

Frailty in younger-old and oldest-old adults in a context of high social vulnerability

Fatores associados à fragilidade em idosos jovens e mais velhos em contexto de alta vulnerabilidade social

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Abstract

Objective: To analyze the factors associated with physical frailty in community-dwelling younger-old (60 to 74 years) and oldest-old (75 years or older) adults in a region of high social vulnerability. Social vulnerability refers to the absence of or difficulty obtaining social support from public institutions, situations that hinder the realization of or deny citizens their social rights and affect their social cohesion, and the ability to react to high-risk social situations – associated health and illness. In this study, we used the São Paulo Social Vulnerability Index developed by the SEADE Foundation, which classifies social vulnerability based on socioeconomic and demographic conditions. **Methods:** Quantitative analytical study of 303 older adults. Fried frailty phenotype assessment was performed and the Mini Mental State Examination, Geriatric Depression Scale, Katz Index of Independence in Activities of Daily Living, and the Lawton Scale of Instrumental Activities of Daily Living were administered. Descriptive statistics and logistic regression were used to analyze data. **Results:** Of the older adults, 12.21% were nonfrail, 60.72% were prefrail, and 27.06% were frail. The single factor most associated with frailty was depressive symptoms (OR = 2.65; 95%CI 1.38 – 5.08) in the younger-old and illiteracy (OR = 14.64; 95%CI 1.82 – 116.51) in the oldest old. **Conclusion:** The factor most associated with frailty in younger-old adults (aged 60 to 74 years) was depressive symptoms, whereas in the oldest old (aged 75 or older), the factor most associated with frailty was being illiterate. The results of this investigation should prompt health professionals and managers to discuss and program new strategies for health promotion and prevention of factors that may aggravate frailty, respecting the differences found between older adults in early and later old age.

Keywords: frailty; aged; aging; frail elderly; social vulnerability.

Resumo

Objetivo: Analisar os fatores associados à fragilidade física de idosos jovens (de 60 a 74 anos) e mais velhos (75 anos ou mais) que vivem na comunidade em uma região de alta vulnerabilidade social. A vulnerabilidade social refere-se à ausência ou dificuldade de assistência de instituições de segurança social, situações que dificultam ou negam o exercício dos direitos sociais de cada indivíduo e afetam sua coesão social, e a capacidade de reagir a situações de risco social – associados a saúde e doença. Nesta pesquisa, foi utilizado o Índice Paulista de Vulnerabilidade Social elaborado pela Fundação SEADE, que classifica a vulnerabilidade social com base em dimensões socioeconômicas e demográficas. **Metodologia:** Estudo quantitativo transversal, realizado com 303 idosos. Aplicaram-se avaliação da fragilidade física (fenótipo de Fried), miniexame do estado mental, escala de depressão geriátrica, índice de Katz – Atividades Básicas de Vida Diária, e escala de Lawton e Brody – Atividades Instrumentais de Vida Diária, além de terem sido avaliadas as características sociodemográficas e de saúde. Para a análise dos dados foram realizadas estatística descritiva e regressão logística. **Resultados:** Dos 303 idosos, 12,21% eram não frágeis, 60,72% pré-frágeis e 27,06% frágeis. O fator associado à fragilidade nos idosos jovens foi ter sintomas depressivos (*odds ratio* — OR = 2,65; intervalo de confiança de 95% — IC95% 1,38 – 5,08), e nos mais velhos, ser analfabeto (OR = 14,65; IC95% 1,82 – 116,51). **Conclusão:** O fator associado à fragilidade no grupo de idosos jovens foi ter sintomas depressivos. No grupo de idosos mais velhos, o fator que se associou à fragilidade foi ser analfabeto. Os resultados desta investigação poderão instigar profissionais e gestores de saúde sobre as necessidades de se discutir e programar novas estratégias de promoção à saúde e prevenção de fatores agravantes da fragilidade respeitando-se as diferenças encontradas a idosos durante seu envelhecimento.

Palavras-chave: fragilidade; idoso; envelhecimento; idoso fragilizado; vulnerabilidade social.



