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To cite this article: Ana Jessica Alfaro, Chalise Carlson, Daniel L. Segal & Christine E. Gould (2022) Distinctions between depression and anxiety with fear of being a burden in late life, *Aging & Mental Health*, 26:12, 2366-2371, DOI: [10.1080/13607863.2021.1993131](https://doi.org/10.1080/13607863.2021.1993131)

To link to this article: <https://doi.org/10.1080/13607863.2021.1993131>



Published online: 29 Oct 2021.



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Distinctions between depression and anxiety with fear of being a burden in late life

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ABSTRACT

Objectives: The perception of being a burden is a well-known risk factor for dying by suicide. Research on factors that precede the state of perceived burdensomeness, such as fearing being a burden, is necessary. We investigated the extent to which health status, elevated depressive symptoms, and elevated anxiety symptoms are associated with fear of being a burden in late life.

Method: Older adult participants ($N = 155$) completed the Geriatric Anxiety Scale (GAS), Patient Health Questionnaire (PHQ-8), and demographic and health questions. Fear of being a burden, assessed with a supplemental item on the GAS, was categorically grouped as ‘no fear’ or ‘some fear’. Using logistic regression, we examined predictors of fear of being a burden.

Results: In the first step, elevated depression was associated with fear of being a burden ($OR = 2.30$, 95% CI: 1.09, 4.89, $p = .03$), but health status was not significant. In the second step, elevated anxiety was significant ($OR = 2.63$, 95% CI: 1.15, 5.99, $p = .02$); depression was no longer significant.

Conclusion: Contrary to expectations, anxiety more strongly predicted fear of being a burden than depression. Future research should further investigate the role of anxiety in fear of being a burden and ways of intervening.

ARTICLE HISTORY

Received 5 May 2021

Accepted 11 October 2021

KEYWORDS

Fear of being a burden;
late-life anxiety;
late-life depression;
older adults

Introduction

Suicide rates among older adults are as high as 48.7/100,000 (Conejero et al., 2018), making this group the highest at risk for dying by suicide, worldwide (World Health Organization (WHO), 2014). As suicide attempts by older adults are often fatal (Drapeau & McIntosh, 2020), it is critical to identify factors that precede such attempts. The Interpersonal Theory of Suicide (IPT) postulates that perceived burdensomeness, defined as the perception that one is a burden to family and friends, may be an important proximal cause of suicide ideation (Joiner, 2007; Van Orden et al., 2010). Prior research on the IPT has demonstrated strong and robust relationships between perceptions of being a burden and suicidal behavior, across a wide range of samples (Chu et al., 2017) including older adults (e.g. Cukrowicz et al., 2011; Van Orden et al., 2006). The theory integrates the importance of how people perceive their social relations which may be especially relevant to older adults, as many may experience distress when they begin to increasingly require more care from family members and other social networks (Jahn et al., 2013). The objective need for assistance from others paired with an individual’s perception may lead to elevated perceived burdensomeness among older adults.

Mental health symptoms play a key role in perceived burdensomeness. Research demonstrates that mental health symptoms, primarily elevated depressive symptoms, are significantly related to the perception of being a burden to others among older adults (e.g. Guidry & Cukrowicz, 2016). In a sample of 114 Veterans with depression histories, perceived burden was strongly related to depressive symptoms and to suicide attempt

history (Bell et al., 2018). Beyond mental disorders, personality traits, specifically high neuroticism and low extraversion, were found to be associated with high perceived burdensomeness in a sample of older adults who had attempted suicide (Vanyukov et al., 2017). Whereas both neuroticism and depression are significantly associated with perceived burdensomeness, less is known about the association of late-life anxiety with perceived burdensomeness. Consideration of anxiety is of particular importance based on finding that anxiety disorders comorbid with depression afflicted one of every six older adults who died by suicide (Voshaar et al., 2015). Further, Petkus et al. (2018) found that approximately one third of older primary care patients with anxiety disorders endorsed suicide/death ideation (i.e. ‘do you think you would be better off dead or wish you were dead’). Thus, further research to better understand perceived burdensomeness in the context of anxiety is warranted.

