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Email : editorijhess@gmail.com

# Overview Of The Risk Of Falls In The Elderly At The Dharma Bhakti Kasih Nursing Home In Surakarta

**Devi Natasya Faradilla[1)],Ika Silvitasari[2)]**
[1,2)] Bachelor of Nursing Study Program, Universitas 'Aisyiyah Surakarta

*Corresponding Author
Email : devinatasya.students@aiska-university.ac.id

***Abstract***

*Falls are a major health problem in the elderly, contributing to high rates of injury, decreased independence, and increased need for long-term care. Falls not only impact physical health but also create a fear of activity, thus worsening the quality of life for the elderly. Increasing age, decreased musculoskeletal function and balance, and unsafe living conditions are factors that increase the risk of falls. This study aims to determine the description of the risk of falling in the elderly at the Dharma Bhakti Kasih Surakarta Nursing Home. The research design used is descriptive quantitative with observation method. The number of respondents was 30 elderly selected using purposive sampling technique. This research instrument used the Morse Fall Scale (MFS) to assess the level of fall risk. Results: The study shows that based on the characteristics of respondents based on initial age 60-75 years (50%), the majority of gender is female 18 respondents (60%). Most of the elderly have a low risk of falling (50%), no risk of falling (40%) and only a small portion have a high risk of falling (10%). The majority of elderly have a low risk of falling (50%) of 30 respondents.*

***Keywords: Elderly, Fall Risk, Nursing Home.***

## INTRODUCTION

Aging is a natural process experienced by every individual, where older adults experience a decline in musculoskeletal function, balance, and vision, significantly increasing the risk of falls. Globally, the World Health Organization reports that 28-35% of older adults aged 65 and over experience falls each year, with the figure increasing to 32-42% for those over 70. In Indonesia, the prevalence reaches 20-40% per year. This phenomenon not only causes physical injuries such as fractures but also limits the mobility and independence of older adults in daily activities.

In Indonesia, the Indonesian Family Life Survey shows that the incidence of falls among seniors aged 65 is around 30%, increasing to 50% in those aged 80, with the highest incidence in Central Java reaching 61%. Data from the Central Java Central Statistics Agency recorded 1,836 falls among seniors, primarily on terraces and in bathrooms, which worsens quality of life due to fear of activity.

Falls in older adults have multidimensional impacts, including physical injuries such as fractures and head trauma, as well as psychological ones such as depression, anxiety, and fear of recurrent falls, which reduce quality of life. Socially, this can lead to isolation and dependence on long-term care, while intrinsic factors such as advanced age, cognitive impairment, and a history of falls, as well as extrinsic factors such as slippery surfaces and poor lighting, increase the risk.

Previous research has shown that elderly people in nursing homes have a high risk of falling, up to 82.9%, with the majority being women over 70. However, no such study has been conducted at the Dharma Bhakti Kasih Nursing Home in Surakarta. Preliminary research at the facility found that 40% of elderly people had fallen, with 30% using walking aids but still having mobility difficulties, indicating a lack of early risk identification.

Although the Morse Fall Scale has been widely used, its application in local nursing homes is limited, necessitating a specific profile for prevention. Factors such as polypharmacy and sleep disturbances have rarely been comprehensively explored in the Surakarta nursing home context.

This study aims to describe the risk of falls in the elderly at the Dharma Bhakti Kasih Nursing Home in Surakarta using the Morse Fall Scale, including age and gender characteristics, to support early prevention. The urgency is high because falls are a leading cause of unintentional injuries

globally and nationally, with a high prevalence in nursing homes requiring environmental modifications and education to improve safety. Its novelty lies in the first description of fall risk in the nursing home, differing from previous studies that focused on environmental factors or dementia, thus contributing local data for geriatric health policy.

## RESEARCH METHODS

This study uses a quantitative descriptive approach with an observational method, aiming to factually describe the phenomenon of fall risk in the elderly based on empirical field data without intervention or variable manipulation. This non-interventional approach involves collecting primary data through interviews and direct observation, as well as secondary data from nursing home records, in accordance with the post-positivist paradigm that emphasizes objective measurement and limited generalization. Sugiyono (2020) defines quantitative descriptive research as a method that describes the status of a population at a specific point in time through numerical data to test descriptive hypotheses, while Emzir (2013, cited in the 2023 study) emphasizes the use of formal instruments to control variables in the nursing context.

The primary instrument was the Morse Fall Scale (MFS), a standardized scale with six components (fall history, secondary diagnosis, walking aid, IV therapy, gait, mental status) that yields a score of 0-125, categorized as no risk (0-24), low (25-50), and high (>51); this instrument was not retested for validity-reliability because it has been validated (r=0.499, Cronbach's alpha=0.90). Univariate data analysis techniques included editing, coding, entry, and tabulation using SPSS for frequencies and percentages, presented in a distribution table of respondent characteristics and fall risk. Creswell and Creswell (2018) explain that in a descriptive quantitative design, univariate analysis is effective for describing a single variable such as fall risk, while Sudaryono (in the context of 2022) supports the use of descriptive statistics for observational nursing data.

