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Original Article

Physical Medicine and Rehabilitation Section

Correlation between Activity Restriction and Fear of Falling in Community Dwelling Indian Older Adults: A Cross-sectional Study

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ABSTRACT

Introduction: Fear of Falling (FoF) is a prevalent and debilitating concern among older adults, often leading to self-imposed activity restriction, reduced mobility and diminished quality of life. In the Indian context, these challenges are compounded by underreporting, limited awareness and insufficient geriatric support systems related to falls.

Aim: To examine the relationship between FoF and activity restriction among community-dwelling Indian older adults using the Falls Efficacy Scale-International (FES-I) and the Balance Confidence Scale (BCS).

Materials and Methods: A cross-sectional study was conducted on 220 community-dwelling Indian older adults. The approval from the Institutional Ethics Committee (IEC) was obtained and data collected. The collected data included demographic information, fall history, fall frequency, number of medical conditions, FES-I and BCS scores. Activity restriction was evaluated with a set of questions regarding safe engagement in mobility and community activities. Statistical analyses were performed using IBM Statistical Package for the Social Sciences (SPSS) Statistics version 27.0. Pearson correlations were computed and multiple linear regression was conducted to predict the number of activities restricted based on age, total FES-I score, number of falls in the last year, number of medical conditions and total BCS score. Significance was set at p-value <0.05.

Results: Of the 220 participants (mean age=68.51±6.50 years), 65 (29.6%) reported at least one fall in the past year, with varying activity restriction. Significant correlations were found between the number of restricted activities, FES-I score, falls and medical conditions. The regression was significant, $F(5, 214)=34.79$, p-value <0.001, explaining 44.8% of the variance in activity restriction ($R^2=0.45$, Adjusted $R^2=0.44$). Significant predictors of activity restriction were the number of falls (B=0.75, p-value=0.01), medical conditions (B=0.86, p-value <0.001), and FES-I score (B=0.19, p-value <0.001), while age (p-value=0.39) and BCS score (p-value=0.18) were non significant.

Conclusion: FoF is closely linked with activity restriction among community-dwelling Indian older adults, posing a serious risk to independence and quality of life. Early screening and addressing FoF and balance confidence can support safe ageing and functional independence, as these reflect possible limitations even before actual limitations manifest.

Keywords: Accidental falls, Activities of daily living, Co-morbidities, Health behaviour, Self-efficacy

INTRODUCTION

Falls are a major public health issue among older adults, often resulting in injuries, hospitalisations and even mortality. Besides the physical consequences of falls, the psychological effects such as FoF are increasingly recognised as major contributors to functional decline. FoF is characterised by an excessive concern about falling that leads to avoidance of daily activities, even in the absence of an actual fall history [1]. One major consequence of this fear is the subsequent restriction of activities, leading to a downward spiral of inactivity, deconditioning, loss of confidence and further increased fall risk [2-5].

Previous studies have highlighted that FoF can be both a cause and a consequence of falls [2,3,6-8]. FoF affects both those who have fallen and those who have not; it serves as an anticipatory fear that can independently predict reduced mobility and lower social participation [4,9]. Previous studies have shown that FoF is prevalent even among older adults who have never fallen and is linked to reduced participation in physical and social activities [2,10]. Psychological factors often precede physical decline [11]. Activity restriction due to FoF leads to a cascade of negative outcomes including physical deconditioning, reduced mobility, social isolation, depression and a lower quality of life [2,4,5,11-14]. The fear-induced restriction of activity leads to a tendency to adopt a more sedentary lifestyle, especially among community-dwelling older adults who may not have immediate access to rehabilitation or support services [2,15].

FoF has been studied extensively in developed countries, yet data from India remain scarce. Indian community settings present unique challenges such as densely populated housing, limited accessibility and lack of fall-prevention awareness, increasing the need for local data and context-sensitive interventions. The reported risk factors for falls among older adults in India include socio-demographic factors, environmental factors, lifestyle factors, physical and/or mental health conditions and medical interventions [16]. Limited information is available about the rate of falls, FoF, balance confidence and related factors in community-dwelling Indian older adults. Thus, this study aimed to assess the relationship between age, FoF, balance confidence, fall history, co-morbidities and activity restriction in community-dwelling older adults. This study is part of a PhD project focusing on field testing and evaluating the psychometric properties of the Balance Confidence Scale (BCS) using Rasch-model analysis.