Although perceived burdensomeness is well-studied, notable gaps exist regarding our understanding of factors that precede the state of believing one is a burden. Fear of being a burden is one such proximal factor that has been primarily examined in terminally ill/hospice settings (e.g. Fox, 2020) and in relation to physician assisted suicide or medical aid in dying (Chochinov et al., 2007). Fox (2020) suggests that dependency is a major fear at the end of life, which leads to some patients questioning their value as a human being. Furthermore, a recent study of 2,132 older Veterans who were last seen by a primary care provider before a documented suicide attempt, found that unexpectedly, patients with a higher burden of comorbid medical and psychiatric conditions were less likely to attempt fatally than patients with minimal comorbidity

(Morin et al., 2019), further supporting the need to understand upstream factors related to suicide.

Research targeting fear of being a burden may illuminate factors that precede burdensomeness in older adults. Understanding the association of factors such as fear of being a burden may lead to targets for earlier identification and intervention to prevent negative outcomes such as suicide ideation or death by suicide. For this reason, the present study sought to be an important first step in examining fear of being a burden in late life. Specifically, we investigated associations between elevated mental health symptoms (specifically depression and anxiety) and fear of being a burden in late life. We hypothesized that both depression and anxiety would contribute to fear of being a burden, but based on previous findings (Guidry & Cukrowicz, 2016), the strength of elevated depressive symptoms will be greater. As a secondary aim, we also examined the extent to which health status was associated with fear of being a burden in late life and hypothesized that poor self-perceived health status would be more strongly associated with fear of being a burden compared with good or excellent self-perceived health status.

Materials and methods

Participants

Study participants consisted of 155 older adults (aged 60 to 92 years old) who completed questionnaires as part of four studies taking place between 2015 and 2019. Data for the present study were gathered from two intervention studies examining interventions for late-life anxiety (Gould et al., 2019, 2020) and two mixed methods studies examining perceptions of self-management and other technology-delivered interventions (Gould et al., 2017, 2021). Of the participants included, 39% ($N=60$) came from anxiety treatment studies. Eligible participants were 60 years of age or older, who did not report serious psychiatric disorders (schizophrenia, schizoaffective disorder, bipolar disorder, psychotic disorder) or a diagnosis of dementia, or who exhibited cognitive impairment on a brief cognitive assessment.

Procedures

All participants completed a phone screening to assess for inclusion/exclusion criteria regardless of study and completed the Geriatric Anxiety Scale (GAS), Patient Health Questionnaire (PHQ-8 or PHQ-9), and demographic and health questions after providing consent to participate in the studies. In the treatment studies, we also assessed whether participants had an anxiety diagnosis during the baseline assessment.

Measures

Fear of being a burden

Respondents indicated how often in the past week they experienced fear of becoming a burden to family or children (i.e. 'I was afraid of becoming a burden to my family or children') during the past week using a 4-point Likert-type scale. This item makes up one of five supplemental questions assessing worry or fear content on the Geriatric Anxiety Scale. Supplemental questions do not contribute to the total score on this measure (see below). Fear of being a burden scores were collapsed into two categories: no fear (0) or some fear (1). *Not at all* responses

to the item were coded as 'no fear'. Responses scored 1–3 (i.e. *sometimes, most of the time, all of the time*) were categorized as having 'some fear'.

Geriatric Anxiety Scale (GAS)

The Geriatric Anxiety Scale (Segal et al., 2010) a 30-item self-report measure used to detect anxiety symptoms among older adults. The first 25 items comprise the total score and represent three common domains of anxiety among older adults (cognitive, somatic, and affective). For each item, participants indicate how often in the past week have they experienced each symptom on a 4-point Likert-type scale ranging from *not at all* (0) to *all of the time* (3), with higher scores indicating higher levels of anxiety. Elevated anxiety symptoms were defined using the clinical cutoff score of 16 or more points (Gould et al., 2014). Internal consistency reliability for the total GAS was excellent among our sample ($\alpha = .94$).