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INTRODUCTION

Physical frailty is defined as an age-related state of physiological vulnerability resulting from a reduction in homeostatic reserve and a decrease in the body's ability to withstand stress.¹

This reduction in homeostatic reserve is a result of social, psychological, physical, or acute events, which cause additive harmful effects to the various organ systems of frail older adults. Its consequences are a change in health status—from independent to dependent, mobile to immobile, posturally stable to fall-prone, or from lucidity to delirium—after exposure to stressor events.²

The clinical management of frail or prefrail older adults must include assessment of three age-related changes: neuromuscular changes, such as sarcopenia (decreased muscle mass); neuroendocrine system dysregulation; and immune system dysfunction.¹

According to a literature review, the overall prevalence of frailty in non-institutionalized Brazilian older adults, is 24%, highest among those recruited from health services (30%) compared to community-dwelling older adults (22%).³ This high prevalence is indicative of a major public health problem, as frailty is often accompanied by multimorbidity, loss of independence, and precarious socioeconomic conditions—all factors related and similar to those which underlie social vulnerability.^{4,5}

As people age, they become more vulnerable, and their social circumstances have a particular impact on their health. Vulnerability has several definitions in the literature. All of them, however, lead to an understanding of the context of vulnerability as the integration of social, cultural, individual, family-related, political, and biological conditions. Vulnerability generally increases the risk of any given disease, condition, or harm because vulnerable individuals may lack financial resources, access to education, or other factors that can help them cope with adversity.⁶

From a social standpoint, vulnerability also refers to the absence of or difficulty obtaining social support from public institutions (such as the Unified Health System or social security in Brazil), which denies citizens their social rights (or hinders their realization).⁷ Social vulnerability can be a risk factor for poor health outcomes, and is an important aspect to be considered in health care planning and delivery.⁸

Despite research advances, especially in the diagnosis of health conditions in older adults, there is still little scientific output regarding careful assessment and identification of risk factors for frailty among elders living in a context of high social vulnerability and focused on the diversity of their characteristics; considering the differences found between

generations, this could inform planning of actions to improve quality of life and reduce health expenditures.

We thus set out to answer the following research question: are the factors associated with the frailty syndrome in younger-old adults (aged 60 to 74 years) different from those affecting the oldest old (75 years of age or older) in an area characterized by high social vulnerability? We believe that identification of these differences may facilitate implementation and improved planning of comprehensive health actions targeting the specific needs of this population.

For the purposes of this study, older adults were divided into two age groups, younger-old and oldest-old, according to the classification used by the Brazilian Institute of Geography and Statistics (IBGE). Considering that the current life expectancy of the population is 75.5 years, the division used in the present study is in line with the reality of the Brazilian aging context.⁹ Thus, the present study aimed to analyze the factors associated with physical frailty in younger-old (aged 60 to 74 years) and oldest-old (75 years or older) adults in a region of high social vulnerability.

METHODS

Ethical considerations

This is a subset of a larger study, *Ferramenta para monitoramento de níveis de fragilidade e fatores associados em idosos atendidos pelo núcleo de apoio à saúde da família (NASF) no município de São Carlos* [A tool for monitoring frailty levels and associated factors in older adults assisted by the Family Health Support Center (NASF) in the city of São Carlos], approved by the Research Ethics Committee of Universidade Federal de São Carlos, Brazil (registered on Plataforma Brasil; opinion number 860,653). All participants signed two copies of an informed consent form in accordance with local guidelines and regulatory standards for research involving human subjects.

Study design, duration, and setting

This is a cross-sectional, quantitative study. Data collection was carried out throughout the year 2015 in São Carlos, state of São Paulo, Brazil, to ascertain the level of frailty and associated factors in younger-old and oldest-old adults living in a region of high social vulnerability (according to the São Paulo Social Vulnerability Index).¹⁰

Population or sample

A total of 852 older adults were registered in the family health units covered by the NASF in the defined region of

high social vulnerability. Of these, 458 were women (54%) and 394 were men (46%). The sample size was calculated so as to ensure representativeness of the data. This was calculated from the multinomial base population of older adults. The sample consisted of 341 participants selected from among the 852 registered older adults. Selection was randomized in a stratified manner—also according to sex (female/male)—into two age groups: 60 to 74 years or 75 years and older. This stratification yielded a list of selected participants and, at the same time, a backup list for replacement of decedents, refusals, and other losses.

A total of 345 older adults were interviewed in their homes, with an average interview duration of 45 minutes. When entering the data, some questionnaires were found to be incomplete, and 42 protocols were ultimately excluded due to missing data; thus, the database for analysis contained valid responses from 303 participants.

Inclusion and exclusion criteria

The inclusion criteria were:

- registered in one of the family health units covered by the NASF in the defined region of high social vulnerability;
- ability to understand and communicate verbally.

The sole exclusion criterion was:

- any diseases or sequelae of diseases that would prevent completion of the tests (e.g., severe motor or hearing deficits or aphasia).

