ORIGINAL ARTICLE

The Lived Experiences of Family Caregivers in Caring for Older Adults at Risk of Falls: A Phenomenological Study

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ABSTRACT

Background: Falls in older adults are a major public health issue, particularly in home-based care settings. Family caregivers play a critical role in caring for older adults at risk of falls. Therefore, this study aimed to explore the lived experiences of family caregivers in facing challenges and preventive care strategies for older adults at risk of falling in Indonesia.

Methods: A descriptive phenomenological study was conducted from December 2024 to April 2025 in Pekanbaru City, Riau Province, Indonesia, involving 12 family caregivers who provided care for older adults at risk of falling. Participants were selected using a purposive sampling technique. Data were collected through in-depth semi-structured interviews which lasted between 45 and 70 minutes. The interviews continued until no new experiential meanings emerged, indicating data saturation. All interview recordings were transcribed verbatim and analyzed manually using Colaizzi's seven-step method.

Results: The research identified five themes including: (1) stressors in caring for older adults, (2) declining health conditions of older adults, (3) fall-prone environments for older adults, (4) socio-cultural influences on care, and (5) fall prevention strategies.

Conclusion: This study supports the need for family-centered, community-based, and culturally sensitive interventions to assist family caregivers in preventing falls among older adults.

Keywords: Accidental falls, Aged, Caregivers, Elderly, Qualitative research

Introduction

The population of older adults in Indonesia continues to increase significantly and is projected to accelerate in the coming decades. According to the Central Statistics Agency (Badan Pusat Statistik-BPS), the proportion of the population aged 60 years and above reached 11.75% in 2023, equivalent to more than 32 million people, and is expected to surpass 20% by 2045, marking the transition of Indonesia into an aging society. BPS data also shows regional disparities in aging trends, with certain provinces such as Riau experiencing higher-than-average older adult population growth, with a proportion of older adults of 6.99% in 2022, increasing to 7.40% in 2023.[1] These demographic shifts pose substantial challenges for healthcare systems and families, particularly in relation to age-related health risks such as falls, which are a major cause of injury, disability, and mortality in older adults. Falls in older adults are a significant cause of morbidity, decreased function, and even mortality, and have an impact on their overall quality of life.[2] Falls are a major health threat and cause of injury in the world for older adults. The prevalence of falls in older adults in the world is 26.5% with the highest prevalence in older adults in Oceania at 34.4% and America at 27.9%.[3] Then, countries in Southeast Asia such as Cambodia, Indonesia, Myanmar, and Vietnam have the highest mortality ratio in the world due to incidents that befall older adults.[4]

In Indonesia, most older adults live with their families and rely on informal care from family members as their primary caregivers. This pattern reflects a strong cultural value system, such as filial piety and moral responsibility in caring for older adults.[5] However, families often face various challenges in caring for older adults, with the risk of falling, which can have an impact on physical and psychological health conditions. Caregivers also experience a double burden of household responsibilities and other work, which increases the risk of fatigue and stress.[6] This condition requires appropriate handling strategies so that the condition of the caregiver and older adults is maintained, and they are protected from falls.

There are several approaches to fall management strategies that are known. Several approaches to fall management strategies that have been proven effective in various recent studies include multifactorial interventions, health education for caregivers, and environmental modifications. Research shows that individually tailored multifactorial interventions are effective in reducing the frequency of falls.[7] Health education for caregivers is also very important to increase awareness and understanding of the risks and prevention of falls. A study showed that family education increased preparedness and behavioral change in the home environment.[8] The environment-based interventions can reduce the incidence of falls, especially in older adults with limited mobility.[9, 10] These facts require an in-depth exploration of the experiences of family members who are the main caregivers for older adults at risk of falling.