MATERIALS AND METHODS

The cross-sectional study with a convenience sample of 220 community-dwelling Indian older adults was conducted in community settings in rural and urban areas of Jaipur, Rajasthan,

India, from December 2023 to March 2025. Ethical approval was obtained from the Institutional Ethics Committee (IEC) Number: EC/NEW/INST/2022/RJ/0097, Jaipur, India. The study was designed and reported in accordance with the STROBE guidelines, and written informed consent was obtained from all participants.

Inclusion criteria: Community-dwelling Indian older adults aged 60 years and above, able to hear a normal voice from a distance of one meter with or without a hearing aid, able to comprehend the administrator's commands and ambulant with or without the use of a walking aid or other personal assistance were included in the study.

Exclusion criteria: Homebound, institutionalised, wheelchair-bound older adults, and those unable to ambulate with or without the use of a walking aid or other personal assistance. A history of neurological conditions (e.g., Parkinson's disease, stroke) and any surgery to the lower extremities and/or spine were also excluded from the study.

Sample size: The sample size was determined based on the recommendations of De Vet HCW et al., who advise 4 to 10 participants per item of the scale [17]. This study is part of a PhD project, and since the BCS contains 22 items, a sample size of 220 was deemed optimal. The population under study was accessible in various parks, community centres, health centres, recreation groups, senior citizens groups, gram panchayats, and RWAs. From such a population of 380 community-dwelling Indian older adults, those meeting inclusion criteria were screened. Of these, 254 older adults met the inclusion criteria and were invited to participate. Among them, 19 declined due to time constraints, and 15 were unable to complete the questionnaire.

Outcome measures: The FES-I is a widely used measure of fall-related self-efficacy. Developed by Yardley et al., it evaluates an individual's concern about falling during various indoor and outdoor activities [18]. It consists of 16 items scored on a 4-point Likert scale (1=not at all concerned; 4=very concerned). Total scores range from 16 to 64, with higher scores indicating greater fear of falling and perceived fall risk.

Balance Confidence Scale (BCS): The BCS evaluates an individual's confidence in performing tasks without losing balance [19]. Respondents indicate the level of confidence for each of the 22 items on a scale from 0% to 100% (whole numbers only). The average of the item scores yields the total BCS score. Lower scores on this scale are associated with higher fall risk.

Study Procedure

Demographic data and fall frequency over the past year were recorded, and the assessment tools were administered via structured interviews. The number of activities restricted from the predefined set designed for the study, encompassing various domains of performance [Table/Fig-1] was recorded. This set of activities was developed during the previous work of the first author for the development of the BCS [19], based on existing literature, interviews with older adults, expert recommendations, and reviews of existing activity-based FoF scales. The set includes activities covering self-care, transfers, basic mobility and community mobility [19]. Overall, 22 activities were included. Participants indicated which of the 22 activities they had restricted. The total number of restricted activities was calculated for each participant and used as the activity restriction score. An activity was considered restricted if the individual discontinued the activity, performed it with modifications, or performed it with external support. The data collected also included information on the number of medical conditions each participant was suffering from. Reported medical conditions covered a range of issues, including blood pressure problems, heart disease, stroke or paralysis, neurological deficits from head injuries, Parkinson's disease, seizures, dizziness or vertigo, recent fractures, arthritis or rheumatoid arthritis, vision and hearing problems, diabetes, memory issues and other health-related concerns.

