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Protocol for a qualitative systematic review and thematic synthesis of caregivers' perceptions and practices of fall prevention among older adults with prior falls

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Study protocol

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Title page

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Protocol for a qualitative systematic review and thematic synthesis of caregivers' perceptions and practices of fall prevention among older adults with prior falls

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Abstract

Background: Falls among older adults are common, potentially preventable, and remain a major global public health concern. Despite the availability of evidence-based fall prevention guidelines and interventions, falls continue to occur frequently among older adults, particularly among those with a history of previous falls. Falls may have substantial physical, psychological, and social consequences for both older adults and their caregivers. Caregivers play an important role in supporting and implementing fall prevention strategies; however, their perceptions, experiences, and caregiving practices may influence the effectiveness of these interventions. To date, no qualitative evidence synthesis has specifically explored caregivers' perceptions and practices regarding fall prevention among older adults with prior falls. This review therefore aims to synthesize qualitative evidence relating to caregivers' experiences, perceptions, and practices of fall prevention for older adults with a history of falls.

Methods/design: This protocol has been developed in accordance with the PRISMA-P guidelines and the Joanna Briggs Institute (JBI) methodology for qualitative systematic reviews and meta-aggregation. A comprehensive search will be conducted across the databases MEDLINE, Embase, CINAHL, PsycINFO, PubMed, Web of Science, Scopus, CNKI, WanFang, and VIP from database inception onwards. The search strategy will incorporate subject headings, index terms, and relevant free-text terms in both English and Chinese. Two reviewers will independently screen titles, abstracts, and full-text articles according to predefined eligibility criteria. Data extraction and methodological quality appraisal will also be conducted independently by two reviewers. Qualitative findings will be synthesized using the JBI meta-aggregation approach, and the results will be presented in a narrative format.

Discussion: This qualitative systematic review aims to provide a comprehensive understanding of caregivers' perspectives, experiences, and practices related to fall prevention among older adults with a history of falls. By synthesizing qualitative evidence across diverse care contexts, the review may identify barriers, facilitators, and contextual factors influencing the implementation of fall prevention strategies. The findings are expected to inform clinical practice, guideline implementation, and policy development, and may support the design of more person-centered and feasible interventions to reduce recurrent falls among older adults.

Systematic review registration: PROSPERO CRD42024545563

Keywords: Accidental Falls, Caregivers, Aged, Qualitative Research, Systematic

Review, Prevention

Background

Population ageing has become a major global demographic trend. In 2019, approximately 1 billion people worldwide were aged 60 years and older, and this number is projected to increase to 1.4 billion by 2030 and 2.1 billion by 2050.[1] China has the largest older adult population globally. In 2023, the population aged 65 years and older in China reached approximately 217.09 million.[2] Falls are a common and serious health concern among older adults. More than one-quarter of adults aged 65 years and older experience at least one fall each year, and falls remain the leading cause of injury-related mortality in this population.[3] In 2021, accidental falls resulted in 38,742 deaths among older adults.[4] Consequently, falls constitute a substantial and increasing public health challenge worldwide.[5] Beyond mortality and physical injury, falls may lead to functional decline, reduced quality of life, loss of independence, and increased healthcare utilization, thereby placing considerable burdens on older adults, caregivers, and healthcare systems.[6] Among the identified risk factors, a history of previous falls is recognized as one of the strongest predictors of subsequent falls in older adults.[7] Previous falls are therefore considered a key component of fall risk assessment and are consistently emphasized in international fall prevention guidelines.[8]

