



Factors associated with loneliness in community-dwelling middle-aged and older adults during the COVID-19 pandemic

Fatores associados à solidão em adultos de meia-idade e pessoas idosas da comunidade durante a pandemia da COVID-19^a

Factores asociados a la soledad en adultos de mediana edad y personas mayores de la comunidad durante la pandemia de COVID-19

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ABSTRACT

Objective: to identify the prevalence and factors associated with loneliness in community-dwelling middle-aged and older adults during the COVID-19 pandemic. **Method:** a cross-sectional study with convenience sampling, conducted in the state of Mato Grosso do Sul, Brazil. Individuals aged 45 or older and enrolled in Family Health Units were evaluated. A structured questionnaire containing sociodemographic, health and social support network questions was used for data collection. The "loneliness" dependent variable was assessed using the UCLA Brazilian Loneliness Scale. The data were analyzed using a multiple logistic regression model. **Results:** two hundred and fifteen people took part in the study and 48.8% presented loneliness scores above the median. In the final model, the factors associated with the outcome remained: being at least 60 years old and having depressive symptoms. **Conclusion and implications for the practice:** our findings suggest that older adults and people with depressive symptoms are more likely to lead lonely lives. It is necessary to monitor loneliness in Primary Health Care and to think of intervention strategies aimed at factors that may be associated with it.

Keywords: Adults; Aging; COVID-19; Loneliness; Mental Health.

RESUMO

Objetivo: identificar a prevalência e os fatores associados à solidão em adultos de meia-idade e pessoas idosas residentes na comunidade durante a pandemia de COVID-19. **Método:** trata-se de um estudo transversal, com amostragem por conveniência, realizado no estado do Mato Grosso do Sul/Brasil. Foram avaliados indivíduos com 45 anos ou mais, cadastrados em Unidades de Saúde da Família. Para a coleta de dados, utilizou-se um questionário estruturado, contendo questões sociodemográficas, de saúde e de rede de apoio social. A variável dependente "solidão" foi avaliada por meio da Escala Brasileira de Solidão da UCLA. Os dados foram analisados por meio de um modelo de regressão logística múltipla. **Resultados:** duzentos e quinze pessoas participaram do estudo e 48,8% apresentaram escores de solidão acima da mediana. No modelo final, permaneceram como fatores associados ao desfecho: ter 60 anos ou mais e apresentar sintomas depressivos. **Conclusão e implicações para a prática:** nossos achados sugerem que pessoas idosas e indivíduos com sintomas depressivos apresentam maior probabilidade de serem solitários. É necessário monitorar a solidão na Atenção Primária à Saúde e pensar em estratégias de intervenção direcionadas aos fatores que podem estar associados a ela.

Palavras-chave: Adulto; COVID-19; Envelhecimento; Saúde Mental; Solidão.

RESUMEN

Objetivo: este estudio tuvo como objetivo identificar la prevalencia y los factores asociados con la soledad en adultos de mediana edad y personas mayores que vivían en la comunidad durante la pandemia de COVID-19. **Método:** estudio transversal con muestreo por conveniencia, realizado en el estado de Mato Grosso do Sul/Brasil. Se evaluó a personas de 45 años o más, registradas en Unidades de Salud Familiar. La recolección de datos se llevó a cabo mediante un cuestionario estructurado que contenía preguntas sociodemográficas, de salud y sobre la red de apoyo social. La variable dependiente "soledad" se evaluó utilizando la Escala Brasileña de Soledad de UCLA. Los datos se analizaron mediante un modelo de regresión logística múltiple. **Resultados:** participaron 215 personas en el estudio, y el 48,8% presentó puntuaciones de soledad por encima de la mediana. En el modelo final, los siguientes factores permanecieron asociados con el resultado: tener 60 años o más y presentar síntomas depresivos. **Conclusión e implicaciones para la práctica:** nuestros hallazgos sugieren que los adultos mayores y las personas con síntomas depresivos tienen más probabilidades de ser solitarios. Es necesario monitorear la soledad en la Atención Primaria de Salud y considerar estrategias de intervención dirigidas a los factores que pueden estar asociados con esta condición.