Areas of performance	Activities
Self-care	1. Bathing while standing 2. Using Indian-style toilet/commode chair/western toilet 3. Wearing footwear while standing without support 4. Dressing lower extremities (putting on trousers or undergarments)
Transfers	5. Getting in/out of bed 6. Getting in/out of chair 7. Standing up from sitting on the floor
Basic mobility	8. Bending over to pick up objects from the floor 9. Reaching for objects on overhead shelves (tiptoeing or using a stool) 10. Climbing upstairs 11. Climbing downstairs 12. Walking up/down ramps/slopes 13. Walking over slippery surfaces (e.g., wet tiles) 14. Walking in the dark 15. Walking around the house
Community mobility	16. Walking on uneven roads 17. Going to a store/shop 18. Walking in crowded places (bus station, social gatherings, places of worship) 19. Crossing roads 20. Using community transport (rickshaw, bus, train) 21. Walking in hilly areas 22. Visiting public places like restaurants, places of worship

[Table/Fig-1]: Questions regarding activity restriction.

STATISTICAL ANALYSIS

The data were analysed using IBM SPSS Statistics version 27.0. Descriptive statistics summarised participant characteristics and scale scores (BCS, FES-I) as means and standard deviations and as frequencies and percentages. Pearson correlation coefficients examined the strength and direction of the relationships between age, number of falls, FES-I, BCS and number of restricted activities. A multiple linear regression was conducted to predict the number of restricted activities based on age, total FES-I score, number of falls in the last year, number of medical conditions reported and total BCS score. The level of significance was set at p-value <0.05.

RESULTS

A total of 220 participants were included in the study, with a mean age of 68.51±6.50 years (range 60-95). The overall mean±SDs, and the minimum and maximum values for age, FES-I scores and BCS scores for all participants and by sex are presented in [Table/Fig-2]. Male participants had a higher mean age, a lower mean FES-I score and a higher mean BCS compared with female participants [Table/Fig-2].

Total participants (N=220)	Mean±SD (Minimum-Maximum)
Age (years)	68.51±6.50 (60-95)
FES-I (score)	26.72±10.97 (16-62)
BCS score (%)	77.08±22.58 (12-100)
Male participants (N=119)	
Age (years)	69.09±6.13 (60-90)
FES-I (score)	25.20±10.42 (16-61)
BCS score (%)	81.75±20.25 (18-100)
Female participants (N=101)	
Age (years)	67.82±6.87 (60-95)
FES-I (score)	28.51±11.38 (16-62)
BCS score (%)	71.57±24.00 (12-100)

[Table/Fig-2]: Descriptive data for the participants of the study whole sample (n=220).
Keys: FES-I: Falls Efficacy Scale-International; BCS: Balance Confidence Scale; SD: Standard deviation

Fall frequency: Of the 220 participants, 65 (29.6%) reported one or more falls in the past year; 56 (25.5%) reported 1-3 falls; 7 (3.2%) reported 4-6 falls; and 2 (0.9%) reported seven or more falls in the past year. This indicates that recurrent falls are not uncommon among community-dwelling older adults. Given the literature on adverse sequelae and mortality associated with repeated falls

and the tendency for underreporting, this proportion represents a substantial burden in absolute numbers [Table/Fig-3].

Category	Range	n (%)
Number of falls	0	155 (70.50)
	1 to 3	56 (25.50)
	4 to 6	7 (3.20)
	7 or more	2 (0.90)
Number of activities restricted	0	50 (22.73)
	1-5	66 (30.00)
	6-10	44 (20.00)
	11-15	22 (10.00)
	16-20	20 (9.09)
	More than 20	18 (8.18)

[Table/Fig-3]: Description of number of falls and number of activities restricted.

Activity restriction and medical conditions: The number of activities reported as restricted by participants varied widely, as described in [Table/Fig-3]. Findings related to the number of medical conditions reported by the participants are presented in [Table/Fig-4], which shows that 34.9% of participants had at least four medical conditions.

Number of medical conditions	n (%)
0 to 3	145 (65.9)
4 to 6	54 (24.6)
7 to 9	16 (7.3)
10 or more	5 (2.3)

[Table/Fig-4]: Number of reported medical conditions/comorbidities.