Patient Health Questionnaire (PHQ-8)

The PHQ-8 is an 8-item self-report scale that measures depressive symptoms in the 2 weeks prior to assessment (Kroenke et al., 2009). Items are scored based on the frequency of which the respondent has been bothered by the symptoms, ranging from *not at all* (0) to *nearly every day* (3), with total scores ranging from 0 to 24. Higher scores indicate higher levels of depressive symptoms. Elevated depressive symptoms were defined using the clinical cutoff score of 10 or more points. Eighty participants completed the PHQ-9 (Kroenke et al., 2001), which includes a ninth item that evaluates passive thoughts of death or self-injury. However, to harmonize the data, we recalculated the PHQ-8 scores for those participants. The PHQ-8 has been shown to be comparable to the PHQ-9 with similar cutoff scores (Wu et al., 2020). Internal consistency reliability for the total PHQ-8 was excellent among our sample ($\alpha = .90$).

Demographics/health status

The baseline demographic questionnaire assessed age, gender, race/ethnicity, Veteran status, marital status, and self-rated health. For this study, health status was ascertained by asking respondents to describe their health (i.e. in general, would you say your health is: excellent, good, fair, and poor). In a subset of 87 participants, five options were provided for health status instead of four (excellent, very good, good, fair, or poor). To harmonize the data, the *excellent* and *very good* responses were collapsed into one category. Marital status was categorized as single, married, or separated/divorced/widowed and is included in sensitivity analyses based on previous findings (Jahn et al., 2013).

Statistical analysis

All analyses were conducted using SPSS v24 (IBM Corp.2018). Descriptive statistics were used to characterize the sample with regards to demographic characteristics including age, gender, race, and Veteran status. To determine whether there were differences in treatment study and non-treatment study participants on the primary dependent variable (fear of being a burden), we conducted an independent-sample t-test. Next, logistic regression analyses were used to examine the association between health status, elevated depressive symptoms, and

elevated anxiety symptoms with presence of fear of being a burden. Health status and depressive symptoms were entered in the first step of the regression, and anxiety symptoms were entered in the second step. Model fit was compared using the deviance statistic (i.e. $-2 \times \log\text{-likelihood}$; $-2LL$) and calculating chi-square statistics comparing each version of the model. Effect size measures for predictors in the logistic regression were computed using the following formula: $d = \log(\text{OR}) \times \sqrt{3}/\pi$ or $d = \log(\text{OR})/1.81$ (Crowson, 2021).

Sensitivity analyses were conducted to examine: (1) whether adding marital status to the model adjusted the findings; (2) whether findings differed between participants in a treatment study versus not; (3) whether findings differed for the subset of participants in a treatment study with an anxiety disorder diagnosis ($N = 50$).

Results

Participants consisted of 155 older adults (M age = 68.98 years, $SD = 6.82$ years), with 39% coming from an anxiety treatment study. The majority of participants were white (67.7%), male (71%), and Veterans (76.1%) (see Table 1 for full demographics). About 53% of the sample did not endorse fear of being a burden. Endorsing fear of being a burden did not differ between participants in an anxiety treatment study and those not in a treatment study; $t(153) = -.701, p = .485$. Thus, the primary analyses focused on the entire sample. About 24% of the participants reported being single, 32% were married, and 44% were separated, divorced, or widowed.

A logistic regression was conducted to examine the association between fear of being a burden and health status, elevated depressive, and elevated anxiety symptoms (see Table 2). In the first step, elevated depression ($OR = 2.30, 95\% CI: 1.09, 4.89, p = .03$) and good health ($OR = 3.13, 95\% CI: 1.11, 8.81, p = .03$) were significantly associated with fear of being a burden. All other health statuses (i.e. poor, excellent, & fair) were not significant predictors. In the second step, elevated anxiety was a significant contributor ($OR = 2.63, 95\% CI: 1.15, 5.99, p = .02$), whereas depression ($OR = 1.29, 95\% CI: .52, 3.18, p = .58$) and good health status ($OR = 2.73, 95\% CI: .94, 7.86, p = .06$) were no longer significant. In comparing the models (i.e. block one and block two) we found that adding anxiety as a predictor significantly improved the model fit $\chi^2(1) = 5.35, p = .020$. Further, Cohen's effect size value for anxiety ($d = .54$) suggest a medium effect size compared to small effect sizes for both depression ($d = .08$) and health status ($d = .12$).