In Indonesia, research on the lived experiences of families caring for older adults at risk of falling remains limited, particularly from a qualitative perspective. A phenomenological approach is highly appropriate for capturing the meaning and complexity of caregiving within culturally specific contexts and for informing the development of context-sensitive interventions. Despite the critical role played by family caregivers in community-based elder care, little is known about how they perceive, experience, and manage the risk of falls. Most existing studies tend to focus on clinical or institutional aspects, leaving a significant gap in understanding the caregiving experience from the perspective of families.[11] The findings are expected to provide culturally relevant insights that can inform family-centered fall prevention strategies in Indonesia. Therefore, this study aimed to address this gap by exploring the lived experiences of family caregivers in caring for older adults at risk of falling in Indonesia.

Materials and Methods

This study employed a qualitative research design with a descriptive phenomenological approach to exploring family caregivers' lived experiences regarding the challenges and strategies in caring for older adults at risk of falling. The central research question guiding this study was: "What is the meaning or essence of the lived experience of being a family caregiver to an older adult at risk of falling?" The descriptive phenomenological approach was chosen to capture the meaning and essence of the caregiving experience from the participant's perspective and provide an in-depth understanding that represents the true nature of the phenomenon.[12] In phenomenological research, participants must have direct experience with the phenomenon being studied.[13]

The decision to adopt a phenomenological approach in this study was influenced by the first author's personal and professional background, including prior qualitative research experience, and expertise in community and geriatric nursing. The researcher has direct experience assisting families in caring for older adults at risk of falling and has witnessed the complex emotional, physical, and cultural dynamics of caregiving in home settings. This experiential background provided a meaningful foundation for deeply understanding the lived experiences of family caregivers.

This study was conducted from December 2024 to April 2025 in Pekanbaru City, Riau Province, Indonesia. This province is experiencing a rapid growth rate of older adults, which places it in the category of population aging.[1] The area in Riau Province with the largest older adult population is Pekanbaru City, namely 11.60%.[14] The selection of participants in this study employed a purposive sampling technique; the inclusion criteria were being a caregiver living with older adults, being a primary family caregiver who cares for the older adults aged ≥60 years with a high fall risk score, being an adult and fluent in Indonesian, having an experience of providing care for at least 6 months, helping older adults in daily activities, and being able to express their experiences. Exclusion criterion was family caregivers who had significant cognitive impairments or communication difficulties that could interfere with their ability to articulate and reflect on their caregiving experiences.

As to data collection, we used in-depth semi-structured interviews, conducted at the participants' homes to ensure comfort and privacy. The interview guide focused on exploring the challenges and strategies of family caregivers in caring for older adults at risk of falling. The in-depth semi-structured interview guide was developed by referring to a review of relevant literature, resulting in three open-ended questions: "Tell me about your experience of caring for older adults at risk of falling?", "What is it like to live with this phenomenon?", "What challenges did you face in providing care?", and "What strategies did you use to overcome these challenges?". These questions were designed to elicit deep reflections on the lived meaning of the caregiving experience, particularly focusing on the participants' feelings, perceptions, and behaviors related to the phenomenon. Probing questions such as: "Can you give some examples of strategies you used to overcome these challenges?" were used to obtain in-depth information about their experiences and the significance attached to those experiences. Additional probing questions were also asked depending on the flow of participants' responses. A total of 12 in-depth interviews were conducted, with one interview per participant, each lasting between 45 to 70 minutes; they were recorded using an audio recorder with the consent of the participants. Field notes were also taken to capture non-verbal expressions and contextual observations. All interviews were conducted directly by the first author, who is trained in qualitative research and has a background in community and geriatric nursing. All interviews were conducted once and

continued until data saturation was achieved, with no new themes or insights emerging. To ensure phenomenological rigor, the researcher maintained openness throughout the interviews and applied bracketing by setting aside personal assumptions and professional experiences related to caregiving to gain access to the true essence of the participants' lived experiences.