Correlations among variables: Pearson's correlation coefficients indicated statistically significant correlations among the number of activities restricted, the total FES-I score, the number of falls in the past year and the number of reported medical conditions [Table/Fig-5].

Variables	Number of activities restricted	BCS Score	FES-I Score	Age	Number of falls (past year)	Number of medical conditions
Number of activities restricted	1.00	-0.562**	0.579**	0.089	0.377**	0.476**
BCS Score	-0.562**	1.00	-0.844**	-0.249**	-0.449**	-0.375**
FES-I Score	0.579**	-0.844**	1.00	0.185**	0.426**	0.338**
Age	0.089	-0.249**	0.185**	1.00	0.213**	0.042
Number of falls (past year)	0.377**	-0.449**	0.426**	0.213**	1.00	0.161*
Number of medical conditions	0.476**	-0.375**	0.338**	0.042	0.161*	1.00

[Table/Fig-5]: Pearson correlation matrix between study variables (N=220).
Keys: - *p<0.05 (2-tailed); ** p<0.01 (2-tailed); r: Pearson correlation coefficient; p: p-value indicating significance level; BCS: Balance confidence scale; FES-I: Falls efficacy scale-international.

Regression analysis: A multiple regression was significant: F(5, 214)=34.786, p-value <0.001, explaining 44.8% of the variance in activity restriction (R^2=0.45, Adjusted R^2=0.44) [Table/Fig-6], [Table/Fig-7]. Significant predictors were number of falls in the past year (B=0.75, p-value=0.01), number of medical conditions (B=0.86, p-value <0.001), and FES-I score (B=0.19, p-value=0.001), all positively associated with restriction. Age (p-value=0.39) and BCS score (p-value=0.18) were not statistically significant; however, they were retained in the model due to their contextual relevance.

The detailed regression statistics, significant values and the percentage contribution of each variable are presented in [Table/Fig-8]. The resulting equation for predicting the number of activities restricted based on the variables above is:

Activities Restricted=4.925-0.048 (Age)+0.745 (Falls)+0.856 (Medical Conditions)-0.040 (BCS score)+0.192 (FES-I score).

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.670	0.448	0.435	5.10285

Dependent Variable: Number of activities restricted (listed in screening form) which the participant has restricted

[Table/Fig-6]: Model summary for multiple regression predicting activity restriction.
R: multiple correlation coefficient; R^2 (R Square): Coefficient of determination; Adjusted R^2: adjusted coefficient of determination.

Source	Sum of squares	df	Mean square	F	p-value
Regression	4529.000	5	905.800	34.786	<0.001**
Residual	5572.359	214	26.039		
Total	10101.359	219			

[Table/Fig-7]: ANOVA results for multiple regression predicting number of activities restricted.
Keys: Dependent variable: Number of activities restricted (listed in screening form); Predictors: (Constant), FES-I score, Number of medical conditions (listed in screening form); Number of falls; BCS score; **level of significance (p<0.01)

DISCUSSION

This study identifies FoF as a key factor in restricting activity participation among community-dwelling Indian older adults. A strong positive correlation between FES-I scores and activity restriction, along with a negative correlation with BCS scores, suggests that reduced balance confidence—an intrinsic fall risk factor—amplifies FoF. These results support prior evidence that perceived self-efficacy, more than actual physical ability, significantly influences daily activity participation [20-22]. The current study confirms the high prevalence of FoF among community-dwelling older adults in India, consistent with Mane AB et al., [23]. No participant reported absence of concern on the FES-I, with the highest score being 62, indicating that all participants had at least some concern about falling. This suggests that FoF itself is pervasive and a more serious problem than falls in the elderly.

The present findings reveal a significant correlation between diminished balance confidence and reduced activity participation, reinforcing the complementary value of using both the FES-I and BCS in assessing fall-related functional limitations. This study extends the findings of Mane AB et al., by quantitatively linking balance confidence to activity restriction [23].

