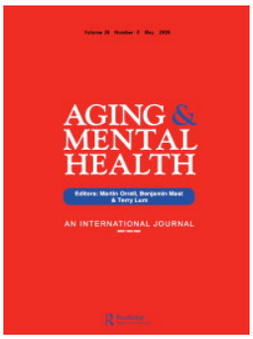

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The moderating role of age on perceived burdensomeness among U.S. adults with disabilities

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ABSTRACT

Objectives: Societal attitudes and environmental barriers may make individuals with disabilities vulnerable to mental health issues, including loneliness, perceived burdensomeness, and suicidality. Those living with physical disabilities may feel inadequate and believe their presence distresses others. Although more common with age, younger adults with physical disabilities are more likely to experience these feelings. The present study investigates the association between physical difficulties with activities of daily living (ADLs) and perceived burdensomeness while examining the moderating role of age.

Method: We used data from 721 adults aged 23–76 from the Midlife in the United States-1 (MIDUS-1) refresher and biomarker datasets.

Results: We found a positive association between one's level of physical disability and perceived burdensomeness. Age moderated this relationship, with those aged 73.4 years and above not experiencing this association.

Conclusion: These findings highlight the nuanced effects of age on this association between physical disability and perceived burdensomeness.

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Disability; aging; perceived burdensomeness; physical disability; mental health

Introduction

Perceived burdensomeness refers to the thought or feeling that one is a burden to others and is hypothesized to be associated with lower well-being and potential suicide ideation and actions (Joiner, 2007; Van Orden et al., 2010). Previous research has identified populations who are at risk for adverse health outcomes, such as depression and anxiety (Higgins Tejara et al., 2019; Horner-Johnson et al., 2021; Van Orden et al., 2010). While physical disability tends to increase with age (US Census Bureau, 2022), findings regarding age and feelings of perceived burdensomeness are mixed. For example, one study found that increased age brings greater resilience and protection from perceived burdensomeness, suggesting a negative association (Vanyukov et al. 2017). Yet, another study found that older age was positively associated with an increased sense of being a burden; however, the oldest participants were only 62 (Van Orden et al., 2006). In the present study, we seek to provide a clearer understanding of the association between one's level of physical disability and perceived burdensomeness and whether older age plays a moderating role.

Physical disability

Societal barriers present a challenge for people with disabilities (e.g. exclusion, stigma, discrimination, and ableism). In 2008, the Americans with Disabilities Act (ADA) redefined a person with a disability as a physical or mental impairment substantially limiting one or more major life activities. In 2023, 61 million adults were living with a disability in the United States (Centers for Disease Control and Prevention, 2023), representing 26% or approximately one in four adults in the United States who have a disability and 12.6% who have a mobility disability (serious difficulty walking or climbing stairs; CDC, 2023). Disability status is not a monolithic identity but a highly diverse and multidimensional concept encompassing various conditions, experiences, and functional limitations (World Health Organization, 2001). Further, the ADA asserts that barriers to employment, education, transportation, public services, and technology undermine efforts by people with disabilities to complete educational and employment goals and to be fully contributing members of society (ADA, 2008).

The World Health Organization (WHO) (2001) further describes the many barriers faced by individuals with disabilities. These include inaccessible physical environments (lack of access); absence of assistive technology; attitudinal barriers (stigmas and stereotyping); or insufficient systems and policies that may obstruct full societal participation. According to Molton and Yorkston (2017), successful aging for individuals with physical disabilities is characterized

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by social connectedness, access to quality healthcare to maintain current physical health, autonomy, resilience, and adaptation, empowering them to lead relatively comparable lives to individuals without disabilities. In sum, without appropriate accommodations, individuals with physical disabilities often face multiple barriers that may interfere with full functioning and participation in all aspects of daily living.