Palabras clave: Adulto; COVID-19; Envejecimiento; Salud Mental; Soledad.

INTRODUCTION

The rapid advance of the Coronavirus Disease 2019 (COVID-19) has caused a Public Health crisis worldwide.¹ Several measures such as physical (social) distancing, quarantine and isolation of positive cases were adopted to contain spread of the virus and reduce the burden imposed on health systems.²

Although preventive and management measures are important to mitigate COVID-19 spread, there is concern that the restrictions imposed on social contacts and activities may have accentuated feelings of loneliness, especially among vulnerable groups.³

In this sense, scientific publications have already demonstrated this concern since the beginning of the pandemic.^{2,4} In addition, the World Health Organization (WHO) published an initial statement with considerations on the importance of promoting mental and psychosocial health during the COVID-19 pandemic.¹

Before the pandemic caused by the new coronavirus, loneliness was already characterized as an epidemic health problem,⁵⁻⁶ more frequently affecting older adults.⁵ Loneliness is characterized as the subjective perception of social isolation, in which a person experiences a subjective feeling of being less socially connected to others than they would like.⁷

This subjective perception results from deficiencies in social interactions, and individuals may experience increasing feelings of helplessness and emotional distress, impacting their quality of life.⁸ The definition of loneliness can also address two different dimensions: emotional and social, in which emotional loneliness refers to lack of close emotional bonds; and social loneliness is associated with absence of a comprehensive social network.⁹

Thus, a person can experience loneliness at any life stage; however, this process intensifies in old age due to the changes experienced during this phase.¹⁰ In middle-aged and older adults, loneliness is associated with factors such as lower economic status, lower schooling, poor self-rated physical health, depressive symptoms, hypertension, higher number of chronic diseases,¹¹ living alone, lack of social engagement, impaired cognition, poor self-rated health and functional disability.¹²

Furthermore, this feeling of loneliness may be related to the losses experienced during this period, such as retirement, which can break or weaken the social ties and bonds experienced at work; the issue of children moving out of the house and no longer sharing the routine as usual; and death-related losses themselves, which surround individuals with the death of spouses, family members, longtime friends, neighbors, colleagues and other people in their everyday lives.¹³

In the pandemic context, many experienced grief, suffering personal losses such as that of a spouse or a person belonging to their social network. As a consequence of grief, people may develop mental health problems and feelings of loneliness.¹⁴ In addition to the aspects related to the loss, there are biological factors such as functional and cognitive decline that can influence the onset and triggering of loneliness.¹³

In view of the above, as loneliness is a modifiable risk factor and it is currently well established in the literature that it has negative consequences for health,¹⁵ it is essential to develop effective intervention strategies to better assess it in the Primary Health Care (PHC) scope, knowing its prevalence and understanding the factors that are related to it.¹⁶

Although effectively coping with loneliness is a complex task, it has important potential to reduce morbidity and mortality in older adults and improve quality of life.¹³ Thus, research in this area should be seen as a Public Health priority,¹⁷ especially when considering that the distress associated with prolonged social isolation and quarantine can result in feelings of loneliness.⁶ However, studies addressing loneliness in middle-aged and older adults are still scarce in Brazil; therefore, it is necessary to conduct research on this topic.

In this sense and considering the aforementioned factors and the lack of studies at the national level, this research aimed at identifying the prevalence and factors associated with loneliness in community-dwelling middle-aged and older adults during the COVID-19 pandemic. Such knowledge can subsidize interventions, prevention programs and health promotion actions in order to provide the population with healthy aging.

METHOD

This is a cross-sectional and analytical research study with a quantitative approach. It was developed using the database of the "Healthcare delivery, research, education and management in Public Health" research group and followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guide.¹⁸ It was conducted at nine Family Health Units (FHUs) in a medium-sized municipality from the state of Mato Grosso do Sul, Brazil. According to the 2010 census, the city had 101,791 inhabitants, of which 16.1% were aged between 45 and 59 years old and 9.9% were older adults (≥ 60 years old). The estimated population of the municipality for 2021 was 125,137 inhabitants.