FoF and low balance confidence are associated with co-morbidities and previous falls [4,5,24,25], yet this study found FoF present regardless of prior falls, reinforcing its multifactorial nature involving physical, psychological and functional influences [5,26,27]. This highlights the need for preventive strategies that extend beyond post-fall interventions. Evidence-based programs, such as graded exposure to feared activities, fall-prevention education, environmental modifications and balance training, have shown effectiveness in reducing FoF and promoting activity participation [28].

The combined use of FES-I and BCS in this study proved valuable for identifying reduced participation linked to FoF and poor balance confidence. These findings support incorporating targeted interventions within fall-prevention programs to improve confidence and engagement. Early, multidisciplinary rehabilitation addressing both physical and psychological aspects should be prioritised, especially for community-dwelling older adults in India. Group-based sessions, cognitive strategies and training in Activities of Daily Living (ADLs) and community mobility may further enhance participation and independence.

Additionally, this study highlights the high burden of multimorbidity: 65.9% of participants reported 0-3 chronic conditions, 24.6% had 4-6, and 9.6% had 7 or more, with 89% requiring medication

Predictor	Unstandardised coefficient (B)	Standard error	Standardised coefficient (β)	t-value	Significance (p)	β^2	Approx. % contribution=Approx. % Contribution (β^2 × 100)
Constant	4.93	5.66	-	0.87	0.39	-	-
Age of respondent	-0.05	0.06	-0.05	-0.86	0.39	0.00	0.21%
Number of falls (last year)	0.75	0.29	0.15	2.55	0.01*	0.02	2.16%
Number of medical conditions (on medication)	0.86	0.16	0.30	5.45	<0.001*	0.09	8.94%
Total score of BCS scale	-0.04	0.03	-0.13	-1.35	0.18	0.02	1.77%
Total score of FES-I	0.19	0.06	0.31	3.26	<0.001*	0.10	9.67%

[Table/Fig-8]: Regression coefficients for variables predicting number of activities restricted.
Keys: B: Unstandardised regression coefficient; SE B: Standard error of the unstandardised coefficient; β: Standardised regression coefficient; t: t-value for significance testing; p: p-value indicating statistical significance; β^2=squared standardised coefficient; Approx. % Contribution=variance explained by predictor; BCS: Balance Confidence Scale; FES-I=Falls Efficacy Scale- International.

for at least one condition. Multiple impairments, disabilities and conditions are associated with an increased risk of falls in the elderly, which increases with the number of risk factors [5,26,27,29]. Several common chronic medical conditions, including arthritis, Alzheimer's disease, stroke, cataract and urinary incontinence, as well as less common conditions such as Parkinson's disease, are associated with falls in one or more studies [4,5]. The level of medical complexity thus increases vulnerability to FoF and falls, underscoring the importance of comprehensive, individualised fall-prevention approaches for older adults.

Limitation(s)

Limitations of the study include its cross-sectional design, which limits inference; self-reported data about history of falls and activity restriction, which could be affected by recall or social desirability bias. Further research using longitudinal designs and intervention-based studies may be conducted to validate and extend these findings.

CONCLUSION(S)

This study confirms that FoF, frequency of previous falls and co-morbidities are key factors associated with activity restriction in community-dwelling Indian older adults. Both the FES-I and the BCS offer valuable insight into psychological and functional contributors to fall risk. Targeted fall prevention and intervention programs addressing these factors can promote healthy ageing, enhance quality of life and reduce the overall burden of falls.

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REFERENCES

[1] Vo THM, Nakamura K, Seino K, Nguyen HTL, Van Vo T. Fear of falling and cognitive impairment in elderly with different social support levels: Findings from a community survey in Central Vietnam. BMC Geriatr [Internet]. 2020;20(1):01-10. [cited 2025 Aug 6]. Available from: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-020-01533-8.

[2] Tsai YJ, Sun WJ, Yang YC, Wei MY. Association of fear of falling and low physical activity with fall risk among older Taiwanese community-dwellers. BMC Public Health [Internet]. 2024;24(1):01-10. [cited 2025 Aug 6]. Available from: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20467-z.