Interview recordings were transcribed verbatim within 24 hours of each interview to begin the initial data analysis process. Analysis was conducted manually using Colaizzi's seven-step method without the aid of qualitative data analysis software, which involved (1) reading all participant descriptions to gain a general understanding, (2) extracting key statements relevant to the phenomenon, (3) formulating meanings from key statements based on the previous steps, (4) integrating previously formulated meanings into groups of themes and subthemes, (5) integrating the findings into a coherent description (comprehensively describing the challenges and strategies experienced by participants in caring for older adults at risk for falls), (6) identifying the fundamental structure of the phenomenon, and (7) validating the research findings with participants and seeking their feedback to improve the analysis.[14] Data management and coding were performed by manual sorting and thematic tables. The quality of data or findings of qualitative research was determined by the validity of the data produced, or more precisely, the reliability, authenticity, and truth of the data, information, or findings produced from the research.[15]

To ensure the rigor and trustworthiness of the data, we applied the four established criteria in qualitative research: credibility, dependability, transferability, and confirmability.[16] Credibility was addressed through member checking (Step 7 of Colaizzi's method), where selected participants reviewed and confirmed the accuracy of the findings. Dependability and confirmability were maintained through systematic documentation of the analysis process, including verbatim transcripts, significant statements, formulated meanings, thematic tables, and reflective notes. Transferability was ensured by providing a detailed description of the participants' characteristics, caregiving context, and sociocultural background, allowing readers to assess the applicability of the findings to other settings. In this research report, we used the Standards for Reporting Qualitative Research (SRQR) checklist.[17]

This study was approved by the Health Research Ethics Committee of the Faculty of Nursing, University of Indonesia, West Java, Indonesia (reference number: KET-292/UN2. F12.D1.2.1/PPM.00.02/2024). Participants provided written informed consent after receiving detailed information about the purpose of the study, confidentiality measures, and their right to withdraw. Interview transcripts were stored in a password-protected master folder in an anonymized and pseudonymous Microsoft Word document. Only researchers involved in the study had access to the data.

RESULTS

The participants in this study were 12 family caregivers with a mean age of 44.7±5.2 years and an average length of care of 5.3±2.8 years. All participants were female and married, most worked as housewives, and had a high school education. All participants had a family type, namely an extended family, and most had a relationship between biological children and older adults. Detailed demographic characteristics are presented in Table 1.

Thematic analysis identified five themes that describe the challenges and strategies of family caregivers in caring for older adults at risk of falling in Indonesia. The challenges found include: (1) stressors in caring for older adults, (2) declining health conditions of older adults, (3) fall-prone environments for older adults, (4) socio-cultural influences on care, and (5) fall prevention strategies. A summary of the main themes and subthemes is presented in Table 2.

Table 1: Characteristics of family caregivers

Participant Code	Age (years)	Sex	Marital status	Employment status	Level of Education	Family type	Relationship with older adults	Length of caring (years)
P1	46	Female	Married	Housewife	Senior High School	Extended Family	Daughter-In-Law	8
P2	42	Female	Married	Housewife	Diploma	Extended Family	Biological Child	2
P3	44	Female	Married	Housewife	Senior High School	Extended Family	Biological Child	3
P4	48	Female	Married	Government Employees	Bachelor	Extended Family	Biological Child	12
P5	53	Female	Married	Housewife	Senior High School	Extended Family	Biological Child	5
P6	38	Female	Married	Self-Employed	Diploma	Extended Family	Biological Child	3
P7	55	Female	Married	Housewife	Senior High School	Extended Family	Biological Child	6
P8	43	Female	Married	Housewife	Senior High School	Extended Family	Daughter-In-Law	4
P9	40	Female	Married	Housewife	Senior High School	Extended Family	Biological Child	3
P10	39	Female	Married	Government Employees	Bachelor	Extended Family	Biological Child	6
P11	45	Female	Married	Self-Employed	Senior High School	Extended Family	Biological Child	5
P12	43	Female	Married	Housewife	Senior High School	Extended Family	Biological Child	7

Table 2: Sub-themes and themes derived from data

Sub-Themes	Themes
Low family knowledge Burden of care	Stressors in caring for older adults
Physical health challenges Psychological and behavioural barriers	Declining health conditions of older adults
Indoor fall hazards Outdoor fall hazards	Fall-prone environments for older adults
Social perceptions Cultural beliefs	Socio-cultural influences on care
Home safety modification Health monitoring Activity assistance Physical exercise promotion	Fall prevention strategies

1. Stressors in Caring for older Adults

One of the main challenges faced by family caregivers in this study was stressors in caring for older adults. This theme was identified from two sub-themes, namely low family knowledge and the burden of caring for older adults.