To ensure that enrolled participants had the required level of comprehension and did not meet the exclusion criterion, community health workers previously informed the investigators of the participants' conditions. This information was then personally confirmed by the investigators.

Study protocol

The following assessment instruments were used in data collection:

- sociodemographic profile: sex (female/male);
- marital status: cohabitating (married or otherwise), living alone (single, divorced/separated, widowed);
- Educational attainment: classified as illiterate, poorly educated (1 to 4 years of schooling), or highly educated (5+ years of schooling);
- age range: 60 to 74 years, or 75 years or older;
- health status: number of falls in the last year; body mass index (BMI)—weight (kg)/height (m²), classified as: underweight (BMI less than or equal to 22),

normal weight (BMI 22.1 to 27), or overweight (BMI above 27.1).¹¹

Physical frailty was classified using the five measures proposed by Fried for frailty phenotype assessment:

- body weight: unintentional weight loss equal to or greater than 5% of body weight in the previous year;
- exhaustion: assessed by self-report prompted by two questions from a depression screening scale. The statement that, on 3 or more days of the week, the respondent felt that everything he or she did was an effort or that he or she was unable to get going;
- handgrip strength: measured using a portable hydraulic dynamometer in the dominant hand, adjusted for sex and BMI;
- gait speed: denoted by the average time spent to cover a distance of 15 feet (4.6 m), adjusted for sex and height;
- physical activity level, assessed by the International Physical Activity Questionnaire (IPAQ), proposed by the World Health Organization (WHO) in 1998, with the objective of developing an instrument that would allow international comparison of physical activity measures. The instrument is designed to quantify the time spent in physical activities of moderate and vigorous intensity and the time spent in a seated position, both on weekdays and on weekends. The respondents were classified as: active (sum activity ≥ 5 days/week and ≥ 150 min/week) or insufficiently active (≤ 150 min/week), according to international recommendations;¹² and as frail (three or more components of the Fried frailty phenotype), prefrail (one or two components), or nonfrail (no components).¹

Cognitive performance was assessed using the Mini Mental State Examination (MMSE), developed by Folstein et al.¹³ in 1975 and translated into Portuguese by Bertolucci et al.¹⁴ The MMSI is a screening test designed to help investigate possible cognitive decline. The cutoff score was calculated according to the median values presented by each age group with one standard deviation subtracted¹⁵ and according to educational attainment: illiterate, 18 points; 1 to 3 years of schooling, 21 points; 4 to 7 years of schooling, 24 points; 7 or more years of schooling, 26 points. Participants were classified as having a normal or abnormal MMSE according to the aforementioned cutoff points.

Depressive symptoms were assessed with the Short-Form Geriatric Depression Scale (GDS), developed in 1986 by Sheikh and Yesavage¹⁶ and validated in Brazil by Almeida

and Almeida. The version used in the study consisted of 15 items. Respondents who scored < 5 points were classified as having no depressive symptoms, and those who scored 5 points or more were classified as having depressive symptoms.¹⁷

To assess functional capacity, the Katz Index of Independence in Activities of Daily Living was used, as developed by Katz et al.¹⁸ in 1963 and adapted for use in Brazil by Lino et al.¹⁹ This scale is used to assess the performance of older adults in basic activities of daily living (BADLs). A score of 1 point is assigned for each activity the subject is able to accomplish without help, among the following: feeding, bathing, dressing, grooming, mobilizing, and maintaining sphincter control. The score ranges from 0 to 6, with 6 representing independence for all BADLs. Scores were categorized dichotomously: older adults who were dependent for any of the activities were classified as dependent, while only those who were independent for all activities were classified as independent.

For instrumental activities, we used the Lawton-Brody Instrumental Activities of Daily Living (IADL) Scale as developed by Lawton & Brody²⁰ in 1969 and adapted to the Brazilian reality by Santos & Virtuoso Junior.²¹ This scale measures performance in more complex daily activities, such as meal preparation, shopping, using transportation, house-keeping, using the telephone, managing one's finances, and taking one's medications. Scores for each activity range from 1 to 3 points:

1. Dependent for or unused to the activity;
2. Requires assistance;
3. Fully independent for the activity.

The sum score ranges from 7 to 21, with 7 denoting total dependence, 8 to 20 denoting partial dependence, and only a score of 21 points denoting full independence. As for the Katz scale, older adults who were totally or partially dependent were classified as dependent and only those who were fully independent were classified as independent.