The study population consisted of middle-aged (45-59 years old) and older adults (≥ 60 years old) registered at the FHUs in the city. The sample was of the non-probability and for convenience type,¹⁹ according to the maximum number of people approached.

The inclusion criteria were as follows: being aged 45 years or older, being registered in any of the nine FHUs from the city and having the ability to answer the questionnaire (as assessed by the interviewer's perception).

Data collection was carried out through face-to-face interviews, conducted by nine trained examiners and with a mean duration of 30 minutes. The FHU teams provided a list of individuals who met the inclusion criteria and the participants were selected randomly by the researchers. The interviews were conducted between February and December 2021 at the participants' homes, following all biosafety recommendations against COVID-19.

The “loneliness” dependent variable was evaluated by means of the UCLA Brazilian Loneliness Scale (UCLA-BR), which was validated in Brazil in individuals aged from 20 to 87 years old.²⁰ It consists of 20 items with four Likert-type answer options ranging from 0 (Never) to 3 (Frequently) and its maximum score is 60 points.²⁰ UCLA-BR presents questions related to the frequency with which the participant experienced situations of social conviviality and activities developed in isolation. The higher the score in the total sum of answers, loneliness was assessed as more intense.²⁰

The independent variables were grouped into sociodemographic, health characteristics and social support network, as described below:

Sociodemographic variables: gender (male/female); age (45-59 years old/ \geq 60 years old); family income (\geq 1 minimum wage/ $<$ 1 minimum wage), marital status (with a partner/no partner); currently working (yes/no).

Social support network: number of people living in the participant’s house (lives alone/2-3 people/ \geq 4 people); number of people the participant considered close (0-4 people/5-9 people/ \geq 10 people); participation in social groups (yes/no); and participation in leisure activities (yes/no).

Health characteristics: the depressive symptoms were assessed with the Center for Epidemiological Studies - Depression (CES-D) instrument, validated in Brazil, in which the final score varies from zero to 60 points (higher scores, higher depressive symptoms). For middle-aged adults, the cut-off point for presence of depressive symptoms is \geq 16 points; in turn, the score is \geq 12 points for older adults.^{21,22} The Lawton and Brody scale was also applied to all participants; this tool assesses dependence on seven Instrumental Activities of Daily Living (IADLs) – telephone use, travel, shopping, meals, housework, medication use and money handling. The participants were considered dependent if they reported needing help (partial or total dependence) in at least one of the seven IADLs.²³

The data were entered into a Microsoft Office Excel™ spreadsheet, with double typing, validation and data checking. Descriptive analyses were performed with absolute and relative frequencies. The sample was dichotomized by the median of the outcome (i.e., loneliness) into lower (\leq 7) and higher ($>$ 7) loneliness scores. The median was used in the dichotomization to ensure balance between the groups, which increases power of the tests. Subsequently, logistic regression models were estimated between each independent variable (i.e., sociodemographic variables, social support network and health characteristics) and the outcome. Based on these models, unadjusted odds ratios were estimated with their respective 95% confidence intervals. All variables with $p < 0.20$ in the individual analyses were tested in a multiple logistic regression model. Those with $p \leq 0.05$ remained in the final model after adjustments for the other variables. Based on the multiple model, the adjusted odds ratios were estimated with their respective 95% confidence intervals. All analyses were performed using the R software, with a 5% significance level.

The project was approved by the Human Research Ethics Committee of Universidade Federal do Mato Grosso do Sul. All participants were instructed about the research, and the interviews only took place after the participants had read and signed the Informed Consent Form in two copies.

RESULTS

A total of 215 middle-aged and older adults took part in this study. It is observed that there was predominance of older adults (59.5%), female (67.9%), with family incomes of at least one minimum wage (87.9%), with a partner (54.9%) and working at the time of the evaluation (66.0%). It is also noted that 51.2% had depressive symptoms and that 43.7% were partially or totally dependent on at least one IADL according to the Lawton and Brody scale (Table 1). Among the participants, 48.8% had loneliness scores above the median.

