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Investigation of the Number of Falls and Fall Risk Factors in Geriatric Individuals Living in a Nursing Home

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ABSTRACT

Objective: Falls are a major cause of morbidity and mortality among older adults worldwide, highlighting the need to identify fall risk factors, particularly among nursing home residents. This study aimed to evaluate fall risk factors according to fall history in nursing home–dwelling geriatric individuals and to examine the association between these factors and the number of falls.

Materials and Methods: This cross-sectional study included geriatric individuals living in nursing homes who were classified as fallers (n=54) or non-fallers (n=66). Participants' demographic characteristics and fall-related risk factors were recorded. Comorbidity was assessed using the Charlson Comorbidity Index. Physical performance was evaluated using gait speed, the 5-Repetition Sit-to-Stand Test, and handgrip strength. Physical activity level was assessed using the Physical Activity Scale for the Elderly. Sarcopenia risk was evaluated using the SARC-F questionnaire. Nutritional status was assessed using the Mini Nutritional Assessment. Incontinence severity was evaluated using the Incontinence Severity Index, and activities of daily living (ADL) were assessed using the Katz Index of ADL.

Results: Fallers were older, used more medications, had a greater comorbidity burden, and demonstrated poorer physical performance and lower activity levels, a higher risk of sarcopenia, poorer nutritional status, greater incontinence severity, and reduced independence in ADL. Furthermore, fall frequency was significantly associated with assistive device use, gait speed, and nutritional status ($p<0.05$).

Conclusion: These findings demonstrate that multifactorial, targeted interventions addressing physical performance, mobility, and nutrition are essential for reducing fall risk and recurrent falls in geriatric individuals.

Keywords: Fall, geriatric individual, malnutrition, physical performance, sarcopenia.

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INTRODUCTION

Aging is characterized by various changes in sensory, cognitive, and neuromotor domains that can lead to balance and gait disturbances. Gait disturbances resulting from these changes are among the main causes of recurrent falls and significantly increase the risk of morbidity and mortality in geriatric individuals. Research shows that approximately 30% of individuals aged 65 years and older fall each year; this rate increases to 40% among individuals aged 85 years and older. The frequency of falls has been reported to be even higher among nursing home residents.[1,2]

Reported fall risk factors among geriatric individuals living in different societies vary considerably. Geriatric individuals are more vulnerable to injury because of a greater burden of comorbid conditions, age-related physiological changes, and a reduced capacity for rapid functional recovery. This situation further increases the risk of falls. The etiology of falls is generally multifactorial and results from the interaction of predisposing and precipitating factors classified as intrinsic and extrinsic factors.[3,4] Intrinsic factors include age-related deterioration in postural control systems, proprioceptive deficits, declines in vision and vestibular function, gait disorders, cognitive decline and dementia, polypharmacy, orthostatic hypotension, chronic diseases, sarcopenia, and frailty syndrome. These factors reduce an individual's ability to maintain or restore balance. Extrinsic factors, on the other hand, are related to the physical characteristics of the geriatric individual's environment and the use of assistive devices.[4–6]

Geriatric individuals living in nursing homes have been shown to have a higher likelihood of falling because of cognitive decline, multiple illnesses, reduced self-care abilities, and weakened social support.[2,6] Considering that falls cause hundreds of thousands of deaths worldwide each year, a detailed examination of the causes of falls in these settings is essential for the development of preventive strategies. Although many individual fall risk factors have been investigated previously, the present study provides a comprehensive evaluation of multiple fall-related factors among nursing home residents and examines their association with fall frequency. This integrated approach may improve clinical decision-making by helping clinicians identify the most relevant factors requiring intervention and supporting the development of individualized, multidimensional fall prevention programs. Accordingly, the aim of this study was to evaluate fall risk factors according to fall history in geriatric individuals living in nursing homes and to examine the association between these factors and the number of falls.

KEY MESSAGES

- Nursing home–dwelling geriatric individuals with a history of falls had poorer physical performance, higher comorbidity and medication use, poorer nutritional status, greater incontinence severity, higher sarcopenia risk, and lower independence in activities of daily living (ADL) than non-fallers.
- Fall frequency was significantly associated with assistive device use (walker), slower gait speed, and poorer nutritional status.
- Comprehensive, targeted interventions focusing on mobility, physical performance, and nutritional optimization are critical for reducing fall risk and preventing recurrent falls in geriatric individuals.