Caregivers of older adults may include family members, such as spouses or adult children, as well as paid or formal caregivers who provide direct care and support.[9] The involvement of caregivers in fall prevention is considered important for promoting collaboration, shared responsibility, and continuity of care.[10] Falls among older adults may have substantial consequences not only for the individuals themselves, but also for their caregivers, affecting their physical, emotional, and social well-being.[11] Caregivers, particularly those supporting older adults with functional or cognitive decline, often express considerable concern regarding the risk and recurrence of falls.[11-13] Previous studies have reported that fear of falling may be more prevalent among caregivers than among older adults themselves.[14] Furthermore, caregivers frequently experience heightened anxiety and vigilance following a fall event, particularly due to concerns about recurrent falls in care recipients.[15-18] Caregivers' perceptions may influence the implementation of fall prevention strategies in daily care. For example, some caregivers have reported reluctance to use assistive or mobility devices because these devices may symbolize ageing, frailty, or loss of independence for older adults.[18, 19] In addition, caregivers' concerns about falls may lead to changes in caregiving practices, including increased supervision, provision of additional assistance, continuous monitoring, or the use of restrictive measures.[11, 20] Qualitative evidence has also shown that caregivers may adapt their lifestyles following a fall incident, such as modifying the home environment, reorganizing daily routines, seeking additional support services, and increasing monitoring of older adults.[19] However, despite recognizing the potential consequences of falls, some caregivers

remain hesitant to implement specific fall prevention measures or environmental modifications.[21] Such variability in caregivers' perceptions and practices may influence the effectiveness and sustainability of fall prevention efforts among older adults at risk of recurrent falls.

Although falls among older adults are common, many are predictable and potentially preventable.[22, 23] Current evidence and international guidelines recommend multifactorial fall prevention strategies, including exercise interventions to improve muscle strength and balance, together with individualized risk reduction approaches based on systematic assessment of modifiable risk factors.[3, 22] Despite the recognized importance of fall prevention, caregivers may have limited knowledge and uncertainty regarding appropriate strategies to support older adults' mobility and physical activity safely.[21] In response to concerns about falls, some caregivers may assume greater responsibility for complex daily activities, such as meal preparation, shopping, housekeeping, and laundry, in an effort to reduce fall risk.[15, 21] However, excessive assistance and overprotective caregiving may unintentionally reduce older adults' opportunities to engage in activities of daily living and maintain functional independence.[17, 24] This may contribute to increasingly sedentary lifestyles, functional decline, and worsening disability.[18, 25]. In addition, restrictions on physical activity and reduced confidence in mobility may negatively affect the psychological well-being of both caregivers and care recipients, contributing to frustration, social isolation, and decreased quality of life.[18] Reduced activity levels may also paradoxically increase the risk of future falls through further deterioration in strength and balance.[25] Furthermore, differing expectations and approaches toward fall prevention may affect relationships between caregivers and older adults, potentially leading to tension and interpersonal conflict within caregiving interactions.[18]

Despite the availability of evidence-based recommendations, questions remain regarding how caregivers understand and implement fall prevention strategies in everyday care. Manuel Montero-Odasso and colleagues highlighted that existing fall prevention guidelines may insufficiently incorporate the perspectives and lived experiences of older adults with previous falls and fall-related injuries, as well as individualized approaches that reflect personal preferences and care needs.[26] In this context, caregivers' perspectives and experiences may provide valuable insights for the development and implementation of person-centered fall prevention strategies and future guideline recommendations.[26, 27] Understanding caregivers' perceptions and practices regarding fall prevention is therefore important, particularly for older adults with a history of falls who remain at high risk of recurrent falls. Exploring how caregivers perceive fall risk, interpret prevention strategies, and implement preventive practices in daily care may help identify barriers, facilitators, and variations in caregiving approaches across different contexts. Such evidence may contribute to the development of more feasible, acceptable, and person-centered fall prevention interventions and support the effective implementation of fall prevention guidelines in clinical and community settings.