Societal perceptions of physical disability are also associated with the frustration and sadness of individuals with disabilities and feelings that they are a burden to their close interpersonal connections (Jenkins & Graf, 2020; Mazur, 2008). Such feelings appear to contribute toward adverse mental health outcomes, including anxiety and depression (Mazur, 2008). Indeed, adults with disabilities are five times as likely to report frequent mental health distress compared to adults without a disability (Cree et al., 2020), and those with various types of functional disabilities are more likely than non-disabled individuals to experience suicidal ideation (Marlow et al., 2022). These barriers and societal attitudes may leave individuals with disabilities more vulnerable to mental health struggles, including suicidality (Higgins Tejara et al., 2019; Jones & Lollar, 2008; Khazem et al., 2021; Lunsky et al., 2012).

The concept of ability

Historically, the concept of disability has shifted from viewing individuals as objects of pity and societal burdens to a more nuanced understanding of ability. The concept of ability is multifaceted, encompassing various types, measurements, and influences. For the purposes of this study, we focus specifically on functional impairment, operationalized as self-reported limitations in the activities of daily living (ADL), which are essential tasks that individuals perform daily to maintain independence and quality of life. The ADLs encompass basic self-care activities, instrumental activities that support independent living, and extended activities that promote social engagement and personal growth (Edemekong et al., 2025; Kim & Lee, 2025). For example, the ADLs include fundamental self-care tasks such as bathing, dressing, eating, transferring, toileting, and managing continence, which can be vital for physical well-being and serve as a primary measure of functional independence, especially for older adults and individuals with chronic health issues (Edemekong et al., 2025; Kim & Lee, 2025). In research, the ADLs can provide a universal metric for understanding ability by positioning ability not as a fixed state but as a spectrum of performances. Thus, ability is not merely the absence of impairment, but the effective interaction between an individual's physical disability and their environment.

Perceived burdensomeness

Perceived burdensomeness refers to the belief that one's condition or presence burdens others. Much of the past literature has focused on perceived burdensomeness and risks of family members and caregivers of people with chronic illness or disabilities (e.g. Hoyle et al., 2021; Huo & Kyungmin, 2023; O'Dwyer et al., 2018). However, fewer studies have directly examined perceived burdensomeness from the perspective of the individual living with a functional impairment. Research that focuses on the role perceived burdensomeness plays in the development of suicidal thoughts and behaviors (Gager et al. 2024; Joiner, 2007; Van Orden et al., 2010). In this context, perceived burdensomeness is often viewed as having two dimensions—liability (e.g. the sense of being a burden on others) and self-hate (e.g. low self-worth). On the other hand, some research has also focused on individuals with disabilities and their feelings about their dependence on their caregivers, which leads to feelings of being a burden (Cousineau et al., 2003).

Perceived burdensomeness may include feelings that one's presence, actions, or needs impose excessive demands that a sense of guilt or shame may accompany, a perception of uselessness, lack of reciprocation, and social isolation (Cousineau et al., 2003; Dempsey et al., 2012; McPherson et al., 2007). Research in this vein finds that both feelings of dependence on a caregiver and perceived burdensomeness are multidimensional constructs that include feelings of frustration, worry, guilt, and other adverse effects that emerge when an individual feels responsible for their caregiver's hardships (Cousineau et al., 2003). Using qualitative interviews, Cousineau and colleagues expanded the literature on patient-perceived burdensomeness in the caregiving and helping literature. Specifically, they identified patients' empathetic concern for their caregivers' health, such as the physical strain of caregiving. Therefore, those receiving care feel a sense of frustration and guilt from their dependence on a caregiver and feelings of burdensomeness from empathy for caregivers' health.