1.a. Low Family Knowledge

Family caregivers often express their confusion about how to properly care for older adults, especially in preventing the risk of falls, so they feel frustrated when faced with this condition. This condition is supported by the following participant statements:

"... I don't really know either ..." (P1); *"... I feel like I don't understand how to take care of my parents properly ..."* (P2); *"... that's why I don't really understand either ..."* (P3).

1.b. Burden of Care

The burden of caring for older adults has become a stressor for family caregivers, especially in terms of physical and psychological burdens, where this condition is also getting worse due to economic limitations, time constraints, and limitations of older adult service providers. This condition is supported by the following participant statements: *"... I often feel tired at night ...."* (P1); *"... if I'm tired, I sometimes get dizzy and have to take medicine ..."* (P2); *"... sometimes I feel stressed too when my mother can't be told ..."* (P11).

2. Declining Health Conditions of Older Adults

The decline in the health condition of older adults is described in the sub-themes of the physical health challenges and the psychological and behavioral barriers of older adults. These two sub-themes were related to older adult diseases, older adult attitudes, and older adult emotions. The decline in the health condition of older adults is one of the main obstacles in older adult care, with the risk of falling felt by family caregivers.

2.a. Physical Health Challenges

Physical conditions, such as suffering from chronic diseases such as hypertension, diabetes mellitus, rheumatism, and stroke, further emphasize that multiple morbidity in older adults is a major risk factor for falls. The statement of a participant supports this condition, *"...my parents have hypertension and sometimes also experience dizziness..."* (P12).

2.b. Psychological and Behavioral Barriers

The psychological and behavioral aspects in the form of the stubborn attitude of older adults and still wanting to be independent even though their condition no longer allows, reflect the conflict between the need for help and the desire to maintain autonomy. This condition is supported by the following participant statements: *"...what can I do? sometimes my mother is stubborn, hard to tell..."* (P8); *"...yeah...she still wants to walk alone..."* (P9).

3. Fall-prone Environments for Older Adults

This theme encompasses sub-themes related to environmental hazards within the house and outside the house.

3.a. Indoor Fall Hazards

The physical environment in the house, such as slippery floors, carpets, and scattered grandchildren's toys, poses potential dangers for older adults. In addition, dim lighting and non-ergonomic furniture layout further increase the risk of falling. This condition is supported by the following participant statements: *"... the bathroom floor sometimes still has detergent residue, so it's slippery ..."* (P4); *"... in the living room, the lights are small, not bright ..."* (P9); *"... yes, this is what a narrow house is like, so there are a lot of things near the door too ..."* (P2).

3.b. Outdoor Fall Hazards

The environment outside the family caregiver's house still has many potholes and slippery yards when it rains, contributing to the risk of falling for older adults. This condition is supported by the following participant statements: *"... the alley has many holes, so you have to be careful when passing through ..."* (P3); *"... in front of the house, if you want to go to the road, it's a bit up and the cement is uneven ..."* (P7); and the statement *"... our yard is dirty, right? So when it rains, it's muddy and slippery ..."* (P8).

4. Socio-cultural Influences on Care

The fourth theme identified in this study was social and cultural factors, which are described in the sub-themes of social factors and cultural factors. Although socio-cultural factors are part of the broader caregiving environment, participants described them separately from physical environmental conditions. While

environmental challenges were associated with tangible risks (e.g., slippery floors, poor lighting), socio-cultural factors were linked to beliefs, social perceptions, and cultural practices that influenced caregiving behaviors at a deeper level.

4.a. Social Perceptions

Social perceptions include the assumption that falling is a normal occurrence in older adults, as well as feelings of shame because they are considered weak if they use walking aids. This category is supported by several participants' statements, such as *"...they are older adult right...weak so it's natural to fall..." (P5); "...yeah...it's natural, because they are old..." (P6); "...they rarely join community events; sometimes they feel ashamed that they have to use a cane when walking..." (P4).*

4.b. Cultural Beliefs

Cultural factors include the influence of local customs and beliefs on the handling of falls in older adults. This issue is supported by several participant statements, such as *"... I was also taken to a traditional healer in Pariaman..." (P1); "... in the village, there is a healer who is good at massage; then, I can walk again..." (P3).* This statement proves that several participants prefer traditional medicine after experiencing a fall, indicating that belief in traditional medicine is still very strong.