METHODS

Study Design

This cross-sectional study was conducted between January 2024 and August 2025 in four nursing homes located in Ankara province. Participants were classified into faller and non-faller groups based on their self-reported history of falls during the previous 12 months. Comparisons between the groups were performed to evaluate differences in fall-related risk factors, and correlation analyses were conducted to examine the association between these factors and the number of falls. The necessary ethics committee approval for conducting the study was obtained from Ethics Committee of Ankara Yıldırım Beyazıt University, Faculty of Health Sciences (Approval Number: 2022/19-1252, Date: 08.12.2022), and the study was conducted in accordance with the principles of the Declaration of Helsinki. Volunteers aged 65 years and older who were ambulatory with or without assistive devices, scored 24 points or higher on the Standardized Mini-Mental State Examination, and were able to communicate were included in the study. Individuals with dyslexia or aphasia and those who were illiterate were not included in the study. Before the study, participants were informed about the purpose and content of the research both verbally and in writing through an informed consent form.

Individuals who met the study criteria were divided into two groups, "Fallers" and "Non-fallers," based on their fall status during the previous 12 months. As part of the study, the sociodemographic characteristics of all individuals were recorded.

Sociodemographic Information

Individuals' age, sex, marital status, educational level, number of medications used, length of stay in the nursing home, number of falls, use of assistive devices, vertigo, orthostatic hypotension, and vision and hearing problems were assessed.

Comorbidities

Comorbidities were recorded using the Charlson Comorbidity Index. In this index, diseases are assigned 1, 2, 3, or 6 points according to their type. A total score >5 indicates a high mortality and morbidity rate.[7]

Physical Performance

Physical performance assessment included gait speed and lower- and upper-extremity muscle strength.

Gait Speed

A 10-meter gait test was used to assess individuals' gait speed. Individuals were asked to walk a predetermined distance of 10 meters at their usual walking speed. The time required to walk the distance was measured with a stopwatch. Gait speed was recorded in meters per second.[8]

Lower Extremity Muscle Strength

Lower extremity muscle strength was evaluated using the 5-Repetition Sit-to-Stand Test (5STS). For the test, individuals were asked to sit on a chair without armrests, with their backs against the chair, and to stand up and sit down 5 times. The total time required to complete the test was recorded in seconds.[9]

Grip Strength

Handgrip strength was measured using a Jamar hydraulic hand dynamometer. For the measurement, individuals were asked to remain seated, keep their elbows flexed at their sides, and squeeze the dynamometer with maximum force. The assessment was performed three times for each hand, and the mean value was recorded in kilograms.[10]

Physical Activity

The 12-item Physical Activity Scale for the Elderly (PASE), which assesses leisure-time, household, and work-related activities, was used to evaluate physical activity levels. The scale ranges from 0 to 400 points, with higher scores indicating higher physical activity levels.[11]

Sarcopenia

The SARC-F scale, developed as a screening tool to assess the risk of sarcopenia, was used. The scale consists of 5 items assessing strength, assistance with walking, rising from a chair, climbing stairs, and falls. A total score ≥4 indicates a symptomatic condition for sarcopenia.[12]

Nutritional Status

The Mini Nutritional Assessment (MNA) tool was used to assess individuals' nutritional status. The questionnaire consists of 4 sections and 18 items, including anthropometric, general, dietary, and subjective assessments. Individuals' nutritional status is classified as normal (≥24), at risk of malnutrition (17-23.5), or malnourished (<17) based on the total MNA score.[13]

Incontinence Severity

Individuals' incontinence status was assessed by classifying them according to the presence or absence of incontinence. The Incontinence Severity Scale (ISS), developed by Sandvik et al., was used to assess the severity of incontinence among individuals with incontinence.[14] The scale consists of two questions assessing the frequency of urinary leakage and the amount leaked each time. Based on the total score obtained from the scale, incontinence severity was categorized as mild (1–2 points), moderate (3–6 points), severe (8–9 points), or very severe (12 points).

Activities of Daily Living

Activities of daily living (ADL) were assessed using the Katz ADL Index. The index assesses bathing, toileting, dressing, continence, transferring, and eating. Activities performed with assistance were scored as 0, whereas those performed independently were scored as 1. The total score ranges from 0 to 6, with a score of 6 representing full functional ability, 4 reflecting moderate functional capacity, and 2 indicating mild functional impairment.[15]

Sample Size

A pilot study was conducted to determine the sample size based on the gait speed variable. Based on the pilot study data, an effect size of d=0.55 was calculated. According to an a priori power analysis targeting 80% power with a significance level of α=0.05, it was determined that each group should include at least 53 geriatric individuals.