Analysis of results and statistics

For descriptive analysis, proportions or percentages were calculated for the categorical variables in each group of participants. For association analysis, univariate logistic regression and multivariate logistic regression models were used. The outcomes were: being frail and being 60 to 74 years of age; and being frail and being 75 years of age or older. It is important to note that the prefrail and frail groups were pooled in the same category (frail). The exposure variables were sociodemographic variables, health-related factors, functional capacity, cognitive performance, and depressive

symptoms. Univariate regression was performed to construct a binary logistic regression model for the outcome variables. Those variables associated with outcomes that reached $p < 0.20$ in this first stage were carried forward into the model. Next, multivariate logistic regression was performed, considering $p < 0.05$. Analyses were performed in the SPSS Version 22.0 software environment (IBM Corp., Armonk, NY, USA).

RESULTS

Table 1 presents the descriptive frequency of demographic and health variables of the 303 older adults interviewed, stratified by level of frailty. Regarding the prevalence of different frailty levels, most respondents (60.72%) were prefrail, followed by frail (27.06%) and nonfrail (12.21%). Women predominated in all three groups, as did the younger age range (60 to 74 years). Frail older adults had lower educational attainment.

Approximately 20% of nonfrail, 31% of prefrail, and 41.46% of frail respondents reported falls in the last year. In all three groups, the most prevalent self-perceived health status was fair/poor (Table 1).

Regarding the activities of daily living, both groups were largely independent for BADLs: 73% of nonfrail, 74.45% of prefrail, and 59.75% of frail respondents. For instrumental activities, 64.86% of nonfrail and 52.71% of prefrail respondents were fully independent; however, 58.53% of frail respondents were dependent for IADLs. The most prevalent BMI category was overweight (Table 1).

Factors associated with frailty

Table 2 lists the variables associated with frailty in younger-old participants of this study. In this group, having depressive symptoms was the leading factor associated with frailty (OR = 2.65; 95% confidence interval [CI] 1.38 – 5.08). In other words, older adults in this age range who experienced depressive symptoms were 2.6 times more likely to be frail.

Table 3 highlights the variables associated with frailty in the oldest old. The leading factor associated with frailty was illiteracy (OR = 14.64; 95%CI 1.82 – 116.51). In other words, older adults in this age range who were illiterate were 14.6 times more likely to be frail.

DISCUSSION

This study identified a 27% prevalence of frailty in older adults who live in a region with high social vulnerability, and shed light on some factors associated with this condition in younger-old and oldest-old age groups. There is great

TABLE 1. Profile of 303 older adults assessed for frailty. São Carlos, SP, 2015.

Category	Nonfrail n = 37 (12.21%)	Prefrail n = 184 (60.72%)	Frail n = 82 (27.06%)	Total n = 303 (100%)
Sex				
Female	21 (56.75)	107 (58.15)	45 (54.87)	173 (57.09)
Male	16 (43.24)	77 (41.84)	37 (45.12)	130 (42.90)
Age (years)				
60-74	34 (91.89)	147 (79.89)	48 (58.53)	229 (75.57)
75+	3 (8.10)	37 (20.10)	34 (41.46)	74 (24.42)
Educational attainment				
Illiterate	11 (29.72)	53 (28.80)	36 (43.90)	100 (33.00)
1 to 4 years of schooling	17 (45.94)	104 (56.52)	36 (43.90)	157 (51.81)
5+ years of schooling	9 (24.32)	27 (14.67)	10 (12.19)	46 (15.18)
Marital status				
Cohabiting	21 (56.75)	110 (59.78)	43 (52.43)	174 (57.42)
Living alone	16 (43.24)	74 (40.21)	39 (47.56)	129 (42.57)
Cognitive performance				
Abnormal	13 (35.13)	49 (26.63)	34 (41.46)	96 (31.68)
No changes	24 (64.86)	135 (73.36)	48 (58.53)	207 (68.31)
Depressive symptoms				
Yes	4 (11.11)	59 (32.06)	37 (45.12)	100 (33.00)
No	32 (88.88)	125 (67.93)	45 (54.87)	202 (66.66)
Falls				
Yes	7 (19.44)	57 (30.97)	34 (41.46)	206 (67.98)
No	29 (80.55)	127 (69.02)	48 (58.53)	97 (32.01)
BMI				
Normal	12 (32.43)	43 (23.49)	27 (32.92)	82 (27.15)
Underweight	1 (2.70)	19 (10.38)	10 (12.19)	30 (9.93)
Overweight	24 (64.86)	121 (66.12)	45 (54.87)	190 (62.91)
BADLs				
Dependent	10 (27.02)	47 (25.54)	33 (40.24)	90 (29.70)
Independent	27 (72.97)	137 (74.45)	49 (59.75)	213 (70.29)
IADLs				
Dependent	13 (35.13)	87 (47.28)	48 (58.53)	148 (48.84)
Independent	24 (64.86)	97 (52.71)	34 (41.46)	155 (51.15)

