







BRIEF REPORT**Physical limitations and loneliness: The role of guilt related to self-perception as a burden**

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Abstract

Background: Limitations in performing physical activities have been associated with greater loneliness in older adults. This association could be moderated by maladaptive social cognition or feelings, such as guilt related to perceiving oneself as a burden. This study analyzes the effect of guilt related to self-perception as a burden on the relationship between physical limitations and loneliness in older adults.

Methods: Participants were 190 community-dwelling people aged over 60 years who did not show cognitive or functional limitations in daily life activities. We used linear regression to test the influence of guilt related to self-perception as a burden on the association between physical limitations and loneliness.

Results: The interaction between physical limitations and guilt related to self-perception as a burden was found to be significant in the explanation of loneliness, explaining 18.10% of the variance. Specifically, the relationship between physical limitations and loneliness was stronger when levels of guilt related to self-perception as a burden were high or medium than when these levels were low.

Conclusions: The findings suggest that feelings of loneliness are more frequent in people who report more physical limitations and, at the same time, report guilt for perceiving themselves as a burden. Guilt related to perceiving oneself as a burden seems to be a relevant modulator variable for understanding the effects of physical limitations on loneliness.

KEYWORDS

guilt related to self-perception as a burden, loneliness, physical limitations

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INTRODUCTION

Loneliness has been defined as a “debilitating psychological condition characterized by a deep sense of emptiness, worthlessness, lack of control, and personal threat.”¹ Having limitations in performing physical activities has been associated with greater loneliness,² which is also associated with negative health consequences.³

Physical limitations and loneliness associations could be moderated by maladaptive social cognitions, defined as attentional and cognitive biases towards negative aspects of the social context.⁴ Specifically, Masi et al.⁴ compared the results obtained in previous studies evaluating the efficacy of different interventions focused on reducing loneliness and found that the interventions addressing maladaptive social cognitions achieved greater reductions in loneliness scores. One of these maladaptive cognitions is the self-perception of being a burden, which has been defined as a “multidimensional construct arising from the care-recipient's feelings of dependence and the resulting frustration and worry, which then may lead to negative feelings of guilt at being responsible for the caregiver's hardship.”⁵

Van Orden et al.⁶ proposed that the self-perception of being a burden is a maladaptive social cognition with important harmful consequences associated with loneliness. Consistent with this hypothesis, the results obtained by Cukrowicz et al.⁷ suggested an association between the self-perception of being a burden and loneliness. Therefore, the occurrence of feelings of guilt related to self-perception as a burden⁸ (G-SPB), a maladaptive social feeling, could also be related to the appearance of feelings of loneliness.

OBJECTIVE

The main objective of this study was to analyze the relationship between physical limitations, G-SPB, and loneliness in community-dwelling older adults who did not show an explicit inability to self-perform instrumental or basic activities of daily living but may report physical limitations (e.g., climbing several flights of stairs). Considering the results of previous studies, we hypothesize that: (1) physical limitations will be positively and significantly associated with loneliness; (2) G-SPB will be positively and significantly associated with loneliness; and (3) the impact of physical limitations on loneliness will be higher for those reporting higher scores in G-SPB.

Key points

- Guilt related to self-perception as a burden is a potentially important variable for understanding loneliness in older adults.
- The association between physical limitations and loneliness is higher in older adults who report high levels of guilt related to self-perception as a burden when compared to older adults reporting medium or low levels of guilt related to self-perception as a burden.
- Older adults who experience higher levels of guilt related to self-perception as a burden may be at higher risk of feeling lonely when having physical limitations.

Why does this paper matter?

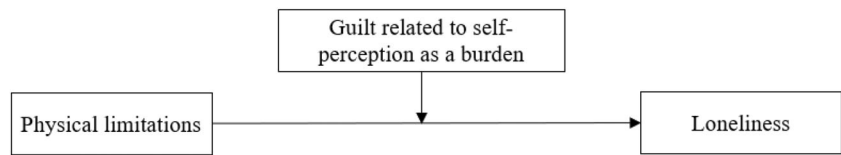
Little is known about the role of maladaptive social feelings in the association between physical limitations and loneliness. Guilt related to self-perception as a burden could be acting as a barrier to mitigating older adults' feelings of loneliness, especially for those with physical limitations. This study analyzes the role of feelings of guilt related to self-perception as a burden in the relationship between physical limitations and loneliness. The results suggest that these feelings of guilt may be a moderator in this association, facilitating the effects of physical limitations on loneliness.

METHODS

Participants

Participants were 190 community-dwelling people aged between 60 and 92 years recruited through social centers offering activities for older adults from an urban area in 2019. Inclusion criteria were: (1) being 60 years or older; (2) not showing an explicit inability to self-perform instrumental or basic activities of daily living (although they may present limitations in some physical activities, e.g., walking a kilometer or more); and (3) not using care services such as day care centers, home care, or nursing homes. All participants provided written informed consent, and the Ethics Committee of the Universidad Rey Juan Carlos approved the study protocol.

