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Associations of financial hardship with suicidal ideation among bereaved cancer caregivers

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Abstract

Purpose—To examine associations between financial hardship and suicidal ideation among bereaved informal caregivers of cancer patients.

Design—Longitudinal cohort study

Sample—173 informal caregivers of advanced cancer patients

Methods—Caregivers were interviewed a median 3.1 months before and 6.5 months after the death of the patient they cared for. Logistic regression models estimated associations between caregiver-perceived pre-loss and post-loss financial hardship due to the patient’s illness and post-loss suicidal ideation.

Findings—Suicidal ideation was identified in 12% (n=21) of the sample pre-loss, rising to 20% (n=34) post-loss (P=.049). Pre-loss financial hardship (OR=3.4, 95% CI=1.5-7.4, P=.002) and post-loss financial hardship (OR=3.7, 95% CI=1.7-8.2, P=.001) were each bivariately associated with post-loss suicidal ideation. In multivariable models adjusting for pre-loss suicidal ideation, psychiatric diagnosis, and spousal relationship to the patient, post-loss financial hardship remained significantly associated with post-loss suicidal ideation (AOR=3.6, 95% CI=1.4-8.8, P=.006).

Conclusion—Among a cohort of cancer caregivers followed from active caregiving into bereavement, post-loss financial hardship was associated with suicidal ideation in bereavement.

Implications—Economic policies that financially benefit caregivers may represent promising strategies for preventing suicidal thoughts and behaviors.

Keywords

Suicidal ideation; caregiving; financial hardship; cancer

Introduction

Compared to the general population, people who provide unpaid care for adult family members are more likely to experience poor mental health¹ and suicidal ideation.² Factors

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associated with suicidal ideation among caregivers include symptoms of anxiety and depression,^{3–6} lack of social support,^{3–6} income and unemployment,^{5–7} and perceptions that their care recipients had poorer quality of life at the end of life.⁸

The financial impact of long-term illness and medical treatment is often an additional burden for caregivers and their care recipients. In the United States, approximately half of cancer patients⁹ and their caregivers¹⁰ report financial hardship as a result of the patient's illness. Caregivers may also be forced to exit the labor force or reduce their working hours to provide care, resulting in less income and additional financial strain.¹¹ Very few studies have examined the relationship between financial hardship and suicidal ideation among cancer patient caregivers, especially following the death of the patient. Because bereavement¹² and financial hardship¹³ have been identified as risk factors for suicidal thoughts and behaviors among the general population, similar trends may be present among caregivers as well.

We used data from a prospective longitudinal psychiatric epidemiological study to identify associations between financial hardship and suicidal ideation among a cohort of bereaved family caregivers of terminally ill cancer patients. In this pre-planned exploratory analysis, we hypothesized that financial hardship, measured before and after patient death, would be associated with increased risk of suicidal ideation in bereavement.

Methods

Study Sample

Participants in this study were enrolled in a federally funded, multi-site, prospective longitudinal cohort study of advanced cancer patients and their caregivers. Participants were recruited from September 2002 to February 2008. The subset of caregivers used in these analyses were recruited from Yale Cancer Center, the Veterans Affairs Connecticut Healthcare System Comprehensive Cancer Clinics (VA), the Parkland Hospital Palliative Care Service, the Simmons Comprehensive Cancer Center, Dana-Farber Cancer Institute (DFCI), and New Hampshire Oncology-Hematology (NHOH). IRB approval was obtained at all study sites. Written informed consent was provided by all study participants.

Family caregivers were eligible to participate in the study if they and the advanced cancer patient they cared for were at least 20 years old. Caregivers were ineligible to participate if they demonstrated symptoms of significant cognitive impairment as indicated by their score on the Short Portable Mental Status Questionnaire¹⁴ or if their corresponding patient refused participation.

Trained research assistants collected all data used in this analysis through in-person structured interviews conducted a median of 3.1 months before and 6.5 months after the death of the patient. Participants were compensated \$25 per interview. Participants who endorsed suicidal ideation or were found to meet criteria for a psychiatric diagnosis received further evaluation by a study psychiatrist and were offered referrals for care.