Sensitivity analysis

Based on a previous finding (Jahn et al., 2013) that perceptions of being a burden to one's spouse were especially harmful compared to perceptions of burden on a child, we conducted another logistic regression and included marital status in the model. In the first step of this model, marital status was not a significant contributor, but its inclusion in the model slightly attenuated the associations of elevated depression ($OR = 2.15, 95\% CI: 1.004, 4.6, p = .049$) and good health ($OR = 2.90, 95\% CI: 1.01, 8.36, p = .048$) with fear of being a burden. In the second

Table 1. Participant Characteristics ($N = 155$).

Participant Characteristics	N (%)	M (SD)
Age (years)		68.98 (6.82)
Education (years)		16.36 (2.57)
Veteran status		
Non-Veteran	37 (23.9%)	
Veteran	118 (76.1%)	
Sex		
Female	45 (29%)	
Male	110 (71%)	
Study Type		
Non-Treatment	95 (61.3%)	
Treatment	60 (38.7%)	
Race/Ethnicity		
American Indian or Alaskan Native	6 (3.9%)	
Asian	11 (7.1%)	
Black	14 (9%)	
White, Non-Hispanic	105 (67.7%)	
Other	18 (11.6%)	
Marital Status		
Single	37 (23.9%)	
Married	50 (32.3%)	
Separated/Divorced/Widowed	68 (43.8%)	
*Current Psychiatric Diagnoses		
Any Current Mood Disorder(s)	17 (10.9%)	
Any Current Anxiety Disorder(s)	50 (32.2%)	
Fear of being a burden		
No Fear	83 (53.5%)	
Some Fear	72 (46.5%)	
GAS		18.19 (12.1)
Low	73 (47.1%)	
High	82 (52.9%)	
PHQ-8		6.57 (5.93)
Low	108 (69.7%)	
High	47 (30.3%)	
Health Status		
Excellent	32 (20.6%)	
Good	77 (49.7%)	
Fair	37 (23.9%)	
Poor	9 (5.8%)	

Note. *Percentage of current psychiatric diagnosis is based on participants from treatment studies ($n = 60$).

Table 2. Results from Logistical Regression.

Step	Predictor	Unstandardized coefficients		Wald χ^2	<i>p</i>	OR	95% CI OR
		<i>B</i>	<i>SE</i>				
1	Depression	.83	0.38	4.73	.030	2.30	[1.09, 4.89]
	Poor Health (Ref.)			5.389	.145		
	Excellent Health	.74	.46	2.57	.108	2.1	[.85, 5.2]
	Good Health	1.14	.52	4.68	.030	3.13	[1.11, 8.81]
	Fair Health	.17	.83	.044	.834	1.19	[.236, 6]
2	Depression	.25	.46	.306	.580	1.29	[.52, 3.18]
	Poor Health (Ref.)			4.318	.229		
	Excellent Health	.663	.472	1.977	.160	1.942	[.77, 4.9]
	Good Health	1	.54	3.46	.063	2.73	[.94, 7.86]
	Fair Health	.026	.832		.975	1.026	[.2, 5.24]
	Anxiety	.96	.42	5.27	.022	2.63	[1.15, 5.99]

Note. *N* = 155. *SE* = standard error of *B*. Ref. Category: Low depression, low anxiety, and poor health were reference categories.

step, elevated anxiety remained a significant contributor (OR = 2.87, 95% CI: 1.23, 6.73, *p* = .015). We compared the model fit of this revised model with marital status included to our primary model and found that the primary model was superior in terms of overall model fit (*p* = .197).

