REVIEW

Exploring factors contributing to the risk of falls in community-dwelling older adults: A review of the literature

Ola Hassan Hamato*[1], Jessie Johnson[2], Hajer Arbabi[1], Daniel Forgrave[3], Sumayya Ansar[3]

[1] *Primary Health Care Corporation, Doha, Qatar*
[2] *Faculty of Nursing, University of Calgary in Qatar, Doha, Qatar*
[3] *University of Calgary in Qatar, Doha, Qatar*

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ABSTRACT

Background: Falling is a big threat to community-dwelling older adults' independence. The chance of falling increases as people become older, which increases morbidity and mortality. The outcomes related to falls impact families, communities, and healthcare systems. As a result, the Primary Health Care Corporation (PHCC) seeks to decrease the number of falls for community-dwelling older adults in Qatar.
Aims: To explore the risk factors for falls in community-dwelling older adults. To inform the education of PHCC nurses so that they might begin to look at prevention strategies.
Method: Cronin et al.'s framework guided this integrative literature review. CINAHL, Academic Search Complete, Embase, and PubMed databases were utilized to search for relevant articles. The search process returned 20 articles that met the inclusion requirements.
Results: Various intrinsic and extrinsic factors lead to falls in community-dwelling older adults. The intrinsic factors include socio-demographic factors, physical health factors, physiological factors, sensory factors, psychological factors, and social factors. Environmental factors were the sole extrinsic factor.
Conclusion: The findings of this literature review can be used to inform the creation of an educational program to improve home care nurses' understanding of and attitudes toward the causes of falls in community-dwelling older adults. Through this program, nurses may begin to predict factors that lead to falls and, therefore, find strategies that help to reduce them.

Key Words: Older adult, Senior, Community, Fall, Risk factors

1. INTRODUCTION

Falls in community-dwelling older adults are major public health concerns.[1] Falls are the leading cause of injury and accidental death in older adults.[2] James et al.[3] reported that falls were the 18th largest cause of age-standardized rates of disability-adjusted life years in 2017. According to the World Health Organization,[4] a fall is defined as "an event which results in a person coming to rest inadvertently on the ground or floor or other lower-level" (para. 1). