavioral problems; assessments were conducted prior to admission and at a two-month follow-up. Caregiver depression was not measured. Caregiver burden did not change over time for either group, although there was a reduction in burden for the subsample in which dementia patients were assessed by their caregiver as clinically improved at discharge.⁵

The objective of the current study was to evaluate the extent to which dementia family caregivers report depressive symptoms in the inpatient setting. In the absence of any previous reports, the current study of a small sample is exploratory; the study's hypothesis was that family caregivers of individuals hospitalized for treatment of dementia will report greater depression and other psychiatric symptoms compared with caregivers of non-hospitalized individuals with dementia.

Methods

This investigation was part of a larger project seeking to find methods to easily and routinely screen family caregivers for health-related risks.⁶ The study used a set of short validated measures to collect data regarding family caregivers' self-report of symptoms in several spheres in addition to depression. Candidate covariates including demographic variables, perceived stress, burden, and grief were selected based on their relevance in prior dementia caregiving research. Each of these constructs has been previously evaluated in dementia caregivers in the outpatient setting and the specific measures used in this study were selected so that the overall battery could remain short while still capturing diverse symptoms.

Recruitment and Procedures

Participants were recruited from an inpatient geriatric psychiatry unit associated with a free-standing psychiatric hospital and outpatient settings including a memory disorders program and community support groups for dementia caregivers. Inclusion criteria were age greater than 18, self-identification as a family caregiver, and ability to read English and complete psychometric questionnaires. In the instructions for this study, caregiving was defined as unpaid "thinking about, planning activities for, feeding, dressing, or providing other care" for someone with dementia. No data were collected regarding the care-recipient with dementia other than the caregiver's written report of the diagnosis of the care-recipient. In

the inpatient setting, a research assistant reviewed the admitting diagnoses for continuous admissions over an 8-month period and approached the primary family contact for every patient admitted with a diagnosis of a dementia; the completed measures were received from participants during care-recipient hospitalization or soon after hospital discharge. To participate in the outpatient setting, a caregiver responded to a posted sign or invitation from a clinician. Participants in both the inpatient and outpatient cohorts completed written informed consent prior to providing written responses to the questionnaires. All procedures were approved by the designated Institutional Review Board.

Measures

The Center for Epidemiological Studies – Depression Scale, 10-item version (CES-D), is a shortened form of the original 20-item CES-D. This rapid screen asks ten “Yes” or “No” questions regarding an individual’s symptoms over the past week. Higher scores indicate greater depressive symptoms. This scale has been effectively used with older adults and is reliable. Individual items are scored on a four-point Likert scale (0 – 3) and a total score of 10 or greater indicates depressive symptoms suggestive of a clinical syndrome.

The Perceived Stress Scale, 4-item version (PSS4), is a shortened form of the original 14-item self-report measure designed to assess an individual’s beliefs about stressful experiences during the past month. Each item is answered according to a five-point Likert scale (0 – 4). The PSS4 is recommended and has adequate reliability (Cronbach’s internal consistency $\alpha = 0.60$) in situations requiring a short assessment.⁷ The mean score (standard deviation) for a sample of married people ($n = 1427$) in the U.S. was 4.2 (SD = 2.8).⁷

The Rapid Screen for Caregiver Burden (RSCB)⁸ is a shortened version of the 25-item Screen for Caregiver Burden. The RSCB is a seven-item scale; each item is answered according to a five-point Likert scale. This scale has been effectively used with caregivers and has been found to have good internal consistency ($\alpha = 0.88$) and a mean (standard deviation) of 31.8 (7.6).⁸

The Inventory of Traumatic Grief, pre-loss version (ITG PL), is based upon Prigerson’s Inventory of Complicated Grief. The pre-loss version was developed to assess for the symptom complex associated with grief during terminal illness and has been shown to be reliable. Each question is answered according to a five-point Likert scale and a score > 25 suggests impaired social, general, mental and physical health functioning.

Analyses

Demographic information and the group means for measures of depression, stress, burden and grief were compared by independent samples t-tests and chi square analyses to determine group differences. Cohen’s d effect size estimates were calculated for clinical variables. Hierarchical multiple regression models were conducted to assess whether membership in the caregiving-to-an-inpatient group was a unique predictor of outcomes (e.g., depression severity) after controlling for other group differences in the first step of the model.

Results

Forty-one caregivers of a hospitalized patient and 44 caregivers of an outpatient (total $n = 85$) were recruited. The full sample was predominantly female (65%) and white (97%) with no differences between the inpatient and outpatient groups regarding gender, race, or resources as shown in Table 1. The two groups did show significant differences regarding caregiver age, caregiving relationship, and co-habitation status; specifically, caregivers of a hospitalized patient were significantly younger and less likely to be married to and reside

with the care- recipient. Regarding depression, 63.4% of caregivers of inpatients and 43.2% of caregivers of outpatients scored within the clinical depressive symptoms range (CESD > 9). Independent sample t-tests showed that caregivers of a hospitalized patient had greater severity of depression, burden, and grief, with Cohen's d effect size estimates ranging from 0.31 to 0.58, also shown in Table 1. In hierarchical regression models, after controlling for age, co-residence status, and spousal status in the first step, caregiving for a hospitalized patient emerged as a significant predictor of greater depression severity in the second step of the model ($F = 4.322$, $dfs = 1, 76$, $p = .041$, $R^2 = .101$, $R^2 = .051$). After controlling for the same background variables, however, caregiving in the hospital setting did not predict burden or grief.

