Journal of Associated Medical Sciences 2026; 59(2): 105-112

JAMS
Journal of Associated Medical Sciences

Scopus Indexed & Thai-Journal Citation Index Centre (TCI)

Journal of Associated Medical Sciences

Journal homepage: https://www.tci-thaijo.org/index.php/bulletinAMS/index

Fall risk, fear of falling and their association with depressive symptoms among institutionalized older adults: A cross-sectional study

Bowas S, Loganathan S*, Raghuram P, Jaivignesh S

Faculty of Occupational Therapy, Sri Ramachandra Institute of Higher Education and Research (DU), Porur, Chennai, India.

ARTICLE INFO

Article history:
Received 23 September 2025
Accepted as revised 22 January 2026
Available online 4 February 2026

Keywords:
Fall risk, fear of falling, depression, institutionalized elderly, cross-sectional study.

ABSTRACT

Background: Falls, fear of falling, and depression are major geriatric syndromes that threaten independence and overall well-being. Older people living in institutions may be particularly vulnerable due to physical, environmental, and psychosocial factors. This study aimed to examine the association among fall risk, fear of falling and depressive symptoms among Institutionalized Older Adults.

Materials and methods: A cross-sectional study was carried out among 90 residents from two selected old age homes in Chennai. Participants aged more than 60 years were recruited using purposive sampling. Fall risk, fear of falling and depressive symptoms were assessed using the Berg Balance Scale (BBS), Falls Efficacy Scale-International (FES-I) and Geriatric Depression Scale (GDS-15), respectively. The data was analyzed with IBM SPSS Statistics version 27, employing descriptive statistics, ANOVA, Chi-Square test and Pearson correlation.

Results: High fear of falling was reported by 62% of participants while 67% were presented with depressive symptoms. The results obtained were statistically significant associations between fall risk and fear of falls (p=0.032), fall risk and depressive symptoms (p<0.001), and fear of falls and depressive symptoms (p=0.042). Age showed a significant association with fall risk and fear of falling, but not with depression.

Conclusion: The study shows that fall risk and fear of falling are highly prevalent among the institutionalized older adults and are closely linked to depressive symptoms. These findings emphasize the need for integrated intervention addressing both physical balance and psychological well-being to reduce fall risk, alleviate fear of falling, and improve mental health in residential care settings.

Introduction

Ageing results from the progressive accumulation of cellular and molecular damage throughout the lifespan, leading to a gradual decline in physical and cognitive functions, increased vulnerability to disease, and ultimately, death.[1] These biological changes are not strictly determined by chronological age and vary among individuals. The global demographic shift toward an ageing population is particularly evident in high-income countries, where the proportion and absolute number of older adults are expected to rise sharply in the coming decades.[2] As ageing is closely associated with the need for long-term care, the number

* **Corresponding contributor.**
Author's Address: *Faculty of Occupational Therapy, Sri Ramachandra Institute of Higher Education and Research (DU), Porur, Chennai, India.*
E-mail address: loganathanot@sriramachandra.edu.in
doi: 10.12982/JAMS.2026.042
E-ISSN: 2539-6056

of older individuals requiring institutionalization is projected to increase substantially.[3] Nevertheless, most older adults prefer to remain in their own homes to preserve familiar surroundings and maintain social connections for as long as possible.[4] Depression is a common but often underrecognized mental health condition among older adults, with approximately 15% of community-dwelling older persons reporting significant depressive symptoms[5]. Despite its high prevalence, depression is not an inevitable part of the ageing process. It is frequently underdiagnosed and undertreated, especially among institutionalized or residential care populations, where symptoms may remain unnoticed or misattributed to ageing itself.[6] Falls represent another major public health concern in geriatric populations, being one of the leading causes of injury, hospitalization, and mortality among older adults.[7] Beyond the physical consequences, falls can result in profound psychological impacts. Fear of falling (FoF) is a common psychological outcome that may occur even in individuals without a history of falls. This fear can lead to activity restriction, social withdrawal, and decreased mobility, which in turn contribute to physical deconditioning, increased fall risk, and functional dependence.[8] Fall-related problems and psychological distress are particularly prevalent among institutionalized older adults, potentially compromising both physical independence and mental well-being. Importantly, fall risk reflects not only physical frailty but may also be closely linked to emotional factors such as anxiety and depression. Although fall risk, FoF, and depressive symptoms are clinically interconnected, their relationships have not been adequately explored among institutionalized populations. Understanding these associations is crucial for designing effective preventive and rehabilitative interventions that promote both physical stability and psychological resilience in older adults. Therefore, the present study aimed to examine the associations among fall risk, fear of falling, and depressive symptoms among institutionalized older adults in Chennai, India. By identifying the interrelationships among these variables, the study seeks to contribute to the development of evidence-based strategies that address both the physical and mental health needs of older adults in institutional care settings.