Data from caregivers who had complete financial hardship and mental health diagnosis data at the pre-loss assessment, as well as complete suicidal ideation data at both pre-loss and

post-loss assessments, were used in this analysis. Compared to all other caregivers with baseline interview data (N=547), the caregivers in our analytic sample (N=173) were more frequently recruited at Simmons (12.2% versus 6.1%), Parkland (33.7% versus 25.1%) and NHOH (29.1% versus 21.6%) but did not differ on a $P < .05$ level on any other variable examined in this analysis.

Measures

Suicidal ideation was assessed both pre-loss and post-loss using the Yale Evaluation of Suicidality, a self-report measure previously used to identify suicidal ideation in bereaved persons,¹⁵ cancer patients,^{16,17} and members of the caregiver cohort used in this study.⁸ Consistent with prior uses of the measure,^{8,16,17} suicidal ideation was indexed by endorsement of one or more of four screening items assessing the respondent's wish to live, wish to die, thoughts of killing one's self, and whether living outweighed dying.

A composite measure of financial hardship was created for the purposes of this analysis, indexed by endorsement of at least one of five yes/no items from the Covinsky Family Impact Survey.¹⁸ Items assessed whether the patient's illness resulted in (1) the use of all/most of the family's savings or (2) meant the loss of a major source of family income, and whether the costs of care required the family to (3) move to a less expensive place, (4) put off medical care for other family members, or (5) put off educational or other plans for other family members. These data were collected at both pre-loss and post-loss interviews.

Major depressive disorder, generalized anxiety disorder, panic disorder, and post-traumatic stress disorder were diagnosed using the Structured Clinical Interview for the DSM-IV (SCID)¹⁹ administered at baseline interview. Because diagnosis of each individual disorder was rare, a binary variable of any vs. no psychiatric diagnosis was created for use in these analyses to prevent sparse-data bias.²⁰

Caregiver age, gender (male or female), race/ethnicity (White, Black, Hispanic, Asian/Pacific Islander, or other), relationship to the patient (spouse/partner, son/daughter, sibling, parent, other relative, friend, or other), and patient insurance status (any versus no insurance) were provided by participants at the baseline interview. Time since loss was calculated by subtracting date of patient death, as reported by participants, from the date of the post-loss follow up interview. To facilitate comparisons, education was dichotomized at 16 years to indicate college graduation. Due to small cell counts, we collapsed Asian/Pacific Islander race with "other" when reporting caregiver race/ethnicity and collapsed all non-spouse/partner categories with "other" when reporting caregiver relationship to the patient.

Statistical Analysis

First, we described differences in demographic characteristics, psychiatric diagnoses, pre-loss suicidal ideation, and financial hardship among caregivers with and without post-loss suicidal ideation using frequencies and percentages for categorical variables and means and standard deviations for continuous variables. We then fit bivariate logistic regression models to estimate the associations of each of the above variables with post-loss suicidal ideation.

Next, we used McNemar's test to compare changes in the prevalence of both suicidal ideation and financial hardship from pre-loss to post-loss. Last, we estimated associations of pre-loss and post-loss financial hardship with post-loss suicidal ideation in separate multivariable logistic regression models. These models adjusted for variables previously found to be significantly bivariately associated with post-loss suicidal ideation. To avoid collinearity, the post-loss financial hardship model did not adjust for pre-loss financial hardship. Statistical analyses were conducted using SPSS version 27. Two-sided tests were used with $P < 0.05$ taken to be statistically significant.

Results

Caregivers were mostly White ($n=120$, 70%), female ($n=132$, 76%), the spouse or partner of the patient they cared for ($n=86$, 53%), and had a mean age of 53 ($SD=13$) (Table 1). Caregivers with post-loss suicidal ideation more frequently had psychiatric diagnoses (35% versus 6%), pre-loss suicidal ideation (27% versus 9%) and were spouses of patients (79% versus 47%); these variables were all significantly associated with post-loss suicidal ideation in separate bivariate logistic regression models.

The prevalence of pre-loss suicidal ideation was 12% ($n=21$) and rose to 20% ($n=34$) post-loss ($P=.049$). Among the 34 participants reporting post-loss suicidal ideation, 9 (27%) had also reported pre-loss suicidal ideation. The remaining cases of post-loss suicidal ideation ($n=25$, 74%) represented caregivers who did not report suicidal ideation in the pre-loss interview.