FIGURE 1 Tested model. Tested model analyzes the effects on loneliness of physical limitations, controlling for high and low scores of guilt related to self-perception as a burden after controlling for participants' age and sex.



Measures

In addition to age and sex, the following variables were measured.

Physical limitations were assessed through the Spanish version⁹ of the physical functioning subscale of the Short Form 36 Health Survey.¹⁰ This subscale has 10 items (e.g., “Does your health limit you in climbing several flights of stairs?”). Response options consisted of a 3-point Likert scale with a range from 0 (“No, not limited at all”) to 2 (“Yes, limited a lot”). Higher scores indicate more physical limitations. Cronbach’s alpha for this subscale in the present study was 0.88.

G-SPB was measured through the Guilt associated with Self-Perception as a Burden Scale.¹¹ The scale has 16 items (e.g., “I feel guilty because my family has to take on too much responsibility for me”). Response options ranged from 1 (“Never or almost never”) to 5 (“Almost always”). In the present study, Cronbach’s alpha for this scale was 0.96.

Loneliness was assessed through the Spanish version¹² of the Three-Item Loneliness Scale.¹³ The scale has 3-items (e.g., “How often do you feel left out?”). Response options ranged from 1 (“Hardly ever”) to 3 (“Often”). Cronbach’s alpha for the scale in the present study was 0.68.

Data analysis

First, a descriptive exploration of the sample’s sociodemographic variables was carried out. Second, to analyze the relationship between variables, correlation analyses were performed. In addition, to analyze the role of G-SPB in the association between physical limitations and loneliness, a regression model was tested using the PROCESS macro following the Hayes¹⁴ procedure. The model depicted in Figure 1 was tested. Participants’ age and sex were controlled. This model analyzes the effects on loneliness of physical limitations, controlling for high and low scores (mean and ± 1 SD values) of G-SPB.

RESULTS

Sample characteristics

The study sample had a mean age of 72.5 years (SD = 5.7, 77.4% women). Most participants (89.9%)

TABLE 1 Tested conditional process model

Model summary	Loneliness
Physical limitations	−0.019
Guilt related to self-perception as a burden	0.002
Interaction: Physical limitations × Guilt related to self-perception as a burden	0.005*
Sex	0.378
Age	−0.023
Model R ²	0.181**
Statistic	F(5, 184) = 8.150
Condition direct effects	
Low guilt values	0.057* (0.007–0.107)
Medium guilt values	0.078** (0.033–0.123)
High guilt values	0.122** (0.066–0.178)

Note: Unstandardized coefficients are reported, bias corrected 95% CI, 5000 bootstrap samples.

* $p < 0.05$; ** $p < 0.01$.

reported at least a minor limitation in some physical activity. The most reported limitations were performing vigorous activities, bending, kneeling, or stooping, and climbing several flights of stairs.

Correlational results

As it is shown in Table S1, positive and significant correlations were found between being a woman and more physical limitations ($r = 0.17$, $p < 0.05$) and loneliness ($r = 0.16$, $p < 0.05$). A significant association between age and more physical limitations ($r = 0.19$, $p < 0.01$) and loneliness ($r = 0.16$, $p < 0.05$) were also found. In addition, more physical limitations was associated with G-SPB ($r = 0.20$, $p < 0.01$) and loneliness ($r = 0.30$, $p < 0.01$). Finally, a positive and significant association was also found between G-SPB and loneliness ($r = 0.27$, $p < 0.01$).

Regression analysis

Figure 1 shows the tested model. While all three variables included in the moderation analysis showed significant