BMI: body mass index; BADL: basic activities of daily living; IADL: instrumental activities of daily living.

variation in the prevalence of frailty syndrome reported in the literature,²²⁻²⁴ due to such factors as different measurement methods (including use of different instruments), cut-off points, and age of the participants.²⁵ The socioeconomic, political, and cultural differences of elder populations also account for this variation.²⁶

In a review of the prevalence of frailty in older Brazilians which evaluated 11 studies enrolling a total of 11,898 subjects, the prevalence of prefrailty was 55%; this is consistent with the findings of the present sample, in which prefrail older adults made up the most prevalent category.³

Regarding sociodemographic data, the younger-old age group (60 to 74 years) predominated, accounting for about 75% of the participants evaluated. According to the 2010

Brazilian census, the highest prevalence of older adults residing in urban and rural areas is in the age groups 60-64 and 65-69, which corroborates our findings.²⁷

In both groups, 1 to 4 years of schooling predominated, characterizing a sample with low educational attainment – a finding similar to that of other studies included in an integrative review.²⁸ This highlights the difficulty of access to education and the lack of opportunity to which this generation of older adults was exposed, and the impact of these factors on their health condition. Limited education is associated with the roles played by these older adults; in the early 20th century, education was not prioritized. Compounding this lack of incentives, socioeconomic conditions restricted access to schools.²⁵

TABLE 2. Factors associated with frailty in younger-old adults (aged 60 to 74 years). São Carlos, SP, 2015.

Category	%	Crude		Adjusted	
		OR	95%CI	OR	95%CI
Sex					
Male	15.41	1.00			
Female	16.23	1.12	0.52 – 1.94	-	-
Educational attainment					
Illiterate	12.12	0.55	0.22 – 1.49		
1 to 4 years of schooling	17.27	0.83	0.35 – 1.96		
5+ years of schooling	19.67	1.00			
Marital status					
Living alone	14.78	1.14	0.63 – 2.14		
Cohabiting	16.76	1.00			
Cognitive performance					
No changes	13.54	1.00			
Abnormal	20.81	1.64	0.83 – 3.16	1.58	0.81 – 3.07
Depressive symptoms					
Present*	26.99	2.83	1.54 – 5.35	2.65	1.38 – 5.08
No symptoms	10.98	1.00			
Fall					
0	13.64	1.00			
1+	20.63	1.63	0.83 – 3.18	1.34	0.68 – 2.61
BMI					
Normal	18.37	1.00			
Under	13.38	0.61	0.26 – 2.29		
Over	15.38	0.83	0.41 – 1.57		
BADLs					
Independent	14.65	1.00			
Dependent	18.96	1.37	0.73 – 2.65		
IADLs					
Independent	14.24	1.00			
Dependent	17.61	1.21	0.67 – 2.36		

OR: odds ratio; 95%CI: 95% confidence interval; BMI: body mass index; BADL: basic activities of daily living; IADL: instrumental activities of daily living.

*Denotes statistical significance.

Educational attainment was strongly associated with frailty in the oldest-old group, with illiterate respondents 14.6 times more likely to be frail. Remarkably, the lower the level of education, the greater the risk of frailty. Corroborating data from previous studies reveal the association between educational attainment and frailty.^{29,30} It is known that schooling provides the population with useful knowledge and skills for health promotion, and that more educated people are better informed about the positive consequences of engaging in healthy behaviors, as they find it easier to locate, understand, and assimilate information that can be translated into changing habits.³⁰

The presence of depressive symptoms was not predominant in our sample; however, it bears noting that frail and prefrail older adults have a higher prevalence of depressive symptoms. In the present study, among the younger-old group, having depressive symptoms was associated with a

2.6-fold higher risk of frailty. This confirms the findings of prior studies on frailty in older adults.^{28,29}

Depression is considered one of the leading health problems affecting the older population.³¹ In a survey of 418 older adults carried out in the city of Uberaba, Minas Gerais, to evaluate frailty and depression, investigators found that 27.75% of frail older adults had depressive symptoms – a prevalence lower than that found in this study (45.12% for frail participants).³²

A review found that most cross-sectional studies on this topic point to a strong relationship between depressive symptoms and the frailty syndrome.³³ Negative habits, such as isolation, poor self-care, inactivity, and other behaviors that can lead to a decrease in muscle mass and strength – characteristics of frailty in older adults – mean that depressive symptoms can be implicated in this syndrome.³⁴

TABLE 3. Factors associated with frailty in oldest-old individuals (aged 75 years or older). São Carlos, SP, 2015.