Materials and methods

Study design and participants

This cross-sectional study was conducted over a period of four weeks among elderly residents of two old age homes in Chennai-Anandam, a free home for senior citizens, and Akshaya Trust, Velappanchavadi. A total of 90 participants were enrolled, comprising 48 residents from Anandam and 42 from Akshaya Trust. Both institutions were selected for their comparable residential environments and caregiving structures to minimize potential sampling bias. All participants were provided with detailed information about the purpose and procedures of the study in their preferred language (Tamil or English). Written informed consent was obtained prior to data collection. For participants with limited literacy, the consent form was read aloud in the presence of a witness, and a thumb impression was obtained to indicate voluntary participation. Only individuals with adequate cognitive ability (Six-Item Cognitive Impairment Test score < 8) were included to ensure capacity to provide informed consent. Confidentiality of personal data was maintained throughout the study, and participants were assured that they could withdraw at any point without any impact on their care or living arrangements.

Sample size and sampling method

Purposive sampling was used to recruit 90 older adults. The sample size was determined using the prevalence of fear of falling (90,5%) reported by Pereira *et al.*,[9] assuming a 7% relative precision, a 95% confidence level, and a 10% non-response rate, giving a total of 90 participants.

Eligibility criteria

Inclusion criteria

1. Age more than 60 years
2. Minimum 3 months residence in the institution
3. Independent mobility with or without aids
4. Six-Item Cognitive Impairment Test (6CIT) score less than 8, and
5. Ability to understand Tamil or English.

Exclusion criteria

1. History of neurological or psychiatric disorders
2. Recent trauma or surgical procedures.

Data collection tools

Screening was first performed using the Six-Item Cognitive Impairment Test (6CIT) to ensure cognitive eligibility. Participants who met the inclusion criteria were then assessed using the following standardized instruments:

1. Berg Balance Scale (BBS): The BBS is a performance-based tool used to assess functional balance through 14 common tasks such as standing, reaching, and turning. Each item is scored on a 5-point scale (0-4), with a total possible score of 56. Scores below 40 indicate a higher risk of falls. The BBS has demonstrated high inter-rater reliability (ICC=0.98) and internal consistency (Cronbach's α=0.96).

2. Falls Efficacy Scale-International (FES-I): The FES-I is a self-reported questionnaire designed to evaluate an individual's concern about falling during daily activities. It consists of 16 items scored from 1 (not at all concerned) to 4 (very concerned), with total scores ranging from 16 to 64. Higher scores indicate greater fear of falling. The FES-I has shown excellent internal consistency (Cronbach's α=0.96) and good

test-retest reliability.

3. Geriatric Depression Scale-Short Form (GDS-15): The GDS-15 is a validated screening instrument for depressive symptoms in older adults. It comprises 15 yes/no questions reflecting mood, motivation, and life satisfaction. Scores range from 0-15, with 0-4 indicating normal mood, 5-8 mild depression, 9-11 moderate depression, and 12-15 severe depression. The tool demonstrates high internal consistency (Cronbach's α=0.80-0.90) and is widely used for geriatric populations.

Preparatory steps

To ensure accuracy and reliability of data collection, assessors underwent structured training in the standardized administration and scoring of all instruments. The tools were reviewed for cultural and linguistic relevance, and a pilot test was conducted among a small group of older adults to confirm clarity and feasibility. All assessments were carried out under supervision, with measures taken to ensure participant safety and comfort throughout the procedure.