Qualitative research methods are valuable for generating in-depth understanding of caregivers' perspectives, experiences, and decision-making processes related to fall prevention, as well as how fall prevention interventions are implemented within everyday care contexts.[28] Qualitative inquiry seeks to explore phenomena within their natural settings and to interpret the meanings individuals attribute to their experiences and actions.[29] Previous qualitative studies have examined issues related to fear of falling,[12, 17, 30] the limitations of simplistic fall prevention approaches,[31] and the consequences of excessive supervision and restrictive caregiving practices.[12, 17] Qualitative systematic reviews synthesize evidence relating to individuals' experiences, perceptions, and interactions with healthcare and caregiving processes, thereby providing a comprehensive understanding of complex healthcare phenomena.[29] Such reviews contribute to evidence-based healthcare by integrating findings across individual qualitative studies and identifying common themes, contextual influences, and variations in experiences.[29, 32] Meta-aggregation, as recommended by the JBI approach to qualitative evidence synthesis, enables the systematic aggregation of findings from primary qualitative studies to generate synthesized statements that may inform clinical practice and policy development. To date, no qualitative evidence synthesis has specifically examined caregivers' perceptions and practices regarding fall prevention among older adults with a history of falls. A qualitative systematic review and meta-aggregation on this topic may provide a more comprehensive understanding of how caregivers perceive their roles, experience fall prevention efforts, and implement preventive strategies when caring for older adults at risk of recurrent falls. The findings may help inform the development of person-centered fall prevention interventions, improve implementation of evidence-based guidelines, and support caregivers in diverse care settings.

Methods and design

Design

This protocol has been developed in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) statement.[33, 34] The completed PRISMA-P 2015 checklist is provided in Supplementary Material 1.This review protocol has been registered with the International Prospective Register of Systematic Reviews (PROSPERO) under registration number CRD42024545563. The forthcoming qualitative systematic review will be conducted in accordance with the methodology outlined in the JBI Manual for Evidence Synthesis.[35]

Inclusion and exclusion criteria

The search strategy will involve comprehensive electronic database searching supplemented by manual screening of reference lists and other relevant sources not identified through the initial database searches. The review strategy was developed

using the Population, phenomenon of Interest, and Context (PICo) framework, which is recommended for qualitative evidence synthesis and represents an adaptation of the PICO model for qualitative research.

Participants(P)

This review will include primary caregivers of older adults aged 60 years and older who have experienced at least one fall. A fall will be defined according to the World Health Organization definition as "an event which results in a person coming to rest inadvertently on the ground or floor or other lower level."Caregivers will be defined as individuals who provide direct and ongoing care to older adults. This includes both informal (unpaid) caregivers, such as spouses, partners, siblings, or adult children, and formal (paid) caregivers, including full-time or part-time care workers who provide hands-on assistance and support. No age restrictions will be applied to caregivers. Studies involving non-primary caregivers, defined as individuals who are not principally responsible for the care of the older adult, will be excluded. Healthcare professionals acting within their routine professional or clinical roles, such as physicians, nurses, or allied health professionals providing standard healthcare services, will also be excluded.

Phenomena of interest(I)

The phenomena of interest in this review are caregivers' perceptions and practices regarding fall prevention among older adults with a history of falls. In this review, perceptions refer to caregivers' beliefs, attitudes, knowledge, understandings, experiences, and interpretations related to fall prevention, as well as the perceived barriers and facilitators that may influence their engagement in fall prevention activities. Practices refer to the caregiving behaviors, strategies, interventions, and actions implemented in routine care to prevent falls and reduce the risk of recurrent falls among older adults.

Context (Co)

The context of this review will include studies conducted across diverse geographical regions and care settings, including community, hospital, nursing home, and home care environments. Consideration of these varied contexts will enable exploration of how environmental, organizational, and healthcare system factors may influence caregivers' perceptions and practices related to fall prevention. The review will also consider relevant sociocultural contexts, including racial, ethnic, and gender-related factors, as well as broader cultural norms and social structures that may shape caregivers' experiences, decision-making processes, and engagement in fall prevention practices.

Types of studies

This review will include primary studies employing qualitative methodologies, including phenomenology, grounded theory, ethnography, qualitative descriptive research, action research, and feminist research. Mixed-methods studies will also be considered for inclusion where qualitative data can be clearly identified and extracted; however, only the qualitative findings relevant to the review question will be included in the synthesis. Case studies, case reports, and studies in which discourse analysis constitutes the primary methodological approach will be excluded. No restrictions will be placed on geographical location or year of publication. Only studies published in English or Chinese will be included. Qualitative studies from diverse disciplinary and academic backgrounds will be considered eligible for inclusion.