Various micro (e.g. support and self-esteem) and macro (e.g. societal attitudes) factors may also influence the relationship between physical disability and perceived burdensomeness. At the micro level, the perception of burdensomeness has been shown to vary among individuals with physical disabilities based on their personal experiences and self-esteem. For example, low levels of self-esteem related to one's body image among individuals with physical disability, using the Physical Disability Sexual and Body Esteem Scale (see Taleporos & McCabe, 2002), were associated with greater perceived burdensomeness (Khazem et al., 2024). Another micro-level factor

that may play a role in the relationship between physical disability and perceived burdensomeness is social support. A strong social support system can buffer against depression and perceived burdensomeness, especially since people with disabilities report higher loneliness and social isolation rates than their non-disabled peers (Emerson et al., 2021). For example, family, friends, and communities that offer emotional support and opportunities for physical and social engagement may help individuals with disabilities feel valued and happy (Kim et al., 2021). Further, a longitudinal study (over six years) of individuals with disabilities found that those who lost social support reported higher levels of depression than those who gained social support (de la Vega et al. 2019). However, in some cases, both the person with the disability and the caregiver can experience feelings of being a burden (Geng et al., 2017). In sum, mixed findings highlight the need for continued research and the importance of prioritizing both the individual's needs and the caregiver's role to ensure a successful outcome.

At the macro level, research has shown that negative societal attitudes, such as discrimination and stigmatization, can contribute to feelings of burdensomeness among individuals with physical disabilities (Khazem et al., 2021). Similarly, perceived burdensomeness has been linked to feelings of depression (Dempsey et al., 2012), and has been shown to mediate the relationship between functional impairment and depressive symptoms, where individuals with the greatest feelings of perceived burden were also the most likely to experience depression (Dempsey et al., 2012). Although our current dataset is limited in capturing macro-level perceptions of individual feelings of burden, it is important to acknowledge the impact of feeling that one is a burden on mental health in a larger social context.

Role of age

Despite individuals generally experiencing increasing physical disability with age, some literature suggests that older adults are less likely to experience perceived burdensomeness than their younger counterparts (Cigna, 2020; Vanyukov et al., 2017). Specifically, a recent study conducted by Cigna (2020) found a small yet significant correlation between autonomy and perceived burdensomeness for younger but not older respondents in their sample. Khazem et al. (2021) reported that older individuals tend to have lower levels of self-perceived burdensomeness compared to younger individuals with physical disabilities. In other words, age is negatively correlated with perceived burdensomeness (Khazem et al., 2021). More research is required to understand the role of age in the association between the level of physical disability and perceived burdensomeness. Specifically, this research aims to better understand the underlying reasons why younger people appear to feel a greater sense of self-perceived burden compared to their older counterparts, despite generally experiencing lower levels of physical disability.

Theoretical underpinnings: life course theory

The present study is grounded in life course theory. Elder (1975:1998) posited that a life course approach needs to include the timing of life events, location, changing social contexts, human agency, and how the past shapes the future of an individual's development. Life course theory posits that an individual's life experiences and environments shape one's development and life trajectory over time; it emphasizes how developmental stages, social roles, and normative expectations shape the meaning individuals attach to health-related experiences across different ages (Elder, 1998; Elder et al., 2003). Furthermore, from a life-course perspective, the onset or progression of functional impairment constitutes a significant life transition that may manifest suddenly (e.g. following an injury) or emerge incrementally over time. In addition, health trajectories can be influenced by the timing of significant life events such as career, natural disasters, marriage, or pregnancy (Elder, 1998). Recent research that uses a life course perspective suggests that younger adults have greater expectations for autonomy than older adults (Clarke & Latham, 2014; Zullo et al., 2022) as older adults are more likely to experience functional limitations (i.e. physical impairments/disabilities) compared to their younger counterparts (Manini, 2011).

The present study

Previous research on disability and perceived burdensomeness provides a theoretical background to understanding why people with disabilities may feel they are a burden to others because they may require special care, access, or accommodations as compared with non-disabled persons. Moreover, life course theory explains that with age comes unique challenges and life experiences, which may in turn influence perceptions of perceived burdensomeness differently for people as they age (Romo et al., 2013). We aim to investigate the association between the level of physical disability (as measured by impediments to activities of daily living/ADLs) and perceived burdensomeness, as well as the role of age in this association.