Each assessment was administered individually in a quiet, private setting within the institution to ensure comfort and accuracy of responses.

Statistical analysis

All data were entered into Microsoft Excel 2021 and subsequently analyzed using IBM SPSS Statistics version 27. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize participants' demographic characteristics and baseline study variables. Inferential analyses were conducted to examine the relationships among fall risk (Berg Balance Scale), fear of falling (Falls Efficacy Scale-International), and depressive symptoms (Geriatric Depression Scale). Chi-square tests were used for categorical variables, one-way analysis of variance (ANOVA) for continuous variables across groups, and Pearson's correlation coefficient to assess bivariate associations. $p<0.05$ was considered statistically significant.

Results

A total of 90 older adults aged between 61 and 90 years were enrolled in the study based on the selection criteria. The mean age of the participants was 74.24 years (SD=7.85). Distribution by gender showed a slight predominance of females, with 54.4% (N=49) being female and 45.6% (N=41) male. Majority were married (64.4%, N=58), while 35.6% (N=32) were unmarried. The mean duration of stay in the institution was 3.72 years (SD=4.70), ranging from 0.33 years (4 months) to 17 years. Educational attainment varied considerably. The largest group (44.4%, N=40) had completed SSLC/PUC, followed by 25.6% (N=23) with incomplete schooling. A smaller proportion had completed higher secondary or diploma (10%, N=9), college-level education (11.1%, N=10), while 8.9% (N=8) reported having no formal education. Overall, the findings suggest that most participants had at least secondary-level education. Regarding fall history, 26.7% (N=24) experienced at least one fall previously, while 73.3% (N=66) had no history of falls. Most of the participants (83.3%, N=75) did not use any device, 15.6% (N=14) used a walking cane or stick, and only one participant (1.1%) reported the use of a walker. For past orthopaedic history, 43.3% (N=39) had been previously diagnosed with or treated for an orthopaedic condition, while 56.7% (N=51) reported no such history. Details of the socio-demographic characteristics of participants are presented in Table 1.

Table 1. Socio-demographic characteristics of participants (N=90)

Characteristic	Category	Frequency (N)	Percentage (%)
Age (years)	61–70	30	33.3
	71–80	41	45.6
	81–90	19	21.1
	Mean±SD	74.24±7.84	
Gender	Male	41	45.6
	Female	49	54.4
Marital status	Married	58	64.4
	Unmarried	32	35.6
Duration of stay (years)	Less than 1	33	36.7
	1 to 5	34	37.8
	More than 5	23	25.5
	Mean±SD	3.71±4.69	

Table 1. Socio-demographic characteristics of participants (N=90) (continued)

Characteristic	Category	Frequency (N)	Percentage (%)
Educational history	No schooling	8	8.9
	Incomplete schooling	23	25.6
	SSLC/PUC	40	44.4
	HSC/Diploma	9	10.0
	College	10	11.1
History of falls	Yes	24	26.7
	No	66	73.3
Assistive/adaptive devices	Walking cane or stick	14	15.6
	Walker	1	1.1
	None	75	83.3
Past orthopaedic history	Yes	39	43.3
	No	51	56.7

Note: *SD: Standard Deviation*

On the Berg Balance Scale (BBS), 56.7% (N=51) of participants were classified as low fall risk, 36.7% (N=33) as medium fall risk, and 6.6% (N=6) as high fall risk, with a mean score of 41.29±11.62. Falls Efficacy Scale-International (FES-I) indicated that 62.2% (N=56) of participants reported high fear of falling, 27.8% (N=25) reported moderate fear, and 10.0% (N=9) reported low fear. The mean FES-I score was 30.94±8.96. Depressive Symptoms were distributed as follows, 32.2% (N=29) of participants had normal scores, 32.2% (N=29) had mild depression, 22.2% (N=20) had moderate depression, and 13.3% (N=12) had severe depression, with a mean score of 6.92±4.00. The distribution of participants across levels of fall risk, fear of falling, and depressive symptoms is summarized in Table 2.

Table 2. Levels of fall risk, fear of falling, and depressive symptoms among participants.