Search strategy

A three-step search strategy, as recommended by the Joanna Briggs Institute (JBI), will be employed to systematically identify relevant published and unpublished studies. In the initial stage, two reviewers (SLL and CLL) will undertake a preliminary search of the PubMed and CINAHL databases to identify relevant keywords, text words contained in titles and abstracts, and index terms used to describe the topic. The search strategy will incorporate a combination of key terms related to "falls," "aged," "caregivers," and "qualitative research," together with their corresponding Medical Subject Headings (MeSH), index terms, and relevant free-text terms. The search will include studies published from the inception of each database to the date of the final search. In the second stage, all identified keywords and index terms will be systematically adapted and applied across the selected databases, including MEDLINE, Embase, CINAHL, Scopus, the Cochrane Library, Web of Science, CNKI, WanFang, and VIP. The search strategy will be developed and refined in consultation with an experienced librarian to ensure comprehensiveness, accuracy, and methodological rigor. The final search strategy will be reviewed and approved by two independent reviewers prior to implementation. In the final stage, the reference lists of all included studies and relevant grey literature sources will be manually screened to identify any additional eligible studies that may not have been captured through the database searches. Where necessary, authors of primary studies or relevant organizations will be contacted to obtain missing information or clarify reported findings. Given the language proficiency of the review team, only studies published in English and Chinese will be included. A draft PubMed search strategy is presented in Table 1.

Table 1. PubMed search strategy (from database inception to May 14, 2025)

Key-term		search strategy	Numbers
#1	Fall	((((((Accidental Falls[MeSH Terms]) OR (Accidental Fall*[Title/Abstract])) OR (Fall*[Title/Abstract])) OR (Slip[Title/Abstract]))	305556

		OR (Slipping[Title/Abstract])) OR (tripping[Title/Abstract])) OR (fall-related injur*[Title/Abstract])	
#2	Aged	((((((((((Aged[MeSH Terms]) OR (Aged, 80 and over[MeSH Terms])) OR (Frail Elderly[MeSH Terms])) OR (aged[Title/Abstract])) OR (Elderly[Title/Abstract])) OR (older adult*[Title/Abstract])) OR (older people[Title/Abstract])) OR (older person*[Title/Abstract])) OR (older patient*[Title/Abstract])) OR (old inpatient*[Title/Abstract])) OR (senior*[Title/Abstract])) OR (geriatric*[Title/Abstract])) OR (frail elder*[Title/Abstract])	4706483
#3	Caregivers	((((((((((caregivers[MeSH Terms]) OR (caregiver*[Title/Abstract])) OR (caregiving[Title/Abstract])) OR (care givers[Title/Abstract])) OR (carer*[Title/Abstract])) OR (care provider*[Title/Abstract])) OR (care partner*[Title/Abstract])) OR (care-giver*[Title/Abstract])) OR (family member*[Title/Abstract])) OR (spouse*[Title/Abstract])) OR (adult child*[Title/Abstract])	379892
#4	Qualitative	((((((qualitative research[MeSH Terms]) OR (Qualitative[Title/Abstract])) OR (phenomenolog*[Title/Abstract])) OR (ethnograph*[Title/Abstract])) OR (grounded theory[Title/Abstract])) OR (action research[Title/Abstract])) OR (feminist research[Title/Abstract])	504692
#5		#1 AND #2 AND #3 AND #4 AND	368

Study selection

Study selection will be conducted by two independent reviewers. All records identified through the electronic database searches will be exported to Zotero for reference management, where duplicates will be identified and removed prior to screening. Titles and abstracts will be screened independently by the two reviewers

against the predefined eligibility criteria to identify potentially relevant studies. The full texts of all potentially eligible articles will then be retrieved and assessed independently for inclusion. The reference lists of included studies will also be manually screened to identify any additional relevant publications. Any disagreements arising at any stage of the selection process will be resolved through discussion between the two reviewers. If consensus cannot be reached, a third reviewer will be consulted to adjudicate. The study selection process will be documented in detail and presented using a PRISMA flow diagram, in the final report.