The population was all 40 elderly people at the Dharma Bhakti Kasih Nursing Home in Surakarta, with a sample of 30 elderly people selected through purposive sampling based on inclusion criteria (age ≥60 years, willing to participate, able to communicate) and exclusion criteria (emergency conditions, tantrums, severe hearing loss, total bedrest). This technique ensures relevant representation without the Slovin formula, in accordance with descriptive practices for small populations. Sugiyono (2020) stated that purposive sampling is suitable for descriptive research when specific criteria are needed, supported by Emzir (2023) who emphasized bias control through inclusion-exclusion in quantitative health studies.

The procedure begins with the preparation stage (literature study, ethical permit, proposal, preliminary study), implementation (briefing of 7th semester student enumerators, informed consent, filling out the MFS via observation-interview), and the end (data editing, SPSS analysis, and reporting). The location is at the Dharma Bhakti Kasih Nursing Home in Surakarta in October 2025, with ethics upholding informed consent, anonymity, confidentiality, veracity, and justice. Creswell (2018) describes the quantitative procedure as a systematic cycle from preparation to ethics, while Sudaryono (2022) adds the importance of trained enumerators for nursing field observations.

## RESULTS AND DISCUSSION

### Research Location Overview

The Dharma Bhakti Kasih Nursing Home in Surakarta is located on Jalan Kalingga Utara V1, Bayan RT 007/027, Kadipiro, Banjarsari. Formerly an abandoned Kanisius school, this building was initiated by the Dharma Bhakti Kasih Foundation as a social home for the elderly. Construction began in May 2001 under the leadership of Maria Agustine Miyatun, BKK, and was inaugurated on July 5,

2003 by Mayor H. Slamet Suryanto and Mgr. Ignatius Suharyo; officially under the foundation as of December 12, 2008.

Facilities include office space, meeting rooms, dining rooms, <12 bathrooms, 3 laundry/drying rooms, kitchen, yard, garden, multipurpose hall for worship, boys/girls wards, and VIP rooms; currently accommodating 40 seniors.

**Table 1. Frequency Distribution of Respondent Characteristics Based on Age at the Dharma Bhakti Kasih Nursing Home in Surakarta**

| Characteristics | F | % |
|---|---|---|
| Age | | |
| 60-75 Years | 15 | 50 |
| 76-89 Years | 14 | 46.7 |
| ≥ 90 years | 1 | 3.3 |
| Total | 30 | 100 |

Based on the data presented, 30 elderly respondents participated in this study. The majority of respondents were aged 60–75 years (50%), followed by those aged 76–89 years (46.67%), and only a small proportion were aged 90 years and above (3.33%).

**Table 1. Frequency Distribution of Respondent Characteristics Based on Gender at the Dharma Bhakti Kasih Nursing Home in Surakarta**

| Characteristics | F | % |
|---|---|---|
| Gender | | |
| Man | 12 | 40 |
| Woman | 18 | 60 |
| Total | 30 | 100 |

Based on data from 30 respondents, the distribution by gender shows that the majority of respondents were female (60%), while the remaining 40% were male. This data indicates that women outnumbered men in this study.

**Table 3. Frequency Distribution of Respondents' Fall Risk Based on Demographic Data at the Dharma Bhakti Kasih Nursing Home in Surakarta**

| Variables | F | % |
|---|---|---|
| Risk of Falling | | |
| No Risk | 12 | 40 |
| Low Risk | 15 | 50 |
| High Risk | 3 | 10 |
| Total | 30 | 100 |

Based on data from 30 respondents, the majority of elderly people (50%) were in the low-risk fall category. Furthermore, 40% of respondents (12%) were in the no-risk fall category, while 10% of respondents (3%) were in the high-risk fall category.

## Discussion

### Respondent Description Based on Demographic Data at the Dharma Bhakti Kasih Nursing Home in Surakarta

Characteristics of Respondents Based on Age at the Dharma Bhakti Kasih Nursing Home in Surakarta. The study found that the majority of elderly residents were between the ages of 60 and 75. This finding suggests that the majority of nursing home residents are in the early elderly age group, a period during which physiological functions such as balance, muscle strength, and postural stability begin to decline, increasing the risk of falls (Winata, 2022).