Variable	Level	Frequency	Percentage	Mean±SD
Fall risk (BBS score)	Low fall risk	51	56.7	41.29±11.62
	Medium fall risk	33	36.7	
	High fall risk	6	6.6	
Fear of falling (FES-I score)	Low fear of falling	9	10.0	30.94±8.96
	Moderate fear of falling	25	27.8	
	High fear of falling	56	62.2	
Depressive symptoms (GDS score)	Normal	29	32.2	6.92±4.00
	Mild depression	29	32.2	
	Moderate depression	20	22.2	
	Severe depression	12	13.3	

Note: *BBS: Berg Balance Scale, FES-I: Falls Efficacy Scale-International, GDS: Geriatric Depression Scale.*

A statistically significant difference was observed using analysis of variance (ANOVA) in mean age among the Falls Efficacy Scale-International (FES-I) categories ($F=3.746$, $p=0.028$). The mean age was lowest in the low fear group (68.44±7.038 years), followed by the moderate fear group (73.24±7.172 years), and highest in the high fear group (75.63±7.882 years). ANOVA also indicated a significant difference in mean age across the Berg Balance Scale (BBS) fall risk categories ($F=8.681$, $p<0.001$). Participants classified as low fall risk had a mean age of 71.67±6.716 years, those with medium fall risk had a higher mean age of 78.39±7.701 years, while those with high fall risk had a mean age of 73.33±9.136 years. These comparisons of mean age by fear of falling and fall risk categories are shown in Table 3.

Table 3. Comparison of mean age by fear of falling (FES-I) and fall risk (BBS) categories.

Categories		N	Mean age±SD	F	*p* value
Fear of falling (FES-I)	Low fear of falling	9	68.44±7.038	3.746	0.028*
	Moderate fear of falling	25	73.24±7.172		
	High fear of falling	56	75.63±7.882		
Fall risk (BBS)	Low fall risk	51	71.67±6.716	8.681	<0.001*
	Medium fall risk	33	78.39±7.701		
	High fall risk	6	73.33±9.136		

Note: *FES-I: Falls Efficacy Scale-International, BBS: Berg Balance Scale.*

A Chi-square test showed a significant association between fall risk (BBS) and fear of falling (FES-I) (χ^2=10.525, p=0.032). Among low fall risk participants, 49.0% reported high fear, 39.2% moderate, and 11.8% low fear, while 75.8% of the medium fall risk group and all the high fall risk group reported high fear. Fall risk was also significantly associated with depressive symptoms (GDS) (χ^2=32.724, p<0.001). In the low fall risk group, 39.2% were normal and 9.8% severely depressed, whereas 83.3% of the high fall risk group had severe depression. A further significant association was observed between fear of falling and depression (χ^2=13.085, p=0.042). Among those with low fear, 66.7% were normal and none severely depressed, while in the high fear group 37.5% had mild, 25.0% moderate, and 17.9% severe depression. The associations between these variables are presented in Table 4.

Table 4. Associations between fall risk, fear of falling, and depressive symptoms.

Association	Categories	Distribution (N, %)	χ^2	*p* value
Fall risk and fear of falling (BBS × FES-I)	Low fall risk	Low fear: 6 (11.8%) Moderate fear: 20 (39.2%) High fear: 25 (49.0%)	10.525	0.032*
	Medium fall risk	Low fear: 3 (9.1%) Moderate fear: 5 (15.2%) High fear: 25 (75.8%)		
	High fall risk	Low fear: 0 (0.0%) Moderate fear: 0 (0.0%) High fear: 6 (100.0%)		
Fall risk and depressive symptoms (BBS × GDS)	Low fall risk	Normal: 20 (39.2%) Mild: 13 (25.5%) Moderate: 13 (25.5%) Severe: 5 (9.8%)	32.724	<0.001*
	Medium fall risk	Normal: 9 (27.3%) Mild: 16 (48.5%) Moderate: 6 (18.2%) Severe: 2 (6.1%)		
	High fall risk	Normal: 0 (0.0%) Mild: 0 (0.0%) Moderate: 1 (16.7%) Severe: 5 (83.3%)		
Fear of falling and depressive symptoms (FES-I × GDS)	Low fear of falling	Normal: 6 (66.7%) Mild: 1 (11.1%) Moderate: 2 (22.2%) Severe: 0 (0.0%)	13.085	0.042*
	Moderate fear of falling	Normal: 12 (48.0%) Mild: 7 (28.0%) Moderate: 4 (16.0%) Severe: 2 (8.0%)		
	High fear of falling	Normal: 11 (19.6%) Mild: 21 (37.5%) Moderate: 14 (25.0%) Severe: 10 (17.9%)		