Based on the reviewed literature, we propose the following hypotheses:

H1: There will be a positive association between the level of physical disability and perceived burdensomeness. Literature investigating this is multifaceted, given the diversity among those living with physical disabilities (Bixby, 2023; Cousineau et al., 2003; McPherson et al., 2007). Nevertheless, there appears to be a consensus that as one's level of physical disability increases, so does perceived burdensomeness (Khazem et al. 2015; Khazem et al., 2021; Mournet et al., 2020).

H2: Age will moderate the association between the level of physical disability and perceived burdensomeness such that the association will be weaker with increasing age. Although previous literature regarding the association between age and perceived burdensomeness has been mixed, our sample includes adults up to 14 years older than Van Orden et al. (2006), who found a positive association. In line with Vanyukov et al. (2017), we argue that older adults may develop a form of resilience against feelings of perceived burdensomeness as they age since these experiences are often considered more normative in older adulthood.

Method

Participants

We analyzed data from the Midlife in the United States refresher (MIDUS-1 Refresher) and the MIDUS Refresher Biomarker studies, collected from 2011 to 2014. The MIDUS-1 Refresher study was designed to replenish the original MIDUS-1 baseline cohort (collected from 1995 to 1996), while the MIDUS-1 Refresher Biomarker study included additional biological assessments. We selected these datasets in favor of more recent waves because they were the only waves to include items that have previously been used to create measures of perceived burdensomeness (Gager et al. 2024). The MIDUS is sponsored by the National Institute on Aging (5P01AG020166) and is conducted by the University of Michigan. Beginning in 1995, the MIDUS series is a data collection with the primary objective of identifying the major biomedical, psychological, and social factors that permit some people to achieve good health in their adult years (Midlife in the United States (MIDUS), 2022). Both samples used de-identified data, therefore, IRB approval was not required. These data were accessed *via* the Inter-University Consortium for Political and Social Research (ICPSR) database, run by the University of Michigan. Although the Refresher Biomarker and the Refresher studies together yielded 3,694 participants, our final analytic sample was 721 due to missing data, primarily from the perceived burdensomeness scale created for the present study (Gager et al. 2024; Geng et al. 2017).

Measures

Level of physical disability

Following the Wallace and Herzog (1995) 5-point functional limitations scale, the level of physical disability was measured using the 10 physical health limits included in the MIDUS-1 refresher dataset. Questions asked "How much does your health limit you in…" on a 4-point Likert-type scale (1= a lot, 4= not at all). The ten questions address limitations related to lifting or carrying groceries, bathing/dressing, climbing several flights of stairs, one flight of stairs, bending/kneeling/stooping, walking more than one mile, walking several blocks, walking one block, vigorous activity, and moderate activity. These questions were first recoded as binary measures (0 = no difficulties at all and 1 = at least a little difficulty). We added these responses together to create a 0 to 10 scale, with greater values indicating more physical limitations. Participants reported a mean level of 3.369 ($SD = 3.463$).

Perceived burdensomeness

Following Gager et al. (2024), perceived burdensomeness was constructed using 8-items selected because of their theoretical applicability to the construct of perceived burdensomeness (Van Orden et al., 2010). The scale, as composed, has excellent face validity and acceptable internal validity (Cronbach's $\alpha = 0.77$; Nunnally & Bernstein, 1994). Two items in this scale were drawn from the Mood and Symptom Questionnaire (MASQ), five items were from the self-esteem questionnaire (Rosenberg, 1965), and one question was from the self-control questionnaire (Gross & John, 2003; Markus & Kitayama, 1991). These items were chosen based on their theoretical relevance to the construct of perceived burdensomeness. Items included in the MASQ were measured on a Likert-type scale ranging from (1) not at all likely to (5) extremely likely. Items included in the self-esteem questionnaire were measured on a Likert-type scale ranging from (1) strongly agree to (7) strongly disagree. The single item in the self-control scale was measured on a Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. All items were standardized and, when necessary, reverse-coded so that high scores indicated *greater* feelings of perceived burdensomeness. Sample items included: "felt worthless," "felt inferior to others," "certainly feel useless at times," and "worry that I am a burden on others." We selected the items measuring perceived burdensomeness based on their alignment with Van Orden et al. (2010) conceptualization of the construct. The mean ($M = 0.001$, $SD = 0.692$) being so close to zero reflects its construction from standardized items, rather than low levels within the sample. Overall, the distribution was positively skewed