We conducted a second sensitivity analysis to examine whether the effects differ when our sample was limited to participants in a treatment study compared to those not in a treatment study. First, we examined our primary logistic regression model with participants in a treatment study (*n* = 60). While health status, elevated depressive symptoms, and anxiety symptoms were not significantly associated with fear of being a burden, the pattern of odds ratios were consistent with the findings presented above. Then, the analyses were repeated for participants not in a treatment study (*n* = 95). In the first step, elevated depression (OR = 3.25, 95% CI: 1.17, 9.01, *p* = .023) and good health (OR = 5.42, 95% CI: 1.44, 20.40, *p* = .120) were significantly associated with fear of being a burden. In the second step, good health (OR = 5.32, 95% CI: 1.37, 20.56, *p* = .015) was the only significant contributor; anxiety (OR = 3.32, 95% CI: .93, 11.88, *p* = .065) and depression (OR = 1.30, 95% CI: .32, 5.33, *p* = .712) were not significant.

Discussion

The primary aim of this study was to examine the association of depression and anxiety with fear of being a burden in a later life sample. We hypothesized that although both depression and anxiety would contribute to fear of being a burden, the strength of elevated depressive symptoms would be greater. First, and not surprisingly, we found that elevated depressive symptoms were associated with fear of being a burden. When elevated anxiety symptoms were added and model fit was compared, contrary to our expectations, our preliminary findings suggest that elevated anxiety contributes to fear of being a burden above and beyond depression. In an attempt to rule out other possible explanations for this finding, we ran three sensitivity analyses to isolate whether this effect may be a function that a third of our sample were recruited for anxiety treatment studies (32% had a current anxiety disorder). While not all findings were significant—possibly due to low statistical power—the overall pattern still generally held with anxiety and health status having stronger associations with fear of being a burden compared with depression. Future studies are needed to further tease apart the extent to which the presence of elevated anxiety and anxiety disorders may be related to fear of being a burden.

One possible explanation for anxiety better predicting fear of being a burden may be related to the way we operationalized our variable of interest. This study specifically examined fear as the antecedent to the state of being a burden; therefore, fear of being a burden may be more closely aligned with the future-oriented nature of anxiety and worry (Barlow, 2002) than with the ruminative nature of depression (Davey & Wells, 2006). Fear and anxiety are closely related in that they both focus on concerns regarding a potential future threat or danger (Barlow, 2002). More specifically, fear is a reaction to a specific, potentially observable danger (e.g. becoming a burden). In contrast, general anxiety symptoms such as worry, apprehension, and nervousness are more diffuse and relate to future-oriented concerns (Barlow, 2002). Thus, it is possible that fear of being a burden is more prominent among individuals with anxiety because of the overlapping focus on potential future events; however, previous research on fears among older adults found similar sized associations of a measure of fear with measures of anxiety, depression, and worry (Kogan & Edelstein, 2004). Another possibility is that fear of being a burden may lead to behavior and cognitive changes in an individual that could bring about anxiety and depression. For instance, fear of being a burden may lead to withdrawing from relationships and from reliance on others, which could lead to depression. Further, fear of becoming a burden might lead to increased worry about the future and increased health anxiety. Future research should examine the temporal relationship of fear of being a burden to depressive and anxiety symptoms to understand potential mechanisms.

Furthermore, we examined the extent to which health status is associated with fear of being a burden. Specifically, good health significantly contributed to fear of being a burden over and above excellent, fair, and poor health. This finding is surprising given the literature on poor health, including functional impairment and physical illness, being associated with perceived burdensomeness in late life (e.g. Cukrowicz et al., 2011; Fox, 2020). It may be that older adults who perceive themselves as having good health are more likely to fear becoming a burden in the future, compared to older adults with poor health, who may already require more assistance and may already have experience coping with health-related decline. Alternatively, it may be that those who are afraid of being a burden may be more cautious about their physical health which may in turn contribute to better health.

The demographics of our sample, with the majority being older male Veterans (64%), suggests that help-seeking stigma (Hom et al., 2017) and masculinity (Apesoa-Varano et al., 2018) warrant further consideration to better understand fear of

being a burden. Beliefs associated with masculinity such as self-reliance, resilience, and toughness (Courtenay, 2000) can empower aging men to take control of their fate by engaging in proactive behaviors to improve health (Tannenbaum & Frank, 2011) and conversely, to view suicide as an act of determination and strength (Apesoa-Varano et al., 2018). Our findings dovetail with the finding from Morin et al. (2019) that older patients in the minimal comorbidity group were more likely to make a fatal suicide attempt compared with other groups, including patients in the high comorbidity group, who were least likely to attempt fatally. These findings highlight that older adults with minimal medical comorbidity may be at greater risk than otherwise thought and therefore should also be screened for the presence of factors that precede attempts, such as fear of being a burden.