Statistical Analysis

The Statistical Package for the Social Sciences, version 26 (IBM Corp., Armonk, NY, USA), was used for the statistical analysis of the data. The normality of the variables was examined using visual methods (histograms and probability plots) and analytical methods (Kolmogorov-Smirnov and Shapiro-Wilk tests). Variables that were not normally distributed were presented as median (IQR, 25th-75th percentile), and categorical variables were presented as frequencies and percentages. The Mann-Whitney U test was used to analyze nonnormally distributed variables in between-group comparisons. Spearman correlation analysis was used to examine associations between nonnormally distributed variables. All analyses were performed at a significance level of 0.05.

RESULTS

The study included 66 individuals (30 women and 36 men) with no history of falls, with a median age of 76 (69–80) years,

Table 1. Sociodemographic characteristics of the groups

Characteristic	Fallers (n=54)	Non-fallers (n=66)	p
Age, years, median (IQR)	80 (76–85.25)	76 (69–80)	<0.001*
Female sex, n (%)	31 (57.4)	30 (45.5)	0.193
Number of medications, median (IQR)	7 (5–9)	3 (0–5.25)	<0.001*
Marital status, n (%)			0.710
Married	10 (18.5)	5 (7.6)	
Widowed	44 (81.5)	61 (92.4)	
Education level, n (%)			0.842
Primary school	25 (46.3)	27 (40.9)	
Middle school	5 (9.3)	6 (9.1)	
High school	7 (13.0)	12 (18.2)	
Bachelor's degree	16 (29.6)	18 (27.3)	
Postgraduate	1 (1.9)	3 (4.5)	
Length of stay in the nursing home, years, median (IQR)	4 (1–15)	5 (1–36)	0.363
Assistive device use, n (%)			
None	27 (50.0)	58 (87.9)	<0.001
Walker	9 (16.7)	2 (3.0)	0.011
Single-point cane	17 (31.5)	5 (7.6)	0.001
Tripod cane	1 (1.9)	0	0.450
Rollator	0	1 (1.5)	0.550
Vertigo, present, n (%)	11 (20.4)	6 (9.1)	0.078
Hearing impairment, present, n (%)	15 (27.8)	17 (25.8)	0.773
Visual impairment, present, n (%)	33 (61.1)	32 (48.5)	0.167
Orthostatic hypotension, present, n (%)	8 (14.8)	4 (6.1)	0.080

n: Number; IQR: interquartile range; p: Probability value; p<0.05 indicates statistical significance.

and 54 individuals (31 women and 23 men) with a history of falls, with a median age of 80 (76–85.25) years. The median fall frequency was 0 (0–0) in the non-faller group and 1 (1–2) in the faller group. The length of stay in the nursing home was 3.5 (1.37–7) years for fallers and 5 (2–7) years for non-fallers. The sociodemographic characteristics of the groups are presented in Table 1.

Fall frequency and fall-related risk factors, including comorbidity, gait speed, lower extremity strength, grip strength, physical activity level, sarcopenia, nutritional status, incontinence severity, and level of independence, differed significantly between the groups (p<0.05) (Table 2).

The associations between fall frequency and fall risk factors in geriatric individuals are presented in Table 3. Fall frequency was significantly correlated with walker use, gait speed, and MNA scores (rho=-0.290, p=0.033; rho=-0.352, p=0.009; rho=-0.317, p=0.020).

DISCUSSION

In our study, geriatric individuals living in nursing homes were divided into two groups according to fall status, and fall risk factors were identified; the faller group was characterized by older age, a greater number of medications used, and a higher comorbidity burden. In addition, compared with non-fallers, fallers exhibited poorer physical performance and lower activity levels, a greater risk of sarcopenia, poorer nutritional status, a higher prevalence of incontinence, and reduced independence in ADL. Furthermore, the significant associations between fall frequency and walker use, gait speed, and nutritional status among fallers indicate that mobility and nutrition play important roles in recurrent falls.