Category	%	Crude		Adjusted	
		OR	95%CI	OR	95%CI
Sex					
Male	13.14	1,00			
Female	9.83	0.73	0.35 – 1.46		
Educational attainment					
Illiterate*	24,47	14.26	1.84 – 108.66	14.64	1.82 – 116.51
1 to 4 years of schooling	5.78	2.74	0.34 – 22.11	2.83	0.34 – 23.77
5+ years of schooling	2.24	1,00			
Marital status					
Living alone	15.56	2,34	1.04 – 4.34	1.93	0.86 – 4.29
Cohabiting	8,35	1,00			
Cognitive performance					
No changes	9.73	1,00			
Abnormal	14.65	1.54	0.73 – 3.39	-	-
Depressive symptoms					
Present	11.45	1,00			
No symptoms	10,97	0.91	0.42 – 2.03	-	-
Fall					
0	9.76	1,00			
1+	14.41	1.58	0.77 – 3.21	-	-
BMI					
Normal	14.64	1,00			
Under	20,35	1.43	0.46 – 4.38	1.09	0.32 – 3.62
Over	8.46	0.54	0.23 – 1.19	0.41	0.17 – 1.01
BADLs					
Independent	8.51	1,00			
Dependent	17.85	2.31	1.15 – 4.82	2,05	0.90 – 4.63
IADLs					
Independent	7.73	1,00			
Dependent	14.91	2,48	0.93 – 4.31	1.44	0.62 – 3.37

OR: odds ratio; 95%CI: 95% confidence interval; BMI: body mass index; BADL: basic activities of daily living; IADL: instrumental activities of daily living.

*Denotes statistical significance.

In this context, the frailty syndrome requires specific, complex care, with needs changing as the health conditions of older adults deteriorate.³³ Health services must deliver priority care to prefrail and frail older adults, with equity, so that all can receive adequate care that respects their differences.

Limitations of this study include the cross-sectional design, which precluded a clearer understanding of causal relationships; the sample size, which was larger in one of the two age groups; comparability with other studies in the literature using the same age groups; and the lack of previous studies conducted in a context of social vulnerability. Another factor that must be highlighted is the specificity of this sample in that it received comprehensive, personalized, multidisciplinary care from a NASF team.

This study allowed us to evaluate nonfrail, prefrail, and frail older adults, in addition to the peculiar, associative

characteristics of frailty in the younger-old and oldest-old age groups in a region of high social vulnerability. Our findings should provide health professionals with information they can use to contribute to health management, alongside managers and other team members, as well as support implementation of actions in the community for the prevention and treatment of depression, health education programs to increase awareness, and work with public health policies aimed at this population, respecting the differences found at all stages of aging.

CONCLUSION

Analysis of factors associated with physical frailty in younger-old (60 to 74 years) and oldest-old (75 years or older) adults in a context of high social vulnerability, depressive symptoms

were the predominant factor in the younger group, while illiteracy was the leading factor in the older group.

It is imperative that health professionals detect frailty in a timely fashion, with particular focus on population segments with the greatest need and limited access to public services. These findings should help health teams implement strategies aimed at prevention, diagnosis, and intervention aimed at risk factors for depression.

As for illiteracy, although it is considered a nonmodifiable factor, adult education strategies to raise awareness and highlight the importance of building reading ability in illiterate and semi-illiterate adults and older adults are increasingly relevant for groups that seek access to education at later ages, and can be an option for health professionals to address this factor.

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Conflict of interest

The authors report no conflicts of interest.

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Authors' contributions

MAAD: writing – first draft, proofreading and editing, research and conceptualization. MSZ: project management, data curation, methodology, fundraising, resources, and supervision. GAOG: formal analysis, conceptualization, data curation, methodology, software, writing – proofreading and editing. FSO: formal analysis, conceptualization, data curation, investigation, writing – proofreading and editing. ACMG: project management, formal analysis, conceptualization, writing – proofreading and editing, supervision. LK: writing – proofreading and editing, conceptualization, visualization.

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