Note: *BBS: Berg Balance Scale, FES-I: Falls Efficacy Scale-International, GDS: Geriatric Depression Scale, χ^2: Chi-square value, *Significant at p<0.05.*

Pearson's correlation analysis was carried out to determine the relationships among age, fall risk (BBS), fear of falls (FES-I), and depressive symptoms (GDS). Age was significantly correlated with BBS (r=0.290, *p*=0.006) and FES-I (r=0.275, *p*=0.009), but not with GDS (r=0.034, *p*=0.752). BBS was negatively correlated with FES-I (r=-0.281, *p*=0.007) and positively correlated with GDS (r=0.271, *p*=0.010). FES-I demonstrated a positive correlation with GDS (r=0.310, *p*=0.003). These findings suggest that fear of falling is strongly linked with both fall risk and depression, while age influences balance and fear of falling but not depressive symptoms, underscoring the need for integrated interventions addressing both mobility and psychological health in older adults. The correlation matrix illustrating relationships among age, fall risk, fear of falling, and depressive symptoms is displayed in Table 5.

Table 5. Pearson correlation matrix: Relationships between age, fall risk, fear of falling, and depressive symptoms.

Variables		Age	BBS score	FES-I score	GDS score
Age	Pearson correlation	1.000	0.290**	0.275**	0.034
	p value	-	0.006	0.009	0.752
BBS score	Pearson correlation	0.290**	1.000	-0.281**	0.271**
	p value	0.006	-	0.007	0.010
FES-I score	Pearson correlation	0.275**	0.281**	1.000	0.310**
	p value	0.009	0.007	-	0.003
GDS score	Pearson correlation	0.34	0.271**	0.310**	1.000
	p value	0.752	0.010	0.003	-

Note: *BBS: Berg Balance Scale, FES-I: Falls Efficacy Scale-International, GDS: Geriatric Depression Scale.*

Discussion

The present study demonstrated a statistically significant association between the risk of falling and fear of falling among institutionalized older adults (*p*=0,032). All participants identified as having a high risk of falls also exhibited high levels of fear of falling, underscoring the strong interconnection between physical balance impairment and psychological apprehension. This finding corroborates the work of Ellmers *et al*. who reported that fear of falling independently predicts future fall incidence and is associated with reduced balance performance and activity restriction.[10]

Furthermore, the results align with Martínez-Arnau *et al*. who observed that frailty markers such as slowness and exhaustion are positively related to fear of falling, particularly among older adults with reduced physical activity.[11] The overlap between these findings suggests that fear of falling is not merely a psychological response to instability, but also a precipitating factor that can exacerbate physical deconditioning, diminish self-efficacy, and ultimately lead to a loss of independence. This bidirectional interaction highlights the necessity of addressing both physical and psychological domains in fall prevention strategies.[11]

A highly significant relationship was also observed between fall risk and depressive symptoms (*p*<0,001). Participants with a higher fall risk demonstrated markedly elevated depression levels, with 83,3% classified as severely depressed. This observation echoes Biderman *et al*. who emphasized that depression and falls share overlapping risk factors such as reduced physical strength, limited engagement in daily activities, and slower gait speed.[12] The anticipation or experience of falls can lead to functional limitations, fostering dependence and emotional distress.[12] The "DS-falls pathway" proposed by Hoffman *et al*. further explains this mechanism, linking depressive-related fatigue, inattention, and impaired coordination with an increased likelihood of falls.[13] Accordingly, comprehensive fall risk assessments should incorporate screening for depressive symptoms, acknowledging the intertwined nature of emotional and physical decline.[13]