Given the multi-faceted nature of perceived burdensomeness, social relationships are an important facet to consider. In our study, marital status did not significantly contribute to our findings. It may be that because much of our sample (67.2%) were either single, separated, divorced, or widowed, marital status did not have a significant impact on the fear of being a burden. Alternatively, it is possible that our sample did not have the power to detect an effect of marital status on fear of being a burden. In contrast with our findings, previous research has shown that family and social support are important factors related to perceived burdensomeness (e.g. Jahn et al., 2013; Jahn & Cukrowicz, 2011). In a study looking at the influence of social support on perceived burdensomeness and hopelessness, Jeon and Heo (2019) found that family support reduced suicidal ideation among older adults through the mediating role of perceived burdensomeness. This finding suggests that interventions targeting the improvement of an older adult's social network may be helpful in reducing the perception of being a burden, which may indirectly lessen the risk of suicidal ideation. Future studies should further examine the role of perceived quantity and quality of social support on the presence of fear of being a burden.

Some limitations of the study should be noted. First, the sample was largely Caucasian, male Veterans, and as such, the present findings may not generalize to more heterogeneous groups. Although this is a limitation that should be addressed in future studies, it is important to note that older males are disproportionately affected by suicide (National Institute of Mental Health, 2019). Not only do men die by suicide more often than women, but Veterans are at an increased risk compared to the general population (Hedegaard et al., 2020). Second, although the present study could have benefitted from a larger sample size, a minimum of 50 cases per predictor variable is deemed sufficient (Aldrich & Nelson, 1984). Third, the four-year timeframe in which the data were collected may be considered a limitation due to the potential of time serving as a confounder or moderator of associations. Fourth, our variable of interest, fear of being a burden, suggests that the fear precedes the state of being a burden. This conceptualization differs from other studies that generally use the terminology 'perceived burdensomeness,' implying the perception of currently being a burden. While we did not directly measure perceived burdensomeness, examining the precursor to the state of being a burden can inform preventative efforts. Therefore, future studies should explore the overlap of fear of being a burden and perceived burdensomeness by including fear of being a burden in longitudinal studies to examine trajectory.

To conclude, the findings from this study add to the growing literature examining factors that contribute to fear of being a burden and ultimately late-life suicidal ideation. Future research should further investigate the role of anxiety on fear of being a burden and ways of intervening to prevent the presence of perceived burdensomeness or lessen its severity, as it is a well-known risk factor for suicide. Clinically, these findings highlight the important need to accurately assess for and recognize anxiety symptoms and anxiety disorders in late life, particularly because older adults and health professionals may be more attuned to symptoms of depression and miss signs of anxiety (Pachana, 2016). A reason for this may be that anxiety symptoms often mimic side effects of medication as well as symptoms from other medical conditions. Moreover, our findings support the need for late-life suicide prevention even in the presence of minimal medical comorbidity and the absence of a depression diagnosis as highlighted by previous studies.

Acknowledgements

Views expressed in this article are those of the authors and not necessarily those for the Department of Veterans Affairs or the Federal Government.

Disclosure statement

The authors report no conflict of interest.

Funding

This study was supported by a 2014 NARSAD Young Investigator Grant from the Brain & Behavior Research Foundation (PI: Gould) and a Career Development Award (IK2 RX001478; PI: Gould) from the United States (U.S.) Department of Veterans Affairs Rehabilitation Research and Development Service.

Author's contributions

A. Alfaro and C. Gould conceptualized the research question, designed the study, conducted analyses, and drafted the manuscript. C. Carlson collected portions of the data and edited the manuscript. D. Segal edited the manuscript. C. Gould obtained funding for the research, designed the study methodology, and supervised data acquisition.

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