

DESCRIPTION OF FALL RISK FACTORS ON FALLING
INCIDENTS AMONG THE ELDERLY IN THE WORKING AREA OF
KRUENG BARONA JAYA HEALTH CENTER

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Abstract

Immobility in the elderly can cause muscle stiffness, pain, and impaired movement, highlighting the need for families to understand the potential effects of immobilization beyond just taking special care of their elderly members. This study aims to describe the risk factors for falls among the elderly in the working area of Krueng Barona Jaya Health Center. A descriptive design using a cross-sectional approach was employed, with a sample of 65 respondents. The instrument used in this study was a questionnaire sheet. The findings revealed that the highest distribution of fall risk was in the high category, with 33 respondents (50.8%) at risk of falling. The study's outcomes can serve as a guide for healthcare professionals in providing appropriate services to elderly patients, particularly those at risk of falls.

Keywords: Elderly, Health Services, Immobility, Risk of Falling

1. INTRODUCTION

Elderly refers to individuals who have reached the age of 60 years or older and have the same rights in social, national, and state life. According to AA & Boy (2020), the elderly population in the world is estimated to double from 12% to 22% between 2020 and 2050, with the number of people aged 60 years or older increasing from around 900 million to 2 billion.

In Indonesia, the elderly population is expected to enter the aging period from 2018 to 2035, with 10% of the population aged 60 years or older, ranking fifth in the world with 7.6% of the total population. Meanwhile, it is well-known that older adults are at higher risk of falls and fall-related injuries due to age-related physical changes, chronic health conditions, and environmental factors

According to Maryam et al. (2017), falling is a sudden and unintentional condition that results in a person lying or sitting on a lower surface indicating a loss of consciousness. Sevrita (2019) explains that falling is an event experienced by a patient or eyewitness who sees the incident and results in a person suddenly lying or sitting on the floor or a lower surface with or without loss of consciousness or injury.

Falls can be caused by various factors, which can be categorized into two main types: intrinsic and extrinsic. Intrinsic factors are those that are related to the individual's physical and medical conditions. These factors include musculoskeletal disorders, lower extremity weakness, joint stiffness, and syncope, which is a sudden loss of consciousness caused by reduced blood flow to the brain (Bachtar, 2020). Extrinsic factors, on the other hand, are external factors that are related to the surrounding environment. These factors include a

dimly lit room, slippery floor, and tripping over objects, as well as an unsupportive environment such as weak or unstable handholds, low or squatting beds or toilets, medication use, and walking aids (Caring, 2017). According to Darmojo in Amiliya (2020), Falls can result in various types of injuries, physical damage, and psychological distress, which can lead to complications such as injuries, disability, and even death. It is important to identify and address these factors to prevent falls and their potential negative consequences.

According to Lidya & Soraida (2019), the definition of elderly is the decline, weakness, increased vulnerability to various diseases and environmental changes, loss of mobility and agility, as well as physiological changes associated with aging.

According to the World Health Organization (WHO) cited by Oktriani et al. (2020), There are four stages, namely: (a) middle age (45-59 years old), (b) elderly (60-74 years old), (c) old (75-90 years old) (d) Very old age (very old) > 90 years old.

Based on the background above, the purpose of this research is to describe the risk factors for falls on the incidence of falls in the elderly in the working area of the Krueng Barona Jaya Health Center.

2. RESEARCH METHOD

This study utilized a descriptive design with a cross-sectional approach, which involves measuring and observing data only once at a single point in time (Agung Suharto et al., 2022). A sample size of 65 was taken in this study using the Stratified Random Sampling method, which involves taking samples from all levels. To determine the number of elderly individuals at risk of falling to be sampled from each village, the Proportional Sampling formula was used.

The Intrinsic Factor Questionnaire comprised of 19 positive statements, while the Extrinsic Factor Questionnaire consisted of 16 positive questions with answer options of 1 for "Yes" and 0 for "No".

Data were analyzed using SPSS. Univariate analysis produced frequency distributions and percentages of each variable studied. The collected data were processed using ordinal level categories, allowing for the determination of the average or mean of the research variables.

Overall, this study provides valuable insights into the risk factors for falls in the elderly population. The use of stratified random sampling and proportional sampling helped ensure a representative sample, while the use of SPSS and univariate analysis allowed for meaningful analysis of the data.