The study also revealed a significant association between fear of falling and depressive symptoms (*p*=0,042), supporting the bidirectional model proposed by Pereira *et al*.[9] Fear of falling may restrict mobility, increase social withdrawal, and reduce autonomy, while depression can heighten perceived vulnerability and reduce confidence in physical abilities, forming a "vicious cycle". Integrative interventions-combining psychological support, cognitive-behavioral strategies, and environmental modifications-are therefore essential to break this cycle and enhance both physical safety and psychological well-being among older adults.[9] Lee and Kim also noted that fear-based avoidance behaviors often result in social disengagement, which contributes to depressive symptoms and diminished well-being, further reinforcing the interplay between psychological and behavioral factors.[14]

Lastly, age was significantly correlated with fall risk (*p*=0.006) and fear of falling (*p*=0.009), but not

with depressive symptoms (p=0,752). This pattern suggests that aging exerts a stronger influence on physical vulnerability than on emotional well-being among institutionalized elderly populations. This aligns with Gazibara *et al*. and Gale *et al*. who reported that age-related declines in muscle strength, gait stability, and confidence contribute significantly to fall risk.[15,16] In contrast, the lack of association between age and depression corresponds with Trevisan *et al*. who highlighted that psychosocial and gender-related variables exert a greater influence than chronological age in predicting depressive symptoms among older adults.[17]

In summary, the interrelationships among fall risk, fear of falling, and depression observed in this study highlight the multifactorial nature of geriatric health. These findings underscore the need for multidisciplinary interventions integrating physical rehabilitation, psychological support, and environmental safety measures to promote holistic well-being and preserve autonomy in institutionalized elderly individuals.

Limitations

This study has several limitations that should be acknowledged. Firstly, the use of convenience sampling may limit the representativeness of the sample, as participants were recruited from a single institutional setting. Consequently, the findings may not be generalizable to older adults living independently in the community. Secondly, the reliance on self-reported measures, including the Geriatric Depression Scale (GDS) and the Falls Efficacy Scale-International (FES-I), introduces potential response bias. Participants' mood, cognitive capacity, and willingness to disclose personal information could have influenced their responses, which should be considered when interpreting the results. Thirdly, the cross-sectional design precludes causal inference between fall risk, fear of falling, and depressive symptoms. Future studies should adopt longitudinal designs to clarify temporal relationships among these variables. In addition, employing random sampling and recruiting a larger, more diverse population from multiple institutions and community settings would enhance the external validity of future research.

Moreover, institutional living conditions may shape perceptions of autonomy, safety, and emotional well-being, which could confound the observed associations. Comparative studies between institutionalized and community-dwelling older adults are therefore recommended.

Finally, future research should explore the potential mediating or moderating roles of psychosocial factors-such as social support, loneliness, and cognitive decline-to provide a more comprehensive understanding of the interplay between physical and psychological health in aging populations.

Conclusion

This study demonstrates a significant interrelationship among fall risk, fear of falling, and depressive symptoms in institutionalized older adults. A substantial proportion of participants reported high levels of fear of falling, and varying degrees of depressive symptoms were observed. Notably, individuals at greater risk of falls exhibited more severe depressive symptoms, and elevated fear of falling was associated with both increased fall risk and heightened depressive symptoms.

These findings underscore the intertwined nature of physical and psychological health concerns among elderly individuals residing in old age homes. The results highlight the importance of comprehensive interventions that address both balance and mental well-being to reduce fall risk, alleviate fear of falling, and mitigate depressive symptoms. Future research and clinical practice should consider integrative strategies that simultaneously target physical stability, emotional support, and environmental safety to promote holistic health and independence in institutionalized older adults.

Ethical approval

Approved by the Institutional Ethics Committee of Sri Ramachandra Institute of Higher Education and Research (DU), Chennai, India.

Funding

No external funding was received.

Conflict of interest

The authors declare no conflicts of interest.

CRediT authorship contribution statement

Bowas S: conceptualization, methodoly, investigation, writing original draft, review and edit; **Loganathan S, Raghuram P**, and **Jaivignesh S**: supervision, writing: review and edit.

Acknowledgements

The authors thank the management of the participating old age homes and all participants for their cooperation.