In the final model, the older adults (OR=1.89, 95%CI: 1.02-3.52) and people with depressive symptoms (OR=6.90, 95%CI: 3.74-12.70) had a greater chance of presenting loneliness scores above the median. Among the older adults, 53.1% were in the group with scores above the median, whereas this percentage was 42.5% among the middle-aged adults. Among those with depressive symptoms, 70.0% were in the group with scores above the median, whereas this percentage was 26.7% among the others ($p < 0.05$) (Table 1).

DISCUSSION

This study evaluated loneliness in middle-aged and older adults during the COVID-19 pandemic. Professionals working in Mental Health services are reviewing their practices to ensure quality care and support both for people who already have mental health problems and for those who suffer from the psychosocial consequences of the pandemic.⁴

The results showed that approximately half of the participants (48.8%) had loneliness scores above the median. Research studies carried out with older adults since the beginning of the COVID-19 pandemic pointed to an increase in loneliness in several countries such as the United States,²⁴ the Netherlands¹⁴ and Austria.²⁵

The “Brazilian Behavioral Survey conducted during the COVID-19 pandemic” with 43,995 Brazilian adults and older adults found high prevalence of loneliness (57.1%).²⁶ Data from ConVid - Research of Behaviors (ConVid), a cross-sectional nationwide health survey carried out in Brazil, observed that half of the older adults (50.6%) reported frequent feelings of loneliness due to distancing from friends and family members during the pandemic.¹⁵

In a longitudinal analysis of the Longitudinal Study of the Health of Brazilian Elderly People (ELSI-Brasil), which involved the participation of 4,431 people aged 50 or over, the prevalence of loneliness in the pandemic scenario was 23.9%, a value that is lower than the one found during the pre-pandemic period (32.8%).

Table 1. Analyses (unadjusted and adjusted) of the associations with loneliness scores in community-dwelling middle-aged and older adults (n=215). Três Lagoas (MS), Brazil, 2021.

Variables	Categories	n (%)	Loneliness		Unadjusted OR (95%CI)	Adjusted OR (95%CI)
			≤Median n (%)	>Median* n (%)		
Sociodemographic						
Age	45-59 years old	87 (40.5)	50 (57.5)	37 (42.5)	Ref	Ref
	≥60 years old	128 (59.5)	60 (46.9)	68 (53.1)	1.53 (0.88-2.65)	1.89 (1.02-3.52)
Gender	Male	69 (32.1)	30 (43.5)	39 (56.5)	1.58 (0.88-2.81)	-
	Female	146 (67.9)	80 (54.8)	66 (45.2)	Ref	
Family income	≥1 minimum wage ¹	189 (87.9)	97 (51.3)	92 (48.7)	1.14 (0.34-3.86)	-
	<1 minimum wage	11 (5.1)	6 (54.5)	5 (45.5)	Ref	
	Not reported	15 (7.0)	7 (46.7)	8 (53.3)	-	
Marital status	No partner	96 (44.7)	52 (54.2)	44 (45.8)	Ref	-
	With a partner	118 (54.9)	58 (49.2)	60 (50.8)	1.22 (0.71-2.10)	
	Not reported	1 (0.5)	0 (0.0)	1 (100.0)	-	
Currently working	Yes	142 (66.0)	77 (54.2)	65 (45.8)	Ref	-
	No	71 (33.0)	33 (46.5)	38 (53.5)	1.36 (0.77-2.42)	
	Not reported	2 (0.9)	0 (0.0)	2 (100.0)	-	
Social support network						
Housing arrangement	Lives alone	38 (17.7)	17 (44.7)	21 (55.3)	2.00 (0.86-4.63)	-
	2-3 people	122 (56.7)	59 (48.4)	63 (51.6)	1.73 (0.90-3.31)	
	≥4 people	55 (25.6)	34 (61.8)	21 (38.2)	Ref	
Number of close people	0-4	91 (42.3)	45 (49.5)	46 (50.5)	1.12 (0.60-2.10)	-
	5-9	57 (26.5)	30 (52.6)	27 (47.4)	0.98 (0.48-2.00)	
	≥10	67 (31.2)	35 (52.2)	32 (47.8)	Ref	
Social groups	No	109 (50.7)	56 (51.4)	53 (48.6)	0.98 (0.58-1.68)	-
	Yes	106 (49.3)	54 (50.9)	52 (49.1)	Ref	
Leisure	No	131 (60.9)	60 (45.8)	71 (54.2)	1.74 (0.99-3.03)	-
	Yes	84 (39.1)	50 (59.5)	34 (40.5)	Ref	
Health characteristics						
Depressive symptoms	No	105 (48.8)	77 (73.3)	28 (26.7)	Ref	Ref
	Yes	110 (51.2)	33 (30.0)	77 (70.0)	6.42 (3.54-11.63)	6.90 (3.74-12.70)
Lawton and Brody scale	Independent	120 (55.8)	54 (45.0)	66 (55.0)	1.80 (1.04-3.11)	-
	Dependent	94 (43.7)	56 (59.6)	38 (40.4)	Ref	
	Not reported	1 (0.5)	0 (0.0)	1 (100.0)	-	