Life expectancy for the elderly in Indonesia generally begins at age 60, in accordance with the provisions of Law Number 13 of 1998 concerning the Welfare of the Elderly, which stipulates that a person is categorized as elderly when they reach the age of ≥60 years (Ministry of Health of the Republic of Indonesia, 2020). National data shows that life expectancy for the Indonesian population continues to increase from around 69.8 years in 2010 to more than 71.8 years in 2022 (BPS, 2022), thereby increasing the proportion of the population entering the elderly group. In addition, WHO estimates show that someone who has reached the age of 60 in Indonesia still has an additional life

expectancy of around 17–19 years, so statistically the elderly can live to around 77–79 years (WHO, 2023).

This is in line with research by Anggraeni and Aryati (2024) who found that most elderly people living in nursing homes are in the 60–90 year age range, where this age group tends to experience declining physical condition, risk of chronic disease, and increased vulnerability to falls. Biological factors such as degeneration of the musculoskeletal system, decreased sensory function, and balance disorders make it increasingly difficult for the elderly to maintain posture and respond to the threat of falls. Research (Zulfah et al., 2025) states that impaired walking ability, impaired vision, and environmental conditions are significant risk factors that increase the incidence of falls in the elderly.

Based on the research results, researchers believe that with increasing age, muscle strength decreases, balance disorders occur, and postural stability decreases. This condition makes the elderly more susceptible to losing their balance when moving or changing positions. Furthermore, advanced age is often accompanied by comorbidities such as hypertension, diabetes, and vertigo, which further increase the risk of falls. Therefore, the elderly group aged 60–75, which makes up the majority at the Dharma Bhakti Kasih Nursing Home in Surakarta, requires special attention in carrying out daily activities.

**Characteristics of Respondents Based on Gender at the Dharma Bhakti Kasih Nursing Home in Surakarta**

The study results show that the majority of elderly people at the Dharma Bhakti Kasih Nursing Home in Surakarta are women. This finding indicates that the number of female elderly living in the home is higher than that of male elderly. This difference reflects demographic trends in the elderly population, where women tend to require more support and assistance in carrying out daily activities than men.

This is in line with research by Sari et al., (2024) which shows that the majority of elderly people living in nursing homes are women (60%). This condition is influenced by women's higher life expectancy compared to men, because women have biological and hormonal advantages that provide protection against various degenerative diseases. The hormone estrogen plays a role in maintaining cardiovascular health, so the risk of heart disease in women tends to be lower during their productive years. In addition, genetically, women have two X chromosomes which makes them more resistant to genetic mutations and infections, in contrast to men who only have one X chromosome (Nabila et al., 2025).

Women also tend to have a stronger immune response and more cautious lifestyles, such as smoking less often or engaging in high-risk activities. Although women experience a decline in muscle mass (sarcopenia) with age, behavioral factors such as high alcohol consumption, smoking, and exposure to physical work and stress in men contribute to shortening their life expectancy (Nuraelah, 2024).

Furthermore, women tend to experience a more rapid decline in muscle mass, osteoporosis, and physical weakness, particularly after entering postmenopause, which increases susceptibility to balance disorders and the risk of falls (Zulfah et al., 2025). Psychological factors, such as a greater fear of falling in women, also influence postural stability. This combination of biological, social, and caregiving factors contributes to women choosing or being placed in nursing homes more often than men (Sari et al., 2024).

The results of this study found that gender influences the risk of falls in the elderly. Elderly women tend to be more susceptible to decreased muscle mass and osteoporosis than men, especially after entering postmenopause. This condition makes women more susceptible to losing their balance and sustaining injuries during falls. Furthermore, women are more likely to live in nursing homes, likely due to higher life expectancy, limited family support, and greater care needs. This combination of biological, social, and supervision factors makes elderly women more likely to require appropriate and intensive fall prevention programs.

**Overview of the Risk of Falls in the Elderly at the Dharma Bhakti Kasih Nursing Home in Surakarta**

The study results showed that the majority of elderly people were in the low fall risk category (50%). This finding indicates that although the majority of elderly people have a low risk of falling, all elderly people in the nursing home still exhibit a potential risk of falling. This situation emphasizes the need for prevention and monitoring efforts, even if the risk level is not high.

Based on the research results, only one respondent aged over 90 years old was found, but three seniors were categorized as high-risk for falls. This indicates that fall risk is not solely influenced by chronological age, but also by physical condition, comorbidities, and other factors. Younger seniors may be at high risk for falls if they experience balance disorders, muscle weakness, a history of previous falls, or certain chronic illnesses.

Furthermore, some seniors are not at risk of falling even though they are over 65. This condition can occur because they still have good physical function, stable balance, no visual impairments, and live in a relatively safe environment. This shows that increasing age does not always increase the risk of falling if health and environmental conditions remain under control.

Most respondents were in the moderate fall risk category. This condition can be influenced by a combination of intrinsic and extrinsic factors. Intrinsic factors include visual impairment, physical weakness and sarcopenia, balance disorders, chronic diseases such as diabetes or stroke, cognitive decline, use of certain medications, and a history of falls. Meanwhile, extrinsic factors such as inadequate lighting, slippery floors, physical obstacles around the residence, and facilities that are not fully secure can also increase the risk of falls. Furthermore, situational factors such as rushed activities and lack of supervision also play a role in increasing the risk.