3. RESULT AND DISCUSSION

3.1. Research Result

Based on the data processing results for the categorization of the last education level with 65 respondents, the results of data processing for the categorization of the last education level can be seen in Table 1 below as follows.

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Table 1 Frequency Distribution of Demographic Data on the Elderly in the Working Area of the Krueng Barona Jaya Health Center (N=65)

Type	Category	Frequency (f)	Percentage (%)
Last education	Bachelor	26	40.0
	Senior High School	32	49.2
	Junior High School	7	10.8
Last job	Civil Servant	14	21.5
	Self-employed	19	29.2
	Farmer	11	16.9
	Housewives	21	32.3
Condition of Respondents	Good	49	75.4
	Poor	16	24.6

Source: Primary data (processed in 2022)

Based on the research results in table 1, it can be seen that the highest level of education is senior high school with 32 respondents (49.2%). The highest last occupation is in the category of housewives with 21 respondents (32.3%). The highest condition of respondents is in the good category with 49 respondents (75.4%).

3.1.1. Univariate analysis

1) Intrinsic Factor

Based on the data analysis for the categorization of Intrinsic Factors using 19 questionnaire items and 65 respondents, a total score of 934 was obtained with a mean/average score ($\bar{x}$) of 14.4. Therefore, the Intrinsic Factor is categorized as high if $x \geq 14.4$ and low if $x < 14.4$. The results of the Intrinsic Factor can be seen in Table 2 below.

Table 2 Frequency Distribution of Intrinsic Factors for Falls in the Elderly in the Working Area of the Krueng Barona Jaya Health Center (N=65)

No	Intrinsic Factor	Frequency (f)	Percentage (%)
1	High	34	52.3
2	Low	31	47.7
	Total	65	100

Source: Primary data (processed in 2022)

Based on the research results in table 2, it was found that the highest distribution of intrinsic factors was in the high category with 34 people (52.3%) of respondents.

2) Extrinsic Factors

Based on the data processing for the categorization of Extrinsic Factors using 16 questionnaire items with 65 respondents, the total score obtained was 774 with a mean value ($\bar{x}$) of 11.9. Thus, Extrinsic Factors can be categorized as high if $x \geq 11.9$ and low if $x < 11.9$. The results of Extrinsic Factors can be seen in Table 3 below.

Table 3 Frequency Distribution of Extrinsic Factors on Falls in the Elderly in the Working Area of the Krueng Barona Jaya Health Center (N=65)

No	Extrinsic Factors	Frequency (f)	Percentage (%)
1	High	41	63.1
2	Low	24	36.9
	Total	65	100

Source: Primary data (processed in 2022)

Based on table 3, it was found that the highest distribution of extrinsic factors was in the high category with 41 people (63.1%) of respondents.

3) Fall Risk

Based on the data processing results for the categorization of Fall Risk with 65 respondents, a total score of 1708 was obtained with a mean/average score ($\bar{x}$) = 26.3. Therefore, Fall Risk is categorized as high if $x \geq 26.3$ and low if $x < 26.3$. The results of Fall Risk can be seen in table 4 below.

Table 4 Frequency Distribution of Fall Risk Factors for Falls in the Elderly in the Working Area of the Krueng Barona Jaya Health Center (N=65)

No	Fall Risk	Frequency (f)	Percentage (%)
1	High	33	50.8
2	Low	32	49.2
	Total	65	100

Source: Primary data (processed in 2022)

Based on table 4 it was found that the highest distribution of fall risk was in the high category with 33 people (50.8%) of respondents.

3.2. Discussion

3.2.1. Intrinsic Factors on Falls in the Elderly in the Working Area of the Krueng Barona Jaya Health Center

This study has examined intrinsic factors related to the incidence of falls in elderly individuals in the work area of Krueng Barona Jaya Community Health Center. The findings showed that the highest distribution of intrinsic factors was in the high category, with 34 respondents (52.3%) experiencing intrinsic factor disorders.

These results are consistent with Ramlis (2018), which found that out of 60 respondents, 34 (56.7%) experienced intrinsic factor disorders, while 26 (43.3%) did not.