(maximum 3.20 above the mean), indicating higher levels of perceived burdensomeness.

Age

Age was reported in years. Participants reported a mean age of 50.36 ($SD = 14.303$).

Covariates

Respondents' education, gender, race, ethnicity, and partnership status were included in the model as covariates. Education was reported as 0 (*high school or less*) or 1 (*at least some college*). Gender was reported as 0 (male) or 1 (*female*). Race was reported as 0 (*non-White*) or 1 (*White*). Ethnicity was reported as 0 (non-Hispanic) or 1 (Hispanic). Partnership status was reported as 0 (not married or cohabitating) or 1 (married or cohabitating). In Table 1, we show descriptive statistics for all our measures. Respondents had a mean of 3.4 out of 10 for the level of physical disability. Participants were predominantly White (82.4%) and non-Hispanic (94.5%), and their mean age was 50.4 years old. 52.4% of respondents were women, 69.2% were partnered, and 76.8% reported at least some college education. Means and standard deviations for all study variables, including descriptive statistics and correlations, are provided in Table 1.

Plan of analysis

The present study seeks to explore the association between the level of physical disability and perceived burdensomeness, and the moderating role of age on this association. All analyses were conducted on SPSS v. 26 and applied PROCESS macro v. 4.2 (Hayes, 2017). Covariates entered into the model included partnership status, race (White/non-White), ethnicity, education (no college/at least some college), and gender, while perceived burdensomeness was entered as the independent variable, age as the moderator, and thwarted belonging as the dependent variable. Any significance of the independent variable (perceived burdensomeness) indicates a main effect. A significant interaction between the independent and moderating variables (in this case, perceived burdensomeness and age, respectively) shows a moderating effect, as evaluated by a 95% CI, 1,000 times (Hayes, 2017). To further assess Hypothesis H_2, the Johnson-Neyman technique was used to probe the significant, continuous moderator of age at ±1SD. This technique sheds light on the significance of the interaction term (Hayes, 2017).

Results

As mentioned, of the original 3,694 respondents, 2,956 were excluded in our analytic sample after excluding cases with missing data on perceived burdensomeness. To assess for potential bias from said missingness, we compared the excluded with included respondents on sociodemographic characteristics. Additionally, we compared physical disability levels between the full original sample and the reduced analytic sample (after excluding cases with missing perceived burdensomeness data) using an independent samples t-test. Included respondents reported higher physical disability ($M = 2.99$, $SD = 3.28$) than those excluded from analytic sample ($M = 3.52$, $SD = 3.52$), $t(2{,}544) = -3.59$, $p = 0.001$, $d = -0.15$, 95% CI [−0.24, −0.07]. Although statistically significant, the effect size was small, suggesting minimal substantive differences between groups.

To address Hypothesis 1, we conducted a simple moderation analysis using the PROCESS SPSS Macro Model 1 tool by Hayes (2017). Functional limitations was entered as the independent variable, perceived burdensomeness as the dependent variable, and age included as the continuous moderator. Partnership status, race, Hispanic origin, level of education, and sex were included in the model as covariates. The overall model was significant ($F(8, 712) = 15.35$, $p < 0.001$, $R^2 = 0.147$), with results showing that as physical disability increases, so does perceived burdensomeness ($\beta = 0.067$, $t(712) = 8.214$, $p < 0.001$). Cohen's f^2, calculated by dividing r-squared by 1 minus r-squared, was a 0.17 and is indicative of a moderate effect of our overall model (Cohen, 1988).