[3] Pena SB, Guimarães HCQCP, Lopes JL, Guandalini LS, Taminato M, Barbosa DA, Barros ALBL. Fear of falling and risk of falling: A systematic review and meta-analysis. Acta Paul Enferm. 2019;32(4):456-63. Available from: http://dx.doi.org/10.1590/1982-0194201900062.

[4] Göktaş A, İnal Ö, Özkan E, Özdinç S. The fear of falling, physical activity, and quality of life in elderly after COVID-19. SAGE Open [Internet]. 2023;13(4). [cited 2025 Aug 6]. Available from: /doi/pdf/10.1177/21582440231213473?download=true.

[5] Curcio CL, Wu YY, Vafaei A, De Souza Barbosa JF, Guerra R, Guralnik J, et al. A regression tree for identifying risk factors for fear of falling: The International Mobility in Aging Study (IMIAS). J Gerontol Ser A [Internet]. 2020;75(1):181-88. [cited 2025 Aug 6]. Available from: https://dx.doi.org/10.1093/gerona/glz002.

[6] Lavedán A, Viladrosa M, Jürschik P, Botigué T, Nuín C, Masot O, et al. Fear of falling in community-dwelling older adults: A cause of falls, a consequence, or both? PLoS One [Internet]. 2018;13(3). [cited 2025 Jul 7]. Available from: https://pubmed.ncbi.nlm.nih.gov/29596521/.

[7] Asai T, Oshima K, Fukumoto Y, Yonezawa Y, Matsuo A, Misu S. The association between fear of falling and occurrence of falls: A one-year cohort study. BMC Geriatr. 2022;22(1).

[8] Schoene D, Heller C, Aung YN, Sieber CC, Kemmler W, Freiberger E. A systematic review on the influence of fear of falling on quality of life in older people: Is there a role for falls? Clin Interv Aging [Internet]. 2019;14:701. [cited 2025 May 1]. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC6514257/.

[9] Delbaere K, Crombez G, Vanderstraeten G, Willems T, Cambier D. Fear-related avoidance of activities, falls and physical frailty. A prospective community-based cohort study. Age Ageing [Internet]. 2004;33(4):368-73. [cited 2025 Jul 20]. Available from: https://dx.doi.org/10.1093/ageing/afh106.

[10] Tinetti ME, Mendes de Leon CF, Doucette JT, Baker DI. Fear of falling and fall-related efficacy in relationship to functioning among community-living elders. Journals Gerontol. 1994;49(3): M140-M147.

[11] Delbaere K, Close JCT, Mikolaizak AS, Sachdev PS, Brodaty H, Lord SR. The Falls Efficacy Scale International (FES-I). A comprehensive longitudinal validation study. Age Ageing [Internet]. 2010;39(2):210-16. [cited 2025 Mar 9]. Available from: https://pubmed.ncbi.nlm.nih.gov/20061508/.

[12] Dias RC, Freire MTF, Santos ÉGS, Vieira RA, Dias JMD, Perracini MR. Characteristics associated with activity restriction induced by fear of falling in community-dwelling elderly. Rev Bras Fisioter. 2011;15(5):406-13.

[13] Deshpande N, Metter EJ, Lauretani F, Bandinelli S, Guralnik J, Ferrucci L. Activity restriction induced by fear of falling and objective and subjective measures of physical function: A prospective cohort study. J Am Geriatr Soc [Internet]. 2008;56(4):615-20. Available from: https://pubmed.ncbi.nlm.nih.gov/18312314/.

[14] Pena SB, Cristina H, Carvalho Q, Guimarães P, Lopes JL, Guandalini LS, et al. Medo de cair e o risco de queda: Revisão sistemática e metanálise. [Fear of falling and risk of falling: Systematic review and meta-analysis]. Acta Paul Enferm [Internet]. 2019 Aug 12;32(4):456-63. [cited 2025 Aug 6]. Available from: https://www.scielo.br/j/ape/a/ZyCRfysdCKcmNYnvcYy3VBv/?lang=pt.