Financial hardship was frequently reported by caregivers both pre-loss ($n=71$, 41%) and post-loss ($n=72$, 43%, $P=.735$). Of those who reported financial hardship at any time ($n=88$), 53 caregivers (60%) reported financial hardship at both timepoints. Sixteen caregivers (18%) reported pre-loss financial hardship but no post-loss financial hardship, and 19 caregivers (22%) first reported financial hardship after the death of the patient.

Pre-loss financial hardship ($OR=3.4$, 95% $CI=1.5-7.4$, $P=.002$) and post-loss financial hardship ($OR=3.7$, 95% $CI=1.7-8.2$, $P=.001$) were each bivariately associated with post-loss suicidal ideation in logistic regression models (Table 1). In separate multivariable logistic regression models adjusting for pre-loss suicidal ideation, pre-loss psychiatric diagnosis, and relationship to the patient, post-loss financial hardship ($AOR=3.6$, 95% $CI=1.4-8.8$, $P=.006$) remained independently associated with post-loss suicidal ideation, whereas pre-loss financial hardship was not associated at a significant level ($AOR=2.2$, 95% $CI=0.9-5.2$, $P=.087$) (Table 2).

Discussion

Using data from a cohort of cancer caregivers longitudinally followed from active caregiving through bereavement, we found that post-loss financial hardship was associated with post-loss suicidal ideation. Prevalence of caregiver suicidal ideation rose following care recipient death; pre-loss suicidal ideation, pre-loss psychiatric diagnosis, and caregiver-patient relationship were associated with post-loss suicidal ideation as well. Taken as a whole, these results indicate a need to identify policies that protect families from the

financial “toxicity”⁸ of cancer care and subsidize informal caregiving, as they may represent potential strategies for reducing family caregiver suicidal risk in bereavement. These data also suggest that bereaved spousal caregivers, who likely shared finances with their care recipients, may be an especially at-risk group for suicidal ideation, as are those with pre-existing mental health conditions. Although the link between pre-loss financial hardship and post-loss suicidal ideation was not as strong in our multivariable model, the positive, non-significant association we found was consistent with results for post-loss financial hardship.

The high rates of financial hardship we found are similar to estimates from other studies of cancer caregivers.¹⁰ The elevated prevalence of suicidal ideation we identified also aligns with research conducted among caregivers of HIV/AIDS patients,⁷ caregivers of dementia patients,⁵ and bereaved persons in general.¹² Because we chose to examine financial hardship resulting from cancer and its treatment rather than general markers of socioeconomic status, our findings are consistent with, yet distinct from, previous studies that have linked income^{5,7} and unemployment⁶ with suicidal ideation among caregivers of patients with long-term serious illnesses.

Our findings have implications for legislation currently under review in the United States Senate and House of Representatives. The Credit for Caring Act of 2021 would provide federal tax credits for those who care for individuals with long-term illnesses or disabilities,²¹ and could thus potentially serve to protect caregivers from suicidal ideation by providing financial assistance. Our results also suggest that caregivers of advanced cancer patients should be screened frequently for psychological distress, financial hardship, and suicidal ideation. This can be accomplished by many members of the patient’s care team, including physicians, nurses, and social workers. Following the death of the patient, when risk for suicidal ideation in caregivers may rise, clinician-initiated outreach that includes screening for suicidal ideation should be an essential part of “aftercare.”²²

Limitations

This study has several limitations. The sample size was modest, though sufficient to find statistically significant changes in suicidal ideation and associated risk factors. Due to large amounts of missing data, income was not included as a covariate in analyses, though other sociodemographic indicators like education and insurance were examined and shown to be balanced between groups. Due to small cell sizes, we collapsed some categorical variables to facilitate modeling. We did not have access to records detailing additional screening or mental health referrals for participants that occurred as part of study safety protocol; as a result, we could not adjust for or otherwise examine this in our analysis. Symptoms of prolonged grief disorder were only measured in a small subset of participants in this sample and thus could not be adjusted for in analyses without dramatically reducing the sample size; presence or absence of other relevant psychiatric diagnoses, however, was included as a composite covariate in models. Lastly, this study did not measure self-injurious behavior or deaths by suicide. Suicidal ideation alone, however, is a clinically significant mental health symptom and potential indicator of substantial distress.