The findings of this study are in line with researchSari et al., (2024)A study conducted on 30 elderly people at the Pagar Dewa Bengkulu Nursing Home (Panti Tresna Werdha Pagar Dewa Bengkulu) revealed that the low fall risk category accounted for the highest proportion, at 83.3%, while the high fall risk category accounted for 16.7%.Anggraeni and Aryati, (2024)of 91 respondents, which showed that the elderly had a high risk of falling of 22.0%, a low risk of falling of 35.2%, and 42.9% had no risk of falling. In addition, the studyMuladi et al. (2023)A study evaluating the level of environmental safety in relation to fall risk in the elderly using an analytical observational method with the Morse Fall Scale (MFS) instrument showed a significant relationship between environmental factors and fall incidence ($p = 0.000 \leq 0.05$). The study found that 20.5% of the elderly had a high risk of falling, 40.9% a moderate risk, and 38.6% a low risk.

These results align with epidemiological data released by the World Health Organization (WHO) in 2021, which found that approximately 28–35% of elderly people aged ≥65 years experience falls each year, with this figure increasing to 32–42% for those aged >70 years. Data from the Indonesia Family Life Survey (IFLS) indicates that the incidence of falls in elderly people aged ≥65 years reaches approximately 30%, increasing to 50% for those aged ≥80 years.(BKKBN, 2020)This shows that the risk of falling is a significant health problem in the elderly population.

More than half of older adults show signs of mild to moderate cognitive decline, such as forgetfulness, loss of focus, or difficulty remembering recent activities. This condition can increase the risk of falls because older adults are often unaware of environmental hazards.(Safitri Umaroh, 2023).

Seniors who are at high risk of falling tend to experience significant impacts, both physically and psychologically.Nur'amalia et al., (2022)Falls in the elderly can cause injuries ranging from minor to serious, such as fractures, subdural hematomas, bleeding, and even death. In addition to physical injuries, a high risk of falls is also associated with psychological disorders such as anxiety, fear of falling, depression, and decreased social interaction. This fear of falling causes the elderly to limit their physical activity, which can actually worsen the condition due to reduced muscle strength, balance, and functional capacity, thus increasing the risk of falls.

Fall risk management in older adults is carried out through a multifactorial approach that includes physical, environmental, medical, and educational interventions. Fall prevention strategies include gait training, balance exercises, and muscle strengthening, which have been shown to be effective in reducing fall risk in older adults. Environmental modifications are also crucial, such as improving lighting, eliminating slippery floors, installing handrails, and ensuring homes and nursing home facilities are elderly-friendly.(Inriyanti, 2025).

Psychologically, some older adults are easily bored, impatient, or believe their opinions are always right, making it difficult to follow instructions or questions that require time. This requires repetition and a more patient communication approach. This can also exacerbate the risk of falls, as older adults may ignore warnings or safety advice.(Hasibuan, 2024).

Physiologically, physical decline, such as weakened muscle strength, hearing impairment, decreased visual acuity, and slow motor responses, are dominant factors contributing to the risk of falls. As age increases, degenerative processes in the musculoskeletal and nervous systems significantly impact the ability to walk and maintain balance. Some respondents appeared to be walking more slowly, tired more easily, and complained of being susceptible to illness.(Anggraeni & Aryati, 2024).

In older adults with chronic illnesses, the risk of falls increases due to unstable health conditions. Chronic illness can reduce stamina, affect balance, and cause psychological problems such as anxiety or difficulty concentrating, which ultimately interfere with daily activities and increase the risk of falls.(Sari et al., 2024).

Overall, this study shows that the risk of falls in older adults is influenced not only by physical factors, but also by cognitive, psychological, environmental, and comorbid conditions. Therefore, fall prevention efforts in older adults must be comprehensive, encompassing medical approaches, education, environmental modifications, and support in daily activities.

## CONCLUSION

This study found that of the 30 elderly at the Dharma Bhakti Kasih Nursing Home in Surakarta, the majority were aged 60-75 years (50%), female (60%), and had a low risk of falling (50%), followed by no risk (40%) and high risk (10%), based on the Morse Fall Scale. These findings confirm that the potential risk remains, although the majority are low, influenced by intrinsic factors such as age and gender, as well as extrinsic factors such as the nursing home environment.

However, limitations include a sample size limited to one nursing home, making generalization difficult, communication difficulties with elderly people with hearing impairments, and the inability to access bedrest respondents. Practical implications include routine MFS screening, environmental modifications (handrails, lighting), and balance training. Further research is recommended to include longitudinal studies of influencing factors or experimental interventions in multiple nursing homes for comprehensive prevention.

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