[15] Araya AX, Iriarte E. Fear of falling among community-dwelling sedentary and active older people. Investig y Educ en Enferm [Internet]. 2021;39(1):e13. [cited 2025 Aug 2]. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7987280/.

[16] Biswas I, Adebusoye B, Chattopadhyay K. Risk factors for falls among older adults in India: A systematic review and meta-analysis. Heal Sci Reports [Internet]. 2022;5(4):e637. [cited 2025 Jun 2]. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9213836/.

[17] De Vet HCW, Terwee CB, Mokkink LB, Knol DL. Measurement in medicine: A practical guide. meas med a pract guid [Internet]. 2011;01-338. [cited 2023 Jun 29]. Available from: https://www.cambridge.org/core/books/measurement-in-medicine/8BD913A1DA0ECCBA951AC4C1F719BCC5.

[18] Yardley L, Beyer N, Hauer K, Kempen G, Piot-Ziegler C, Todd C. Development and initial validation of the Falls Efficacy Scale-International (FES-I). Age Ageing [Internet]. 2005;34(6):614-19. [cited 2025 Apr 30]. Available from: https://dx.doi.org/10.1093/ageing/afi196.

[19] Sharma A, D'souza SA. Developing a scale to assess balance confidence in indian community dwelling older adults. Indian J Occup Ther [Internet]. 2008;40(2):33-47. Available from: http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=a9h&AN=36432618&site=ehost-live&authtype=sso&custid=s9872838.

[20] Scheffer AC, Schuurmans MJ, Van dijk N, Van der hooft T, De rooij SE. Fear of falling: Measurement strategy, prevalence, risk factors and consequences among older persons. Age and Ageing. 2008;37:19-24.

[21] Juwita CP, Damayanti R. The impact of self-efficacy on physical activity in the elderly. Int J Community Med Public Heal [Internet]. 2022;9(5):2101-05. [cited 2025 Aug 6]. Available from: https://www.ijcmph.com/index.php/ijcmph/article/view/9687.

[22] Xie L, Ma W, Du K, Huang Y, Li A, Wang H, et al. Association between exercise self-efficacy and physical activity in elderly individuals: A systematic review and meta-analysis. Front Psychol. 2025;16.

[23] Mane AB, Sanjana T, Patil PR, Sriniwas T. Prevalence and correlates of fear of falling among elderly population in urban area of Karnataka, India. J Midlife Health [Internet]. 2014;5(3):150. [cited 2025 Mar 8]. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC4195189/.

[24] Bay AA, Ramachandran S, Ni L, Prusin T, Hackney ME. Differences in balance confidence, fear of falling, and fall risk factors among white and black community-dwelling older adults. J Geriatr Phys Ther [Internet]. 2023;46(2):122-31. [cited 2025 May 13]. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC10189616/.

[25] Demircioglu-Karagoz A, Sahin UK, Dag O, Sari IF. Fear of falling is a top issue for older adults with a history of falling: Multidimensional perspective. Psychogeriatrics [Internet]. 2025;25(3):e70029. [cited 2025 Aug 2]. Available from: /doi/pdf/10.1111/psyg.70029.

[26] Smith ML, Ory MG. Multi-directional nature of falls among older adults: A rationale for prevention and management. Front Public Heal [Internet]. 2023;11:1117863. [cited 2025 Aug 6]. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9989446/.
[27] Chen WC, Li YT, Tung TH, Chen C, Tsai CY. The relationship between falling and fear of falling among community-dwelling elderly. Medicine (Baltimore). 2021;100(26):e26492.
[28] Zhang X, Dupre ME, Qiu L, Zhou W, Zhao Y, Gu D. Urban-rural differences in the association between access to healthcare and health outcomes among older adults in China. BMC Geriatr. 2017;17(1):151.
[29] Martínez-Arnau FM, Prieto-Contreras L, Pérez-Ros P. Factors associated with fear of falling among frail older adults. Geriatr Nurs (Minneap) [Internet]. 2021;42(5):1035-41. [cited 2025 Jul 19]. Available from: https://www.sciencedirect.com/science/article/pii/S019745722100224X?via%3Dihub.

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