Conclusions

To our knowledge, this is the first report of depressive symptoms in the family caregivers of individuals hospitalized for treatment of behavioral disturbance in dementia. Nearly two-thirds of the family caregivers surveyed in the hospital setting reported acute depressive symptoms at a level of severity signifying risk for a clinical depressive syndrome. The participants included fewer spousal caregivers in the hospital setting, suggesting greater involvement from adult children of hospitalized patients. Our interpretation of these data is that caregiving for a patient hospitalized for psychiatric treatment of dementia is a risk factor for depression.

Alternative interpretations of the data are possible. An unmeasured variable unrelated to caregiving, such as the witnessing of other patients' suffering when a family caregiver visits a hospital, could explain the differences in depression. Also, the results could be explained by sampling bias. To address how potential recruitment bias may have impacted the results, we conducted alternative statistical analyses controlling for spousal relationship and outpatient recruitment site; the significance of the results regarding greater depression severity in the hospital setting was unchanged. Regarding the demographic differences between the study cohorts, we think this is likely related to role functioning in each environment. If a hospitalized individual has both a spouse and an adult -child caregiver, it may be that the adult child takes a leadership role. Of note, the finding of fewer spousal caregivers in the hospital setting is consistent with other reports that the absence of a spouse increases risk for hospitalization.⁹

There are several weaknesses in the current study. The sample sizes are relatively small. More research is needed regarding epidemiological cross-sectional and longitudinal assessment of caregivers of individuals hospitalized for dementia. Similarly, the current study's participants include few individuals from racial and ethnic minorities. This is representative of the background of the patients admitted for inpatient and outpatient treatment at the study sites; and, this weakness means that the current data may not generalize to family caregivers who are not white. Another limitation is that the results do not include symptom severity data regarding dementia symptoms of the care-recipient; without this information it is not possible to draw conclusions regarding the relationship between dementia symptoms and caregiver mood. By definition, care- recipients undergoing hospital treatment for behavioral disturbance demonstrate greater symptoms related to dementia than outpatients; nevertheless, future studies should include measures of neuropsychiatric symptoms as assessed by both the family caregiver and a clinician rater. Finally, these data are cross-sectional. Without longitudinal follow-up, it is not possible to determine whether depressive symptoms are likely to remit or worsen; it may be that heightened symptoms are a time-limited response to the acute stressor of having a parent or spouse in the hospital.

It is clinically important to consider caregivers' risk for depression during the hospital treatment for a care-recipient with dementia. Family members are inextricably part of patient care services for dementia and a caregiver's functioning and decision-making can impact patient outcome. The results reported here suggest that being the primary caregiver for an individual who is hospitalized for dementia treatment is a risk factor for depression in the caregiver. The regression effect size that included a number of covariates is small in magnitude; however, the overall estimate of effect size according to Cohen's *d* suggests medium group differences regarding caregiver depression (.58), burden (.49) and grief (.53).

This greater severity of depressive symptoms for caregivers of hospitalized patients, if substantiated in future studies, is likely clinically significant for several reasons. Forty-three percent of the caregivers of outpatients in this study reported clinical-level depressive symptoms. For caregivers of outpatients, there are interventions proven to mitigate depressive symptoms; however, most clinical trials of such programming excluded participation from individuals with dementia at imminent risk for hospitalization;¹ given this, it remains an empirical question as to whether currently-existing caregiver treatments may be successfully used to reduce depressive symptoms in caregivers of hospitalized individuals. Also, one must consider data from other studies showing that hospitalization of a spouse places a caregiver at *subsequent* increased risk for depression¹⁰ and death. In this context, our study's results suggest that depressive symptoms may start or increase during a care-recipient's hospital treatment. If future research does demonstrate this risk to be true, that caregivers who are depressed during psychiatric hospital treatment of a spouse or parent with dementia are at risk for subsequent major depressive disorder, then new programs with innovative treatment designs¹¹ may be necessary in order to assist family caregivers regarding in-hospital and post-hospital caregiving responsibilities while concurrently treating or preventing the development of depression.

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Table 1

Demographic & Clinical Variables: Group Differences

	Caregivers of an Outpatient (n = 44)		Caregivers of a Hospitalized Person (n = 41)		Test Statistic	DF	Sig. Group Difference
	Mean or %	SD	Mean or %	SD			
Mean Age	65.9	13.3	57.0	12.1	t = 3.17	81	.002**
% Female [‡]	64 %		68 %		$\chi^2 = 0.21$	1	.651
% White [‡]	95 %		100 %		$\chi^2 = 1.91$	1	.167
% Married [‡]	82 %		65 %		$\chi^2 = 3.07$	1	.080
% Co-Habiting [‡]	67 %		30 %		$\chi^2 = 11.6$	1	<.001**
% Spousal [‡]	59 %		20 %		$\chi^2 = 13.9$	1	<.001**
Mean Income Category	6.2	2.1	6.5	2.5	t = 0.57	74	.570
Hours/Week Category	4.1	2.2	3.5	2.1	t = 1.14	83	.259
Number who can Help	1.6	1.4	1.7	1.4	t = 0.34	82	.733
Depression	9.4	6.1	13.2	6.9	t = 2.74	83	.008**
Stress	6.0	3.5	7.1	3.5	t = 1.46	82	.148
Burden	10.5	6.4	13.8	7.0	t = 2.26	82	.026*
Grief	17.0	10.9	23.5	13.7	t = 2.43	83	.017*
							<u>Cohen's d</u>
							0.58
							0.31
							0.49
							0.53

[‡]This table reports the mean value and standard deviation (SD) (or percent for dichotomous variables) and the significance regarding paired t-tests and chi square tests assessing group differences. Hours / week category of "4" corresponds with 21 – 30 hours / week. The test statistic and degrees of freedom (DF) are reported for all tests. Cohen's d effect size is reported only for clinical variables. Clinical measures are described in Methods.

* significance < .05

** significance < .01