In this study, fallers were older, used a greater number of medications, had a higher mortality risk, and used assistive devices more frequently than non-fallers. In addition, among fallers, recurrent fall frequency was significantly associated

Table 2. Comparison of the groups in terms of fall frequency and fall risk factors

Variable	Fallers (n=54), median (IQR)	Non-fallers (n=66), median (IQR)	p
Charlson Comorbidity Index	1 (1–1)	0 (0–1)	<0.001*
Gait speed, m/s	0.49 (0.35–0.86)	0.91 (0.71–1.06)	<0.001*
5STS, s	15.73 (12.59–20.28)	13.41 (10.27–16.07)	0.002*
Right handgrip strength, kg	19.95 (13.26–24.42)	23.01 (17.13–30.0)	0.024*
Left handgrip strength, kg	17.53 (9.87–23.49)	19.80 (15.49–26.0)	0.038*
PASE score	8.60 (2.20–24.03)	13.94 (6.73–34.83)	0.039*
SARC-F score	3 (1–6)	1 (0–2)	<0.001*
MNA score	23 (19.50–26.62)	26.0 (23.50–27.0)	0.005*
Incontinence severity, n (%)			0.013*
None	28 (51.9)	49 (74.2)	
Mild	9 (16.7)	11 (16.7)	
Moderate	10 (18.5)	1 (1.5)	
Severe	1 (1.9)	1 (1.5)	
Very severe	6 (11.1)	4 (6.1)	
Katz ADL Index score	5 (5–6)	6 (6–6)	<0.001*

5STS: 5-Repetition Sit-to-Stand Test; ADL: Activities of daily living; MNA: Mini Nutritional Assessment; PASE: Physical Activity Scale for the Elderly; IQR: Interquartile range; m/s: Meters per second; s: Seconds; kg: kilograms; p<0.05 indicates statistical significance.

Table 3. Relationship between fall frequency and fall risk factors among fallers

Variable	rho	p
Number of medications	0.123	0.376
Assistive device use		
None	0.242	0.077
Walker	-0.290	0.033*
Single-point cane	-0.001	0.992
Tripod cane	-0.092	0.507
Rollator	–	–
Charlson Comorbidity Index	0.133	0.339
Age	0.171	0.217
Gait speed	-0.352	0.009*
5STS	0.246	0.073
Right handgrip strength	0.016	0.907
Left handgrip strength	0.018	0.889
PASE	0.076	0.584
SARC-F	0.210	0.128
MNA	-0.317	0.020*
Incontinence severity	0.007	0.962
Katz ADL Index	-0.264	0.054

5STS: 5-Repetition Sit-to-Stand Test; ADL: Activities of daily living; MNA: Mini Nutritional Assessment; PASE: Physical Activity Scale for the Elderly; rho: Spearman correlation coefficient; p<0.05 indicates statistical significance.

with walker use. These findings are consistent with previous evidence indicating that falls in geriatric individuals are multifactorial and influenced by intrinsic factors, such as age and health status, as well as extrinsic factors, including assistive device use and environmental conditions.[5] Previous studies have also reported that recurrent falls are more common in geriatric individuals with impaired mobility, balance deficits, and greater functional limitations, all of which increase the likelihood of requiring walking aids.[16] However, some studies have suggested that appropriately prescribed assistive devices may improve walking stability and reduce fall risk.[17] This apparent discrepancy may be explained by the fact that our analysis focused exclusively on individuals with a history of falls and examined factors associated with recurrent fall frequency rather than factors associated with the occurrence of falls. Therefore, the observed association is more likely to indicate that the need for a walking aid reflects greater underlying mobility and balance impairments rather than an adverse effect of the devices themselves. In other words, the need for a walking aid may serve as a marker of greater functional impairment and susceptibility to recurrent falls. These findings highlight the importance of comprehensive mobility assessment and individualized fall prevention strategies for nursing home residents who require walking aids.

This study showed that fallers had significantly slower gait speed than non-fallers (0.50 vs. 0.92 m/s), and gait speed was significantly associated with recurrent fall frequency

among fallers. These findings are consistent with previous studies reporting that poor physical performance, particularly reduced gait speed, is associated with an increased risk of falls among nursing home residents.[6,18] Similarly, previous studies have demonstrated that geriatric individuals with slower gait speed are more likely to experience recurrent falls.[6,19] Bozkurt et al.[20] reported that a gait speed below 0.8 m/s is a risk factor for falls. However, another study found no significant association between gait speed and falls among nursing home residents.[21] This difference may be explained by differences in study populations and outcome measures, as our analysis was restricted to fallers and examined factors associated with recurrent fall frequency rather than fall occurrence. These findings highlight the importance of gait speed assessment as a simple and practical clinical measure for identifying nursing home residents who may be at greater risk of recurrent falls.