*Outcome. Ref: Reference category for independent variables. OR: Odds Ratio. CI: Confidence interval. ¹Minimum wage in effect at the time of the survey = R\$1,100.00. AIC (Empty model)=299.94; AIC (Final model)=258.02.

This can be justified because some family members could be at home more during the pandemic, which favored social interaction. In addition, multigenerational family arrangements are also frequent among people earning lower incomes in Brazil, which can play an important role in easing feelings of loneliness.²⁷

With regard to the sociodemographic variables evaluated in the study, it is noteworthy that there was an association between being an older adult and having a score above the median on the loneliness scale. As found in the literature by several authors,^{5,10,15} our results corroborate the hypothesis that older adults (60 years old

or over) have higher prevalence of loneliness than their middle-aged counterparts. In a study conducted in Latin American countries, China and India, it was described that such association was related to the social and functional effects of aging, which gradually accumulate in life events and processes that have the potential to destabilize social relations, with widowhood and onset of dependence among them, which are more likely to develop in old age.²⁸

The data collected in the COVID-19 pandemic early stages diverge from our findings, suggesting that young people were more affected by loneliness and other Mental Health problems.^{29,30}

The authors speculate that older adults have more experience with isolation and life-threatening medical situations, rendering them more resilient and providing a more positive response to these stressors.^{29,30} However, it should be considered that our research was conducted one year after the beginning of the pandemic, a period in which restrictive measures were already being relaxed. In addition, our study included adults aged 45 years old or over, and the cited papers^{29,30} also contemplated even younger individuals (at least 18 years old).

This study found an association between depressive symptoms and scores above the median in the loneliness assessment. Loneliness has a strong and consistent relationship with depressive symptoms, which is confirmed by studies conducted before^{11,17} and during^{13,31} the COVID-19 pandemic. Data from the English Longitudinal Study of Aging (ELSA) conducted with adults aged 50 years or older showed that, regardless of other social experiences, higher loneliness scores at baseline were associated with higher scores for severity of the depression symptoms during 12 years of follow-up, suggesting that interventions that reduce loneliness may prevent or mitigate depressive symptoms or make them less severe in older adults.¹³ The relationships between loneliness and depressive symptoms are reciprocal and robust and both constructs are closely related, which may help health professionals develop effective intervention methods.³²

Factors that contribute to emotional loneliness (absence of intimate and close relationships) and social loneliness (lack of broader social networks) may lead to depressive symptoms. The absence of social support systems and meaningful interpersonal connections exerts a detrimental effect on mental health, increasing susceptibility to depressive symptoms, particularly among vulnerable groups such as older adults.³³ Another factor to consider with regard to depressive symptoms is the pandemic context and its consequences on people's mental and emotional health, such as the exacerbation of depressive and anxious symptoms associated with deeper social isolation due to the physical distancing policies introduced to control the virus.³⁴

Variables related to social support networks have been shown to be associated with loneliness in other studies,^{13,17,35} but no association was detected in the current research. Overall, the quality of a person's social relationships is a stronger predictor of loneliness than the number of social contacts,¹⁷ which may explain the data from the current study, as qualitative variables related to social support were not assessed. However, it highlights its importance to protect and benefit people's emotional and psychological aspects. Social support networks alleviate the stressful situations experienced and may be the intervention mechanism in the case of loneliness for depression in older adults, contributing to positive coping with stressful events, moderating depression and loneliness.³⁵