5. Fall Prevention Strategies

The fall prevention strategy theme has four sub-themes, namely home safety modifications, health monitoring, activity assistance, and physical exercise promotion.

5.a. Home Safety Modifications

The sub-theme of home environment modification is maintaining a safe home environment for older adults. This category is supported by several participant statements such as: *"...we routinely clean the bathroom so that it is not slippery..." (P2); "...installing handles in the bathroom and making sure the floor is not slippery..." (P10).*

5.b. Health Monitoring

The subtheme of older adult health monitoring focuses on health status monitoring. It is supported by several participant statements, such as: *"...usually when my parents are sick, I take them to the community health center to have their health checked..." (P2). "...every month, we accompany my grandmother to the integrated community health post (Posyandu) to have her health checked..." (P6).*

5.c. Activity Assistance

The sub-theme of assisting older adults focuses on assisting older adults in their activities. The issue is supported by several participant statements, such as: *"...so if the mother does activities such as walking, we accompany her..." (P5).*

5.d. Physical Exercise Promotion

Caregivers focused on promotion of physical exercise as a strategy to prevent older adults' falling. This includes reminding, assisting, and facilitating participation in exercises appropriate to their condition. It is supported by participant statements such as: *"...I always remind my mother to do light stretching and short walks every morning to keep her legs strong..." (P7); "...if there is an elderly gymnastics session at the health center, I make sure to take my father there so that he stays active and doesn't get stiff..." (P12).*

DISCUSSION

This study examined the real-world challenges faced by family members providing care to elderly individuals susceptible to falls. Through in-depth investigation, five key themes emerged: the emotional and physical burdens of caregiving, age-related health deterioration in the elderly, hazardous living conditions contributing to fall risks, the way social norms and cultural beliefs shape caregiving practices, and practical approaches to prevent falls. These themes reflect the complexity of the caregiving role and provide insights into how family

members navigate challenges and formulate culturally appropriate responses to fall risk.

The findings suggest that challenges can contribute to low fall prevention in older adults, such as the sub-themes of low family knowledge and burden of caring for older adults. These two sub-themes describe low family knowledge, which can have an impact on the physical, psychological, and social stress experienced by caregivers in caring for older adults at risk of falling. Low family knowledge is a significant risk factor for falls in older adults at home.[18] In addition, families who do not understand the condition of older adults and do not know how to provide safe care tend to be reactive rather than preventive, which leads to high rates of falls.[19] These findings are consistent with other studies, which report that caregivers without structured guidance often choose reactive responses.[20] In contrast, integrated multidisciplinary programs reduce this risk.[21] This highlights the urgent need for community-based training tailored to families' capacities as caregivers.

The findings of this study reveal that older adult caregivers often experience fatigue due to the high physical demands of care, especially in older adult conditions with limited mobility or a history of falls. Psychological burdens are expressed in the form of stress, excessive worry, and fear of the possibility of the older adult's condition worsening. This condition is reinforced by other studies showing that caregivers often experience emotional stress due to anxiety about the risk of elderly people falling and the inability to control the situation.[22] Moreover, the majority of family caregivers are women, so many female caregivers experience time fatigue due to the demands of dual roles at home.[23] This gendered caregiving burden mirrors findings in Asian cultural contexts, where strong filial piety norms reinforce women's disproportionate role in elder care, potentially increasing the risk of caregiver burnout.[5]

Chronic diseases such as hypertension, diabetes, rheumatism, and a history of stroke found in participants emphasize that multiple morbidity in older adults is a major risk factor for falls. The conditions contribute to imbalance and muscle weakness, which increases the vulnerability of older adults to falls.[24, 25] The physical and psychological conditions in the form of older adult stubborn attitude and wanting to remain independent, even though their condition no longer allows it, reflect the conflict between the need for help and the desire to maintain autonomy. On the other hand, many elderly people are reluctant to accept help because they want to continue to feel useful, but this often puts them in a high-risk situation of falling.[26] Similar autonomy-preserving behaviors have been observed globally, but in collectivist cultures like Indonesia, such resistance may also symbolize dignity and self-worth, requiring culturally sensitive negotiation strategies rather than coercion.