This study showed that fallers had significantly lower handgrip strength in both the dominant and non-dominant hands than non-fallers. These findings are consistent with previous studies demonstrating that low handgrip strength is associated with an increased risk of falls among nursing home residents.[6,22,23] Sürmeli et al.[6] reported that low handgrip strength was independently associated with falls, while other studies have shown that fallers exhibit significantly weaker handgrip strength than non-fallers and that reduced grip strength is associated with falls before and after hospitalization.[6,22,23] However, among individuals with a history of falls, handgrip strength was not associated with recurrent fall frequency in this study. The lack of an association between handgrip strength and recurrent fall frequency may be explained by the fact that the analysis was restricted to fallers, suggesting that although reduced handgrip strength may distinguish fallers from non-fallers, it may have limited value in explaining recurrent fall frequency. These findings suggest that handgrip strength may be useful for identifying geriatric individuals at risk of falls but should be interpreted together with other functional and clinical factors when evaluating the risk of recurrent falls.

In the present study, lower extremity muscle strength was assessed using the 5STS, and fallers demonstrated longer completion times (15.74 s) than non-fallers (13.42 s). However, no association was found between fall frequency and lower extremity muscle strength. Numerous studies using different measures of lower extremity muscle strength have reported that reduced muscle strength increases the risk of falls.[24,25] Oya et al.[24] suggested knee extensor muscle strength as a potential tool for fall risk assessment and found lower muscle strength in fallers. Similarly, Aoyama et al.[25] reported that low muscle strength was associated with a higher fall frequency in geriatric women. Furthermore, a systematic review published in 2023 reported that a 5STS score >15 s, which reflects poorer lower extremity muscle strength, may be associated with a high risk of falls.[26] Although our finding that fallers had poorer lower extremity muscle strength is consistent with previous evidence, muscle strength was not associated with fall frequency. This may be attributable to the relatively low number of falls among participants with a history of falls. Furthermore, fear of recurrent falls may lead geriatric individuals to restrict their daily activities and avoid high-risk situations, potentially attenuating the association between muscle strength and fall frequency.

In this study, fallers had lower physical activity levels than non-fallers. This finding is consistent with previous studies reporting that fallers generally demonstrate lower physical activity levels, likely because of declines in physical function following a fall.[27,28] Trevisan et al.[28] found that nursing home residents with a history of falls exhibited lower physical activity levels and poorer physical function. In contrast, evidence regarding the association between physical activity and fall frequency remains inconsistent. One study reported no significant association between physical activity and a single fall event, whereas higher physical activity levels were associated with a lower risk of recurrent falls.[29] The absence of an association between physical activity level and fall frequency in our study may be explained by the relatively low number of recurrent falls among fallers and by activity restriction resulting from fear of falling.

In this study, SARC-F scores were significantly higher in fallers than in non-fallers; however, no association was found between SARC-F scores and recurrent fall frequency among fallers. Notably, the mean SARC-F score among fallers was 3, indicating that most individuals were at low risk of sarcopenia. Cruz-Jentoft et al.[30] reported that sarcopenia increases the risk of falls because reductions in muscle strength, muscle mass, gait speed, and physical performance contribute to higher fall rates among geriatric individuals with sarcopenia. In contrast, other studies have found no significant association between sarcopenia and falls.[31,32] Cawthon et al.[32] found no association between sarcopenia and a history of falls in community-dwelling geriatric men and suggested that falls may be more strongly influenced by impaired balance, neuromuscular coordination, reflex responses, and environmental factors than by muscle mass or strength alone. The lack of an association between SARC-F scores and recurrent fall frequency in our study may be explained by the low risk of sarcopenia among fallers, as reflected by their mean SARC-F score below the diagnostic cutoff, and by the multifactorial nature of recurrent falls.