Table 1. N, Means, standard deviations, ranges, and pearson correlation matrix of variables.

Variables	*N*	M	SD	Range	1	2	3	4	5	6	7	8
Key variables												
1. Level of PD	2,546	3.369	3.463	0–10	1							
2. PB (Standardized)	738	0.001	0.692	−0.82-3.20	0.215**	1						
3. Age	3,694	50.36	14.303	23–76	0.341**	−0.204**	1					
Covariates		%										
4. Partnership Status	3,577	69.2		0–1	−0.202**	0.079*	−0.062**	1				
5. Race (White)	3,552	82.4		0–1	−0.031	−0.007	0.126**	0.112**	1			
6. Hispanic	3,569	94.6		0–1	0.025	0.05	0.102**	−0.001	0.236**	1		
7. Education (Some College)	3,570	23.2		0–1	0.258**	0.083*	0.112**	−0.067**	−0.02	−0.016	1	
8. Sex (Female)	3,694	52.4		0–1	0.141**	0.014	−0.013	−0.181**	−0.076**	−0.034*	0.012	1

PB = perceived burdensomeness; Level of PD = level of physical disability. *$p < 0.05$, **$p < 0.01$, *$p < 0.05$, **$p < 0.01$.

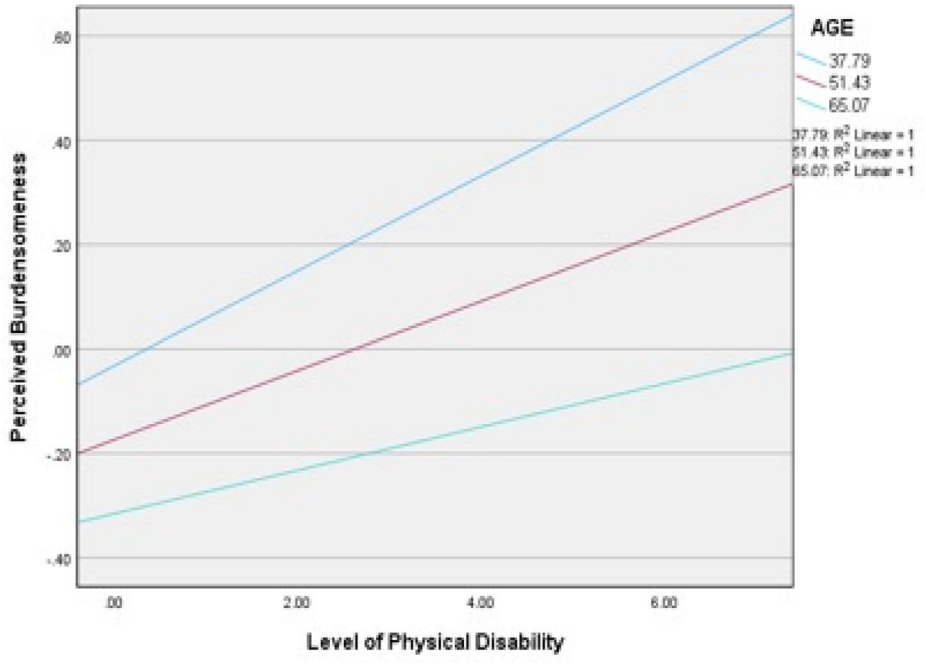

Figure 1. Conditional effects of level of physical disability on perceived burdensomeness at values of age as a moderator.

Table 2. Summary of moderated regression analysis for perceived burdensomeness.