The living environment of older adults at risk of falling, both inside and outside home, does not support the safety of older adults. An unsafe living environment is a significant risk factor for falls in older adults, especially in the bathroom and living room areas.[27] The presence of slippery surfaces and poor lighting is also a major cause of falls in homes. Inadequate lighting can interfere with the visual perception of older adults, making it difficult for them to identify obstacles around them.[28] Adjusting the indoor and outdoor environment is part of an effective fall prevention strategy, as explained by the World Health Organization in the "Age-friendly Environments" guideline, which emphasizes the importance of physical factors in homes in supporting safe aging in place.[29] However, unlike high-income countries where environmental modifications are often subsidized,[30] caregivers in our setting rely on improvised, low-cost adaptations, suggesting the need for low-resource, high-impact interventions.

Modifying the home environment is one of the main efforts made by families to prevent falls. Several participants mentioned cleaning the bathroom, installing grab bars,

and ensuring adequate lighting as a form of awareness of the dangers of falling. Physical adjustments to the home environment, such as installing assistive devices and adequate lighting, are effective in reducing the risk of falls.[31] Therefore, environment-based interventions can significantly reduce the prevalence of falls in older adults in the community.[32] Yet, our findings reveal that such measures are often implemented without integration with other prevention pillars, such as medication review or vision assessment, which limits the overall effectiveness compared to comprehensive global models.[21]

This study revealed that some participants expressed reluctance to appear in public when they had to use walking aids. Social stigma against the use of assistive devices and negative perceptions of physical weakness can hinder older adults' participation in fall prevention programs.[33] Some participants preferred traditional medicine after experiencing a fall, indicating that trust in traditional medicine is still very strong. Research in Thailand shows that belief in traditional medicine and limited access to modern health services influences treatment choices after a fall.[34] This dual reliance on biomedical and traditional healing underscores the need for culturally sensitive health promotion that bridges both systems rather than attempting to replace one with the other.

The fifth theme suggests that families have implemented key pillars of fall prevention, including environmental modifications, monitoring, activity support, and exercise. This is a strength reflected in family awareness and agency. However, a recurring weakness is the lack of structure and minimal linkage to other important components, such as medication review, vision correction, and footwear. Furthermore, older adults' resistance to assistive devices or safety measures also hinders prevention efforts.[20] Global guidelines emphasize a person-centered, multifactorial, and transdisciplinary approach.[21] They also require a multifaceted approach and evidence-based curriculum to support training and

implementation of fall prevention strategies in older adults' communities.[30] They emphasize the importance of training that encompasses nutrition, physical activity, sleep, stress, and caregiver empowerment to increase the effectiveness of fall prevention strategies.[35] Our findings suggest that adapting these guidelines to the Indonesian context will require simplification of recommendations, prioritization of feasible interventions, and embedding cultural values into the training content.

A key strength of this study is that it is one of the few qualitative inquiries in Indonesia focusing on fall prevention from the perspective of family caregivers; it provides culturally specific insights that can inform tailored interventions. Nevertheless, this study has limitations, as bracketing was implemented to minimize researcher bias; however, the researcher's prior experience in geriatric nursing may still influence data interpretation. While these findings are context-specific and may not reflect the perspectives of rural or male caregivers, they offer valuable contributions to understanding caregiving dynamics in this sociocultural setting. Future research should include more diverse populations and caregiving environments to deepen understanding of fall prevention experiences across different cultural and demographic contexts.

