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Factors influencing the fear of falls in frail elderly individuals: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None specified.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 March 2025 and was last updated on 20 March 2025.

INTRODUCTION

Review question / Objective The aim of this study is to clarify the influencing factors of fall fear in frail elderly individuals.The construction of evidence-based questions adopts the PEO model.Population refers to frail elderly people.Exposures are influencing factors that are subject to evaluation.Outcome is the fear of falling.

Condition being studied With the acceleration of global population aging, the proportion of people aged 60 and above continues to rise. Frailty, as a physiological reserve decline related to aging, has become a core issue in elderly health. Weakened elderly people have a significantly higher risk of falling due to muscle loss, decreased balance function, and multiple diseases. The fear of falling, as a psychological sequelae of falling, has an incidence rate of 40% -70% in the frail population. This fear not only leads to a 'disuse cycle' of activity avoidance and functional decline, but is also closely related to depression, social isolation, and decreased quality of life. It may even increase the actual risk of falls by excessively restricting activities, forming a vicious cycle of 'fear brake weakness'. Although there have been studies exploring the influencing factors of fall fear, there is still a significant gap in systematic evidence for frail elderly people both domestically and internationally. This study will conduct a systematic evaluation to identify the influencing factors of fall fear in frail elderly individuals, with the aim of providing guidance for clinical healthcare.

METHODS

Participant or population The research subjects are frail elderly individuals who experience fear of falling. The following conditions should be met: 1. Elderly people aged ≥ 60 who are frail. 2. There is physical weakness/pre weakness. 3. Fear of falling occurs.

Intervention Not related to this content.

Comparator Not related to this content.

Study designs to be included Cross sectional study, pathological control study, cohort study.

Eligibility criteria Supplementary inclusion criteria: Multiple regression analysis was used in the study, and the results provided or could be converted into OR values and 95% CI for risk factors of concurrent diseases.
Additional exclusion criteria: 1. Non Chinese or English literature Unable to obtain the full text, incomplete data, inability to convert data, and miscalculated literature; 3. Only include the literature with the most comprehensive information for repeated publications; 4. Low quality literature.

Information sources Search 8 databases in total, such PubMed , Embase , Cochrane Library , Web of Science ,CNKI , wangfang data , CBM and VIP. The time is from database construction to March 1 in 2025.

Main outcome(s) The outcome measures are the prevalence of fall fear and related factors.

Quality assessment / Risk of bias analysis The included cohort studies or case-control studies were evaluated for quality using the Newcastle Ottawa Scale (NOS), while cross-sectional studies were evaluated using the evaluation criteria recommended by the Agency for Healthcare Research and Quality (AHRQ) in the United States! 42 will conduct quality evaluation, which will be conducted by two researchers respectively. The NOS scale is mainly evaluated from three aspects: population selection, intra group comparability, and measurement of outcome/exposure factors. The total score is 9 points, with 7-9 points indicating high quality, 4-6 points indicating moderate quality, and less than 4 points indicating low quality. The AHRQ standard includes 11 items, with scores of 0-3 indicating low quality, 4-7 indicating medium quality, and 8-11 indicating high quality.

Strategy of data synthesis A meta-analysis was performed using R Studio.The effect values are expressed as odds ratio (OR) and 95% confidence interval (CI), with I and P values used to describe heterogeneity. I2P>0.1, I≤50%, Indicating no significant heterogeneity between studies, a fixed effects model was chosen; On the contrary, choose the random effects model for analysis. Compare the consistency of the cross merging results of two effect models to analyze sensitivity. Egger's test was used to evaluate potential publication bias for factors influencing the inclusion of ≥ 10 studies, with P<0.05 indicating statistical significance.

Subgroup analysis 1. Severity of frailty (pre frailty and frailty). 2. Geographic regions (high-income countries and low - to middle-income countries). 3. Exclude studies with small sample sizes. 4. Segment by age.

Sensitivity analysis 1. Compare the changes in I2 and the combined effect size after excluding literature. 2. Observe the difference in data between the fixed effects model and the random effects model.

Country(ies) involved China.

Keywords frailty syndrome；old people；Fear of falling；factor.

Contributions of each author
Author 1 - shuhan Li - The first author conceived and designed this study, conducted literature search, evaluated literature quality, extracted data, and conducted analysis.
Email: 810561799@qq.com
Author 2 - jiru Meng - The second author conducted literature search, evaluated literature quality, extracted data, and made critical revisions to important knowledge content.
Author 3 - hongjuan Xu - The author conducted data extraction and explained the results, making critical revisions to important knowledge content.