In line with Darmojo's concept as stated in Ashar (2016), intrinsic risk factors for falls in the elderly include heart disorders, musculoskeletal system disorders, nervous system disorders, visual impairments, and hearing impairments. For instance, heart disorders, such as hypertension, where systolic blood pressure is equal to or higher than 140 mmHg and diastolic blood pressure is higher than 90 mmHg, can occur due to decreased arterial elasticity in the aging process. If left untreated, hypertension can trigger stroke, arteriosclerosis, heart attacks/failure, and increase the risk of falls in the elderly.

According to the researcher, a decline in balance in an individual is not only due to a decrease in muscle strength or the result of a disease, but also balance is considered a performance that depends on continuous activities. Advanced age in the independent category can also be interpreted as advanced age that is able to carry out daily activities independently without depending on others. Furthermore, older adults often experience a loss of perception and sensory related to information that regulates body movement and the position of the older adult, as well as the loss of sensory fibers, vibration receptors, and touch from the lower extremities of the older adult that causes a decrease in the ability to correct joint movement in older adults, which ultimately can result in body imbalance, leading to falls in older adults.

3.2.2. Extrinsic Factors on Falls in the Elderly in the Working Area of the Krueng Barona Jaya Health Center

This study also investigated extrinsic factors related to falls in elderly individuals in the work area of Krueng Barona Jaya Community Health Center. The findings showed that the highest distribution of extrinsic factors was in the high category, with 41 respondents (63.1%) being at risk of extrinsic factors.

These results are consistent with Ramlis (2018), which found that out of 60 respondents, 40 (66.7%) were at risk of extrinsic factors, while 20 (33.3%) were not at risk.

In accordance with Darmojo's concept as stated in Sevrita (2019), while the use of walking aids can improve balance, it can also cause interrupted steps and a tendency for the body to bend, especially if the walking aid does not use wheels. Therefore, the use of walking aids should be recommended on an individual basis.

According to the opinion of environmental researchers, a safe environment for the elderly includes both indoor and outdoor environments. The indoor environment includes the bathroom, where there are handrails in the bathroom area that are easily accessible when needed, the shower floor surface is not slippery, the backrest is coated with non-slip rubber, and the drainage is good to prevent the floor from becoming slippery after use. The bedroom, kitchen, and living room should have no rugs or carpets where there are steps, furniture should be arranged in a way that allows for ample walking space, and the height of chairs and sofas should be sufficient for the elderly to easily sit or get up from them. For stairs, there should be strong handrails on both sides of the steps, the step surfaces should not be slippery, items should not be placed on the steps, and the bottom and top steps should be marked with bright colors to indicate the beginning and end of the staircase.

3.2.3. Risk Factors of Falling for Falls in the Elderly in the Working Area of the Krueng Barona Jaya Health Center

Based on research on fall risk factors for falls in the elderly, it was found that the highest distribution of fall risk was in the high category with 33 people (50.8%) respondents.

The results of this study are supported by research Ramlis (2018) that out of 60 respondents there were 27 respondents (45%) with high risk of falling factors, 18 respondents (30%) with low risk of falling and 15 respondents (25%) with no risk of falling.

In accordance with the concept of Darmojo in Sevrita (2019), most fall risks occur when the elderly perform daily activities such as walking, going up and down stairs, and changing positions. Falls can also occur during hazardous activities such as mountain climbing or

strenuous exercise. Fatigue also increases the risk of falls in the elderly. Falls also often occur in elderly individuals who are immobile (rarely move) when they suddenly want to change their location or grab something without assistance.

4. CONCLUSION

In conclusion, the research findings reveal that both intrinsic and extrinsic factors play a significant role in falls among elderly individuals in the working area of Krueng Barona Jaya Health Center. The highest distribution of intrinsic factors was in the high category with 34 people (52.3%) of respondents, while the highest distribution of extrinsic factors was also in the high category with 41 people (63.1%) of respondents. Additionally, the highest distribution of fall risk was in the high category with 33 people (50.8%) respondents. This information highlights the need for healthcare professionals to prioritize fall prevention strategies that address both intrinsic and extrinsic risk factors in this population.

It is hoped that the results of this study will raise awareness among healthcare professionals and the community about the importance of fall prevention in elderly individuals, as well as encourage further research to develop effective interventions for reducing fall risk in this population.

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