					95% C.I.	
	Estimate	SE	t	*p*	Lower	Upper
Constant	0.193	0.171	1.131	0.259	−0.142	0.529
Physical Disability	0.160	0.033	4.909	<0.001	0.096	0.224
Age	−0.10	0.002	−4.253	<0.001	−0.015	−0.006
Physical Disability*Age	−0.002	0.001	−3.126	0.002	−0.003	−0.001
Partnered	−0.080	0.054	−1.49	0.137	−0.186	0.026
Race (White)	0.102	0.065	1.58	0.115	−0.025	0.229
Hispanic	0.157	0.119	1.313	0.19	−0.078	0.391
Education (Some College)	0.124	0.072	1.72	0.086	−0.018	0.266
Sex (Female)	−0.057	0.05	−1.143	0.253	−0.154	0.041
Conditional effects of level of physical disability on perceived burdensomeness at values of age (in years) as a moderator						
−1 SD (37.789)	0.091	0.013	7.316	<0.001	0.067	0.116
Mean (51.429)	0.067	0.008	8.214	<0.001	0.051	0.082
+1 *SD* (65.069)	0.042	0.01	4.157	<0.001	0.022	0.061

Model Fit Statistics: F (8, 712) = 15.35, $p < 0.001$, model explained between 14.7% (R-squared) and 38.4% (R) of the variance in perceived burdensomeness. Addition of interaction effect explained and additional 1.17 of the variance in perceived burdensomeness (R-square change = 0.117, $p = 0.002$).

Thus, we found support for Hypothesis H1. Table 2 presents the summary of the moderation analysis.

The interaction between functional limitations and age was significant ($F(1, 712) = 9.769$. $p = 0.002$, R^2 change = 0.012), indicating that age moderated the association between functional limitations and perceived burdensomeness (β = 0.002, $t(712) = -3.126$, $p < 0.002$). Simple slope analyses revealed that at younger ages (1 *SD* below the mean or 37.789 years), functional limitations predicted perceived burdensomeness (β = 0.091, $t(712) = 7.316$, $p = 0.001$). This association remained significant at the mean age (51.4 years; β = 0.067, $t(712) = 8.214$, $p < 0.001$) and at older ages (1 *SD* above the mean or 65.068; β = 0.042, $t(712) = 4.157$, $p = 0.001$). However, the Johnson-Neyman analysis revealed that the conditional effect of functional limitations on perceived burdensomeness was statistically significant only for those below 73.4 years, thus supporting Hypothesis H2. See Figure 1 for an illustration of the conditional effects and full results from the moderated regression analysis in Table 2.

Discussion

Drawing on life course theory, the present study examined the moderating effects of age on the association between the level of physical disability and feelings of perceived burdensomeness. We found that after controlling for sociodemographic characteristics such as sex, race, ethnicity, and level of education, those with higher reported functional limitations also reported higher perceived burdensomeness. This finding is in line with previous research, which has suggested that increased levels of physical disability may contribute to increased feelings of being a burden as a result of increased caregiving needs (Cousineau et al., 2003; Dempsey et al., 2012; Khazem et al. 2015; Khazem et al., 2024; McPherson et al., 2007; Pederson & Brookings, 2018).

In addition, age plays a role in this relationship. Moderation analysis (PROCESS Macro) and the use of the Johnson-Neyman technique provided evidence for age-based differences in perceived burdensomeness. Specifically, younger respondents with disabilities reported a stronger link between functional limitations and perceived burdensomeness, while

older respondents reported a weaker link. This also coincides with previous literature that found younger individuals with physical disabilities experience greater levels of perceived burdensomeness than older counterparts (Khazem et al., 2021; Russell et al., 2009). This finding provides more context regarding the connection between functional limitations and perceived burdensomeness and may lend support to the notion that aging buffers against negative self-perceptions (Lutz & Fiske, 2017; Settersten, 2003). For example, respondents under the age of 73 years reported a stronger and positive association between the level of physical disability and perceived burdensomeness compared to respondents 74 and older. Another possible explanation for this moderation finding is that aging comes with the expectation–and thus, normalization–of functional limitations (Chatterji et al., 2015; Lutz & Fiske, 2017; Settersten, 2003). As such, older adults may be less likely to consider these limitations as a source of strain and burden with their support system. Indeed, by framing physical decline as a normative part of aging, older adults may internalize less stigma around needing assistance. In contrast, younger individuals with disabilities, facing societal pressures to be independent, may feel more acutely burdensome.