CONCLUSION

This study reveals the complex experiences of family caregivers in managing fall risks among older adults. Findings emphasize the importance of culturally sensitive, family-centered interventions in caring for the elderly at risk of falls. Strengthening caregiver capacity through community-based education and support systems is essential in improving elderly care and safety. These insights can inform the development of integrated interventions in gerontological nursing practice and public health policy. Future studies are recommended to develop and evaluate culturally appropriate, community-based interventions that improve

the capacity of family caregivers in preventing falls among older adults.

Authors' Contribution

DK, JS, and ER contributed to the conceptualization and design of this study. The data collection was conducted by DK, with assistance from JS, ER, and RAD. The data analysis and interpretation were carried out collaboratively by DK, JS, ER, and RAD. DK drafted the initial manuscript. All authors critically reviewed, revised, and approved the final version of the manuscript for publication. All authors take responsibility for the integrity of the data and the accuracy of the data analysis. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted.

Conflict of Interest

None declared.

Declaration on the use of AI

The authors declare that no generative artificial intelligence tools were used in the preparation of this manuscript.

REFERENCES

1   Central Bureau of Statistics. Elderly population statistics 2023. Jakarta: Central Bureau of Statistics; 2023. [Cited 20 May 2025]. Available from: https://www.bps.go.id/id/publication/2023/12/29/5d308763ac29278dd5860fad/statistik-penduduk-lanjut-usia-2023.html [In Indonesian]

2   The Centers for Disease Control and Prevention. Older Adult Falls. US: The Centers for Disease Control and Prevention; 2024. [Cited 20 May 2025]. Available from: https://www.cdc.gov/falls/data-research/index.html

3   Salari N, Darvishi N, Ahmadipanah M, et al. Global prevalence of falls in the older adults: a comprehensive systematic review and meta-analysis. Journal of Orthopedic Surgery and Research. 2022;17:334.

4   Vo MTH, Thonglor R, Moncatar TJR, et al. Fear of falling and associated factors among older adults in Southeast Asia: a systematic review. Public Health. 2023;222:215-28.

5   Xiao C, Patrician PA, Montgomery AP, et al. Filial piety and older adult caregiving among Chinese and Chinese-American families in the United States: a concept analysis. BMC Nursing. 2024;23:115.

6   Ding TYG, De Roza JG, Chan CY, et al. Factors associated with family caregiver burden among frail older persons with multimorbidity. BMC Geriatrics. 2022;22:160.

7   Hopewell S, Adedire O, Copsey BJ, et al. Multifactorial and multiple component interventions for preventing falls in older people living in the community. Cochrane Database of Systematic Reviews. 2018;7:CD012221.

8   Hailu GN, Abdelkader M, Asfaw F, et al. Exploring the knowledge and skills for effective family caregiving in elderly home care: a qualitative study. BMC Geriatrics. 2024;24:342.

9   Campani D, Caristia S, Amariglio A, et al. Home and environmental hazards modification for fall prevention among the elderly. Public Health Nursing. 2021;38:493-501.

10 Dalvand H, Setoudeh H, Namazi

Shabestari A, et al. The effectiveness of home modifications on the risk of falling in older adults with dementia: A randomized clinical trial. British Journal of Occupational Therapy. 2024;87:6-14.

11 Neller SA, Hebdon MT, Wickens E, et al. Family caregiver experiences and needs across health conditions, relationships, and the lifespan: a Qualitative analysis. International Journal of Qualitative Studies on Health and Well-being. 2024;19:2296694.

12 Qutoshi SB. Phenomenology: A Philosophy and Method of Inquiry. Journal of Education and Educational Developement. 2018;5:215.

13 Creswell JW, Poth CN. Qualitative Inquiry & Research Design: Choosing Among Five Approaches. 4th ed. California: SAGE Publications; 2018.

14 Colaizzi PF. Psychological research as the phenomenologist views it. In: Valle RS, King M. Existential-phenomenological alternatives for psychology. New York: Oxford University Press; 1978. p. 48-71.

15 Polit DF, Beck CT. Essentials of nursing research: appraising evidence for nursing practice. 10th ed. Philadelphia: Lippincott Williams & Wilkins; 2021.