Conclusion

We found that among bereaved cancer patient caregivers, post-loss financial hardship was associated with suicidal ideation. Future research analyzing these trends in larger samples and identifying the effects of economic policies benefitting caregivers on suicidal thoughts and behaviors is needed.

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Data availability statement

The data that support the findings of this study are available from the corresponding author, [HGP], upon reasonable request.

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Table 1.

Characteristics of the study sample and bivariate associations with post-loss suicidal ideation

Characteristic	Sample (N=173) ¹		No post-loss SI (n=139, 80%)		Post-loss SI (n=34, 20%)		Bivariate associations with post-loss suicidal ideation			
	n	%	n	%	n	%	OR	95% CI	P	
Recruitment site										
Yale	34	20%	31	22%	3	9%				
VA	2	1%	2	1%	0	0%				
Simmons	21	12%	17	12%	4	12%				
Parkland	58	34%	44	32%	14	42%				
DFCI	7	4%	4	3%	3	9%				
NHOH	50	29%	41	30%	9	27%				
Age (years) ²	53	13	53	13	55	13	1.01	0.98	1.05	.368
Gender										
Male	41	24%	30	22%	11	32%	Ref.			
Female	132	76%	109	78%	23	68%	0.6	0.3	1.3	.189
Race/ethnicity										
White	120	70%	96	70%	24	71%	Ref.			
Black	23	14%	19	14%	4	12%	0.8	0.3	2.7	.773
Hispanic	22	13%	18	13%	4	12%	0.9	0.3	2.9	.844
Other	6	4%	4	3%	2	6%	2.0	0.3	11.6	.439
Relationship to patient										
Other relationship	76	47%	69	54%	7	21%	Ref.			
Spouse/partner of patient	86	53%	60	47%	26	79%	4.3	1.7	10.5	.002
Education										
Some college or less	110	64%	85	61%	25	74%	Ref.			
College graduate or greater	63	36%	54	39%	9	27%	0.6	0.2	1.3	.182
Health insurance status of patient										
Insured	112	67%	93	69%	19	58%	Ref.			
Uninsured	55	33%	41	31%	14	42%	1.7	0.8	3.7	.198
Time since loss (months) ²	7.4	4.1	7.5	4.4	7.0	2.1	1.0	0.8	1.1	.576
Pre-loss psychiatric diagnosis ³										
No	153	88%	131	94%	22	65%	Ref.			
Yes	20	12%	8	6%	12	35%	8.9	3.3	24.3	<.001
Pre-loss suicidal ideation										
No	152	88%	127	91%	25	74%	Ref.			
Yes	21	12%	12	9%	9	27%	3.8	1.5	10.0	.007
Pre-loss financial hardship										
No	102	59%	90	65%	12	35%	Ref.			

Characteristic	Sample (N=173) ¹		No post-loss SI (n=139, 80%)		Post-loss SI (n=34, 20%)		Bivariate associations with post-loss suicidal ideation			
	n	%	n	%	n	%	OR	95% CI		P
Yes	71	41%	49	35%	22	65%	3.4	1.5	7.4	.002
Post-loss financial hardship										
No	97	57%	86	64%	11	32%	Ref.			
Yes	72	43%	49	36%	23	68%	3.7	1.7	8.2	.001

¹- Due to missing data, summed observations may not equal sample size

²- Mean and standard deviation presented instead of frequencies

³- Diagnosis of major depressive disorder, generalized anxiety disorder, panic disorder, and/or post-traumatic stress disorder

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Table 2.

Associations of financial hardship with post-loss suicidal ideation

Adjusted associations of pre-loss financial hardship with post-loss suicidal ideation, N = 162				
Variable	AOR	95% CI		P
Pre-loss financial hardship	2.2	0.9	5.2	.087
Pre-loss suicidal ideation	5.6	1.9	16.6	.002
Pre-loss psychiatric diagnosis	2.7	0.9	8.2	.076
Spousal relationship	3.7	1.4	9.8	.008
Adjusted associations of post-loss financial hardship with post-loss suicidal ideation, N = 158				
Variable	AOR	95% CI		P
Post-loss financial hardship	3.6	1.4	8.8	.006
Pre-loss suicidal ideation	6.0	2.0	18.3	.002
Pre-loss psychiatric diagnosis	3.3	1.1	10.2	.041
Spousal relationship	4.0	1.5	10.6	.006