Strengths and limitations

The present study has several strengths. Our findings provide greater insight into the association between physical disability and perceived burdensomeness, which has been called for in previous literature (Khazem, 2018; Khazem et al. 2015). Using moderated regression with the Johnson-Neyman technique allowed for a more precise identification of how age moderates the association between functional limitations and perceived burdensomeness, including a possible age-related transition point (Hayes, 2017; Lutz & Fiske, 2017; Vanyukov et al., 2017). Additionally, the inclusion of relevant sociodemographic covariates (race, ethnicity, education, and partnership status) strengthened internal validity by accounting for potential confounding factors (Kraemer et al. 2001). Using data from a large-scale dataset such as the MIDUS afforded the ability to investigate a broad age range, with findings aligning with life course theory by reinforcing the notion that societal expectations shape disability experiences differently across age groups (Elder et al., 2003).

Despite the strengths, the study has several limitations. Specifically, we were limited to using a cross-sectional design, which prevents causal inferences because the items used for the perceived burdensomeness measure were not included across multiple waves of MIDUS data. Longitudinal data may clarify whether aging reduces perceived burdensomeness, the duration of functional limitations, and whether cohort effects are at play (Hofer & Piccinin, 2009). Moreover, our sample had a maximum age of 76 years. Future research should look to leverage samples with a wider age range to investigate its moderating role more broadly. Our sample was also primarily White (82.35%) and non-Hispanic; therefore, our sample is limited in cultural diversity, raising questions about generalizability, as perceptions of disability and aging vary across sociocultural contexts (Kagawa-Singer et al. 2010). Additionally, though we had a moderate effect based on model results, we cannot say with certainty whether this will translate to clinical significance.

Finally, the study uses the ADLs as a proxy for physical disability, which can face several challenges, including cultural limitations, subjectivity, and environmental factors that impact functional performance and individuals with physical disabilities. The study also focuses solely on physical disability, leaving open whether similar patterns apply to cognitive or psychiatric disabilities (Phelan et al. 2000). Our choice to focus on physical disability status is intentional, given the diversity of disabilities. Concentrating on physical disability exclusively allows for a more detailed exploration of the association between physical disability and perceived burdensomeness. Future studies may consider exploring the association between the level of disability and perceived burdensomeness across multiple disability identities/categories' to understand their unique connections.

Implications and future directions

In our research, we examined the relationship between perceived burdensomeness and physical disability and the moderating role of age. Using age as a moderator in the relationship between physical disability and perceived burdensomeness highlighted the practical implications of this link for healthcare providers, policymakers, social workers, and counselors. These results highlight the need for mental health resources tailored to the developmental challenges of each age group, in line with life-course theory (Elder et al., 2003). Future research can look at the different cultural expectations that can significantly influence these perceptions, often resulting in adverse outcomes for individuals—exacerbated by social exclusion, discrimination, limited policy support, and financial strain (see Bixby, 2023; Jóhannsdóttir et al., 2022; Vadivelan et al. 2020). Future research should investigate social support, self-esteem, and societal attitudes as potential mediators or moderators, and utilize longitudinal designs to clarify how perceptions of burdensomeness shift across the lifespan and varying levels of physical disability.

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Data availability statement

Data openly available in a public repository that issues datasets with DOIs. The data that support the findings of this study are openly available in https://doi.org/10.3886/ICPSR36346.v7 and https://doi.org/10.3886/ICPSR38837.v1.

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