In its bivariate analyses, a systematic review showed that some factors that reduced the risk of loneliness were more social contacts and close relationships, although no association was found in the multivariate analyses.⁹ Personal relationships provide social support and opportunities for reciprocal communication

and make people feel valued. Living and interacting with the community lead to a sense of belonging: people start to participate and collaborate in the activities carried out in society, generating opportunities to contribute and get involved with ideas.¹⁶

From a Public Health point of view and considering that loneliness is an epidemic problem and that intermittent social distancing may possibly be necessary to control resurgence of COVID-19 contagion waves,³⁶ some measures can be adopted within the PHC scope in order to reduce loneliness in the most vulnerable groups, in addition to preventing it. Preventive programs that offer support and promote social interactions have proved to be effective strategies to help older people deal with the challenges posed by quarantine.^{36,37} However, some barriers need to be overcome, such as easing access to technology and digital literacy.^{37,38} Another intervention that can reduce loneliness and also prevent depressive symptoms or make them less severe is encouraging the creation or strengthening of community actions that involve approaches based on arts and sports.^{13,33} These strategies should seek to build meaningful and quality connections, increase companionship and awaken a sense of belonging and empathetic understanding.¹³

Devising public policies regarding Mental Health care is presented as a continuous process of struggle for the organization of a service that serves individuals in an integral way.^{39,40} The Brazilian Psychiatric Reform at the end of the 1970s triggered a reorganization of the Mental Health care model, leading to an intense change in the national Mental Health system and to important improvements in care accessibility and quality. However and despite all the progress achieved, there are still important challenges to be faced.⁴⁰ It appears that the professionals' actions focus on and are restricted to the medical consultation-prescription-medication triad. In this sense, the precarious service provided to the users is evident, far below the Unified Health System (Sistema Único de Saúde, SUS) precepts and the Psychiatric Reform purposes.⁴¹

Since 2011, the Mental Health care offered by the SUS has been organized based on the Psychosocial Care Network (Rede de Atenção Psicossocial, RAPS), which is composed of several services and deinstitutionalization strategies.⁴² In the RAPS, PHC is also responsible for caring for patients with mental disorders, and this assistance is not restricted to substitute services, allowing the population to access health services in its territory in a resolute manner. Therefore, it is up to the professionals to be prepared to assist each person based on their individuality, considering their biopsychosocial dimension.⁴¹

As PHC is the place for carrying out resolute practices and care accountability, Mental Health management demands must happen through a dialectic that individualizes and contextualizes health needs. Thus, nurses working in PHC are expected to develop Mental Health actions that value the individual/family/community role in the care process.⁴³ Thus, it is important for nurses to know how to recognize the existing demand in their coverage area, offering assistance based on welcoming and active listening, which will result in the formation of bonds and relationships of trust between health professionals and users.⁴¹

CONCLUSION AND IMPLICATIONS FOR THE PRACTICE

The results showed high prevalence of loneliness among the study participants. The older adults and people with depressive symptoms were more likely to present higher loneliness scores. Knowing the factors associated with loneliness in the PHC context is essential to propose actions aimed at older people with depressive symptoms. It is also crucial to assist in strengthening public policies aimed at Mental Health, better preparing health professionals who work in PHC so that they know how to adequately meet the Mental Health demands that tend to increase in a post-pandemic scenario.

Our study has some limitations. It followed a cross-sectional design, which only provided data from one moment of the pandemic. Thus, it is not possible to state whether loneliness was an outcome of depressive symptoms or the opposite. Therefore, longitudinal research is required to better assess the psychological effects of the pandemic. We can also cite as a limitation the existence of several instruments to measure loneliness, which limits comparing the results with other studies. However, UCLA-BR (validated in Brazil) was used. Finally, our results cannot be generalized because of its convenience sample. Nevertheless, it is worth mentioning the scarcity of studies assessing loneliness, especially in the population over 45 years old, which characterizes research in this area as a Public Health priority.

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DATA AVAILABILITY RESEARCH

The contents underlying the research text are included in the article.

CONFLICT OF INTEREST

None.

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