16 Ahmed SK. The pillars of trustworthiness in qualitative research. Journal of Medicine, Surgery, and Public Health. 2024;2:100051.

17 O'Brien BC, Harris IB, Beckman TJ, et al. Standards for Reporting Qualitative Research: a synthesis of recommendations. Academic Medicine. 2014;89:1245-51.

18 Tang HT, Vu HM, Tang HT, T et al. Knowledge, attitude and practice on fall risk factors and prevention among rural older community-dwellers in Vietnam. PLoS One. 2023;18:e0295119.

19 Ang SGM, Saunders R, Siah CJR, et al. Factors associated with family carers' fall concern: Prospective study protocol. Collegian. 2023;30:647-52.

20 Hoffman GJ, Shuman CJ, Montie M, et al. Caregivers' views of older adult fall risk and prevention during hospital-to-home transitions. Applied Nursing Research. 2019;47:10-5.

21 Montero-Odasso M, Van Der Velde N, Martin FC, et al. World guidelines for falls prevention and management for older adults: a global initiative. Age and Ageing. 2022;51:afac205.

22 Kim GS, Park MK, Lee JJ, et al. Situational and environmental risk factors associated with home falls among community-dwelling older adults: Visualization of disparities between actual and perceived risks. Geriatric Nursing. 2025;62:221-8.

23 Bongelli R, Busilacchi G, Pacifico A, et al. Caregiving burden, social support, and psychological well-being among family caregivers of older Italians: a cross-sectional study. Frontiers in Public Health. 2024;12:1474967.

24 Teng L, Wang D, Zhou Z, et al. Associations among frailty status, hypertension, and fall risk in community-dwelling older adults. International Journal of Nursing Sciences. 2023;11:11-7.

25 Jiang H, Yuan H, Tee S, et al. Perspectives and experiences of community-dwelling older adults who experience falling: A qualitative meta-synthesis. International Journal of Nursing Sciences. 2024;11:276-85.

26 Stacey M. The Experiences of Older Adults Labeled as a High Fall Risk: A Generic Qualitative Inquiry. Journal of Geriatric Medicine and Gerontology. 2022;8:128.

27 White CL, Barrera A, Turner S, et al. Family caregivers' perceptions and experiences of participating in the learning skills together intervention to build self-efficacy for providing complex care. Geriatric Nursing. 2022;45:198-204.

28 Lu X, Park NK, Ahrentzen S. Lighting Effects on Older Adults' Visual and Nonvisual Performance: A Systematic Review. Journal of Housing for the Elderly. 2019;33:298-324.

29 World Health Organization. Progress

report on the United Nations Decade of Healthy Ageing, 2021-2023. Geneva: World Health Organization; 2023.

30 van der Velde N, Seppala LJ, Herrero AC, et al. Falls prevention in community-dwelling older adults and implementation of world falls guidelines: a call for action across Europe by the European Geriatric Medicine Society Special Interest Group on Falls and Fractures. European Geriatric Medicine. 2025. [online]

31 Shao L, Shi Y, Xie XY, et al. Incidence and Risk Factors of Falls Among Older People in Nursing Homes: Systematic Review and Meta-Analysis. Journal of the American Medical Directors Association. 2023;24:1708-17.

32 Jarden RJ, Cherry K, Sparham E, et al. Inpatients' experiences of falls: A qualitative meta-synthesis. Journal of Advanced Nursing. 2025;81:4-19.

33 Costa-Menén MÀ, Gimeno-Pi I, Martin-Servet G, et al. Facilitators and barriers in the implementation of a fall prevention program based on physical activity for elderly people living in the community: A qualitative study. Public Health Nursing. 2024;41:1425-35.

34 Pantong U, Trapero I, Jareaprapal U. Analysis and prevention of falls among community-dwelling older adults in southern Thailand. Journal of Advanced Nursing. 2024;80:2121-36.

35 Do NM, Tolos C. Empowering Fall Prevention Through Integrated Lifestyle Medicine Strategies-From Recognition of Fall Risks to Implementation of Prevention of Falls for all in Practice. American Journal of Lifestyle Medicine. 2025. [online]