In the present study, fallers had lower MNA scores than non-fallers, and among fallers, lower MNA scores were associated with a higher recurrent fall frequency. Consistent with our

findings, malnutrition has been reported to be significantly associated with an increased risk of falls in older adults because inadequate protein and energy intake may lead to reduced muscle mass, loss of muscle strength, and impaired postural stability.[33] Similarly, Eckert et al.[34] reported that malnutrition was associated with an increased risk of falls in community-dwelling older adults, while studies conducted among nursing home residents have also shown that lower MNA scores are associated with a higher fall frequency and that malnutrition predicts adverse outcomes, particularly falls. In contrast, Vivanti et al.[35] found that malnutrition was not directly associated with the number of falls during hospitalization, and Yücel et al. reported no difference in the number of falls between sarcopenic and non-sarcopenic individuals with respect to malnutrition risk.[31,35] These inconsistent findings may be explained by differences in study populations, care settings, follow-up periods, and outcome measures, as our study specifically examined recurrent fall frequency among nursing home residents. These findings suggest that routine nutritional assessment and timely nutritional interventions may contribute to reducing recurrent falls and should be considered an integral component of fall prevention strategies for nursing home residents.

In this study, incontinence was more common in fallers than in non-fallers, and moderate-to-severe incontinence was also more prevalent among fallers. However, no association was found between incontinence severity and recurrent fall frequency among fallers. These findings are consistent with previous studies reporting that geriatric individuals with incontinence have an increased risk of falls because urinary urgency and nocturia may increase the likelihood of falling.[1,36] Similarly, incontinence has been recognized as an important contributor to fall risk in geriatric individuals because age-related urinary symptoms often increase exposure to high-risk situations, particularly during nighttime mobility.[37] In contrast, Bernardes et al.[38] found no significant difference in fall frequency between individuals with and without urinary incontinence. The lack of an association between incontinence severity and recurrent fall frequency in our study may be explained by the absence of more detailed assessments of incontinence characteristics, such as incontinence type, frequency, and nocturnal symptoms. In addition, factors such as muscle strength, balance, environmental conditions, and medication use may limit the role of incontinence as an independent determinant of falls.

In this study, fallers were more dependent in ADL than non-fallers; however, ADL dependency was not associated with recurrent fall frequency among fallers. Consistent with our findings, Damar et al.[39] reported that nursing home residents with lower Katz ADL scores had a higher risk of falls. Similarly, Sürmeli et al.[6] found that dependence in ADL was associated with fall risk in nursing home residents and that malnutrition, muscle strength, gait speed, and age were also independent determinants of falls. However, Katz ADL scores primarily reflect functional dependence and may not fully capture the factors influencing recurrent fall frequency. The lack of an association between ADL dependency and recurrent fall frequency in our study may be explained by the generally mild level of dependency and relatively preserved cognitive function of the participants, allowing them to maintain most daily activities despite a history of falls.

Although several individual fall-related risk factors have been investigated previously, our study provides a comprehensive evaluation of multiple clinical, functional, nutritional, and geriatric parameters within the same population of nursing home residents. Unlike many previous studies that focused primarily on the occurrence of falls among community-dwelling geriatric individuals or evaluated a limited number of risk factors, our study simultaneously examined factors associated with both fall status and recurrent fall frequency in a nursing home population. This comprehensive approach enabled the identification of mobility- and nutrition-related factors specifically associated with recurrent falls, providing findings that may support more targeted fall prevention strategies in institutionalized geriatric individuals.

Limitations

Several limitations of this study should be acknowledged. First, although the study was multicenter, the inability to reach the entire target population and the relatively small sample size may limit the generalizability of the findings to geriatric individuals living in nursing homes. Second, fall history and fall frequency were assessed based on self-reports, and the possibility of recall bias cannot be excluded. Finally, some important fall risk factors, such as degenerative and other diseases (neurological, orthopedic, rheumatological, etc.), cognitive status, balance, depression, and environmental risks within nursing homes, were not comprehensively evaluated in this study.

CONCLUSION

This study demonstrated that geriatric individuals with a history of falls were more disadvantaged than non-fallers in terms of physical performance, physical activity, sarcopenia risk, nutritional status, incontinence, and ADL. In addition, the significant associations between fall frequency and walker use, gait speed, and nutritional status suggest that mobility limitations and undernutrition may be influential factors in recurrent falls. Effective fall prevention strategies should consider these multiple factors to reduce fall frequency and improve the quality of life of geriatric individuals. Furthermore, we believe that interventions aimed at reducing fall risk in geriatric individuals should focus on improving physical performance, supporting mobility, and optimizing nutritional status.

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