References

[1] World Health Organization. Ageing and health [Internet]. Geneva: World Health Organization; 2024 Oct 1 [cited 2025 Sep 16]. Available from: https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

[2] Kinsella KG, He W. An aging world: 2008 [Internet] International Population Reports P95/09-1. Washington (DC): U.S. Census Bureau; 2009 [cited 2025 Sep 21]. Available from: https://www.census.gov/library/publications/2009/demo/p95-09-1.html

[3] Channon A, Matthews Z, Van Lerberghe W. Will there be enough people to care? Notes on workforce implications of demographic change 2005-2050. Geneva: World Health Organization; 2006.
[4] Del Duca GF, Silva SG, Thumé E, Santos IS, Hallal PC. Predictive factors for institutionalization of the elderly: a case-control study. Rev Saude Publica. 2012; 46(1): 147-53. English, Portuguese. doi: 10.1590/s0034-89102012000100018.
[5] Beekman AT, Deeg DJ, van Tilburg T, Smit JH, Hooijer C, van Tilburg W. Major and minor depression in later life: a study of prevalence and risk factors. J Affect Disord. 1995; 36(1-2): 65-75. doi: 10.1016/0165-0327(95)00061-5.
[6] Carreira L, Botelho MR, Matos PCB, Torres MM, Salci MA. Prevalence of depression in institutionalized elderly. Rev Enferm UERJ. 2011; 19(2): 268-73.
[7] Milos V, Bondesson Å, Magnusson M, Jakobsson U, Westerlund T, Midlöv P. Fall risk-increasing drugs and falls: a cross-sectional study among elderly patients in primary care. BMC Geriatr. 2014; 14: 40. doi: 10.1186/1471-2318-14-40.
[8] Brouwer B, Musselman K, Culham E. Physical function and health status among seniors with and without a fear of falling. Gerontology. 2004; 50(3): 135-41. doi:10.1159/000076771.
[9] Pereira MEA, Santos GS, Almeida CR, Nunes KCS, Silva MCM, José H, et al. Association between falls, fear of falling and depressive symptoms in community-dwelling older adults. Healthcare (Basel). 2024; 12(16): 1638. doi:10.3390/healthcare 12161638.
[10] Ellmers TJ, Ventre JP, Freiberger E, Hauer K, Hogan DB, Lim ML, et al. Does concern about falling predict future falls in older adults? A systematic review and meta-analysis. Age Ageing. 2025; 54(4): afaf089. doi:10.1093/ageing/afaf089.
[11] Martínez-Arnau FM, Prieto-Contreras L, Pérez-Ros P. Factors associated with fear of falling among frail older adults. Geriatr Nurs. 2021; 42(5): 1035-41. doi:10.1016/j.gerinurse.2021.06.007.
[12] Biderman A, Cwikel J, Fried AV, Galinsky D. Depression and falls among community-dwelling elderly people: a search for common risk factors. J Epidemiol Community Health. 2002; 56(8): 631-6. doi:10.1136/jech.56.8.631.
[13] Hoffman GJ, Hays RD, Wallace SP, Shapiro M, Ettner SL. Depressive symptomatology and fall risk among community-dwelling older adults. Soc Sci Med. 2017; 178: 206-13. doi:10.1016/j.socscimed.2017.02.020.
[14] Lee TH, Kim W. Is fear of falling and the associated restrictions in daily activity related to depressive symptoms in older adults? Psychogeriatrics. 2021; 21(3): 304-10. doi:10.1111/psyg.12664.
[15] Gazibara T, Kurtagić Pećanin I, Kišić-Tepavčević D, Nurković S, Kovačević N, et al. Falls, risk factors and fear of falling among persons older than 65 years of age. Psychogeriatrics. 2017; 17(4): 215-23. doi:10.1111/psyg.12217.
[16] Gale CR, Cooper C, Sayer AA. Prevalence and risk factors for falls in older men and women: the English Longitudinal Study of Ageing. Age Ageing. 2016; 45(6): 789-94. doi:10.1093/ageing/afw129.
[17] Trevisan FK, Silva RH, Reis SFA, Giehl MWC. Prevalence of depressive symptoms and associated factors in Brazilian older adults: 2019 Brazilian National Health Survey. Cad Saude Publica. 2024;40(12):e00006124.