Assessment of methodological quality

The methodological quality of included studies will be assessed using the JBI Critical Appraisal Checklist for Qualitative Research[36]. In accordance with JBI guidance, the checklist will not be used to generate an overall numerical score or to exclude studies based solely on a predefined threshold. Instead, the results of the critical appraisal will be considered when interpreting the review findings and will inform the assessment of confidence in the synthesized findings. Any disagreements between reviewers during the appraisal process will be resolved through discussion. If consensus cannot be reached, a third reviewer will be consulted to adjudicate. Confidence in the synthesized findings will be assessed using the JBI ConQual approach, which evaluates dependability and credibility. Synthesized findings will initially be rated as high confidence and downgraded as appropriate based on methodological limitations and the credibility of supporting evidence. A ConQual Summary of Findings table will be presented.

Data extraction

Data will be extracted independently by two reviewers using the standardized JBI data extraction tool. In accordance with the JBI Manual for Evidence Synthesis, study characteristics will be extracted, including details of the participants, context (e.g., setting, cultural and geographical location), methodology, methods, and phenomena of interest relevant to the review question and objectives. All findings relevant to the review question will be extracted verbatim, together with their supporting illustrations (e.g., participant quotations). Each finding will be assigned a level of credibility (unequivocal, credible, or unsupported) as defined by JBI[37]. To ensure consistency and minimize errors, the data extraction tool will be pilot-tested independently by the reviewers using three included studies prior to full data extraction. Extracted data will be cross-checked for accuracy, and any discrepancies will be resolved through discussion. If consensus cannot be reached, a third reviewer will be consulted. Where necessary, authors of primary studies will be contacted to obtain missing or additional information to clarify reported findings.

Data synthesis

The findings will be synthesised using the JBI meta-aggregation approach. NVivo software will be employed to facilitate data management and organisation during the synthesis process. Following data extraction, findings classified as unequivocal or credible will be aggregated by grouping those with similar meaning into categories. These categories will then be synthesised into overarching themes that represent integrated findings. The synthesised findings will generate a coherent set of evidence-based conclusions to inform clinical practice and policy. The results will be presented in a structured narrative format.

Discussion

This protocol describes a systematic review that will include both published and unpublished qualitative studies. The aim of this review is to comprehensively explore caregivers' perceptions and experiences regarding fall prevention initiatives for older adults with a history of falls. Existing evidence highlights the important role of caregivers in supporting care recipients with fall prevention. This broad and heterogeneous body of evidence will provide a deeper understanding of individuals' values, beliefs, priorities, perspectives, and experiences regarding interventions, healthcare services, policies, and care processes. It is anticipated that the findings will provide insights into the challenges and facilitators experienced by caregivers that may hinder or support the effective implementation of fall prevention strategies. The results of this review will offer evidence to inform clinical decision-making and policy development, ultimately supporting the implementation of interventions aimed at reducing falls among older adults.

The strengths of this protocol include prospective registration in PROSPERO and adherence to the JBI methodology for qualitative evidence synthesis. Rigorous critical appraisal and systematic synthesis of the included studies will be undertaken. The meta-aggregation approach will enable the identification of key themes while preserving the integrity of the findings at the level of the original studies.This review has several limitations. First, restricting the inclusion to studies published in English and Chinese may introduce language bias and limit the cultural breadth. Second, the findings will rely on the data reported in the included studies, which may not fully capture the original context of the primary data. Where necessary, study authors will be contacted to clarify or verify the reported information.

Declarations

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Availability of data and materials

Not applicable

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

All authors made substantial contributions to the development of this review and protocol. SLL led the study and drafted the manuscript. SLL contributed to the development of the search strategy, study selection, data extraction, quality appraisal, data synthesis, and manuscript preparation. TPY contributed to the search process, study selection, data extraction, and quality appraisal. CLL and LL critically reviewed the protocol manuscript and provided methodological guidance and revisions. All authors read and approved the final version of the manuscript.

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- PRISMAPchecklist.docx