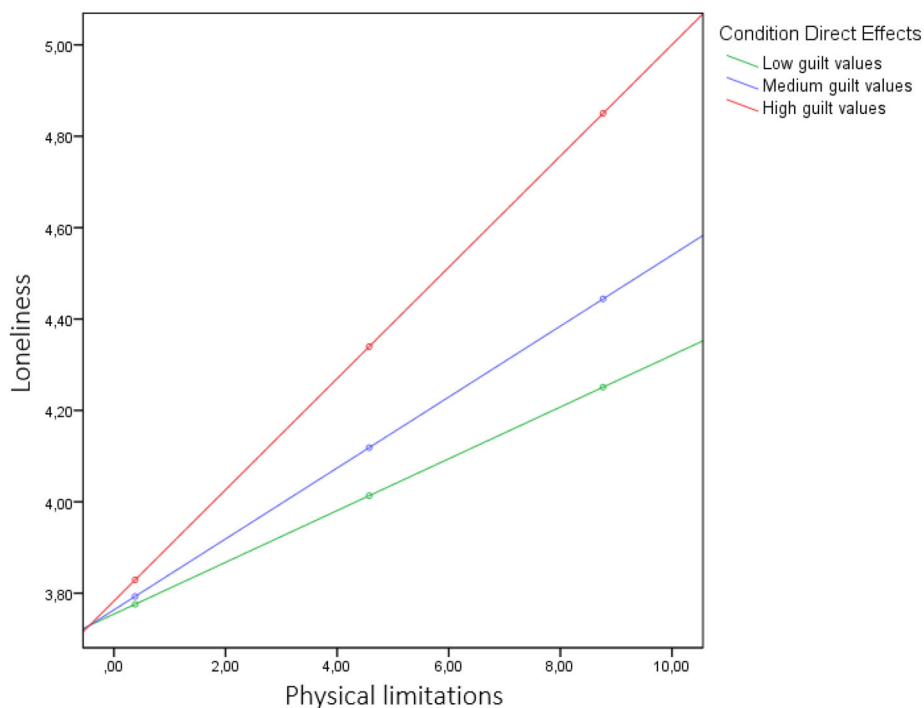


FIGURE 2 Moderating effect of guilt values on the relationship between physical limitations and loneliness. Higher physical limitations scores indicate more physical limitations.

associations in the correlation analyses, in the regression analysis shown in Table 1, a significant effect on loneliness was found only for the interaction between physical limitations and G-SPB ($b = 0.005$, $p < 0.05$), and not for the variables separately. Thus, the findings suggest a conditional effect of physical limitations on loneliness through G-SPB. Specifically, as shown in Figure 2, the association between physical limitations and loneliness is higher in those older adults who reported high levels of G-SPB ($b = 0.122^{**}$, $95\%CI: 0.066-0.178$) in comparison with those reporting medium ($b = 0.078^{**}$, $95\%CI: 0.033-0.123$) and low values in G-SPB ($b = 0.057^*$, $95\%CI: 0.007-0.107$). The model (Figure 1) explained 18.10% of the variance in loneliness ($F(5, 184) = 8.150$, $p < 0.01$, $R^2 = 0.181$).

CONCLUSIONS

This study explores the association between physical limitations, G-SPB, and loneliness in community-dwelling older adults who did not show explicit cognitive or functional limitations preventing activities of daily life but may report physical limitations (e.g., climbing several flights of stairs).

As expected, the present study suggests that both worse physical limitations and G-SPB are associated with greater feelings of loneliness. Consistent with previous research, our results show a positive and significant association between more physical limitations and loneliness.² In addition, the finding of an association

between G-SPB and loneliness is coherent with previous studies that showed the relevance of maladaptive social cognitions as a risk factor for loneliness.⁴ These findings seem to provide additional support for the importance of considering the impact of maladaptive social cognitions on feelings of loneliness. Furthermore, as hypothesized, the findings suggest that the relationship between more physical limitations and loneliness is greater when older adults report higher levels of G-SPB. These results highlight the interaction of both variables in affecting loneliness. One possible explanation for these results is that feelings of G-SPB are functioning as a barrier to seeking help to reduce the negative effects of some limitations in physical activities. For example, individuals who used to walk every day with their relatives but now have difficulties walking as much as they used to may feel guilty for perceiving themselves as a burden, which could reduce the likelihood of asking for shorter walks, making it easier to simply stop going out. This, in turn, may eventually lead to increased feelings of loneliness. These results suggest some practical implications. For example, interventions aimed at preventing and treating loneliness should include work on restructuring, not realistic beliefs about the aging process. Normalizing the appearance of physical limitations across the life span, promoting more realistic beliefs about old age, and help-seeking behaviors for activity performance could minimize feelings of G-SPB, thereby decreasing the likelihood of social isolation and loneliness.

The present study has some limitations. First, the sample size and convenience nature of the sampling process do not allow the generalization of the findings to the general older adult population. Second, the cross-sectional nature of the study does not allow causal relationships regarding the direction of the results to be inferred. Third, another limitation is the relatively low internal consistency of the loneliness measure. Future studies are needed to confirm the obtained findings using additional loneliness indicators. Finally, the present study was carried out with a sample composed of Spanish older adults, and cultural issues may have influenced the results. Some analyses suggest that perceptions of familism may mediate perceived burden¹⁵ and that familism may vary by race and ethnicity, for example, with Hispanics reporting higher familism than Whites.¹⁶

Despite these limitations, the obtained results suggest that G-SPB may play an important role in the association between limitations in physical activities and loneliness. This study is presented as a first and preliminary approach to the analysis of G-SPB in the relationship between limitations in physical activities and loneliness in older adults. Considering the negative consequences associated with loneliness (e.g., increased suicidal ideation and behavior¹⁷), the findings of this study suggest potential pathways that may contribute to understanding, preventing, and treating loneliness in older adults.

AUTHOR CONTRIBUTIONS

María del Sequeros Pedroso-Chaparro conceived, designed, and supervised the study, collected, analyzed, and interpreted the data and drafted the manuscript. Isabel Cabrera conceived, designed, and supervised the study and revised the manuscript. Carlos Vara-García analyzed and interpreted the data and revised the manuscript. María Márquez-González conceived, designed, and supervised the study and revised the manuscript. Andrés Losada-Baltar conceived, designed, and supervised the study and revised the manuscript.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to disclose.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Table S1. Descriptive data and correlation matrix. Higher physical limitations scores indicate more physical limitations.

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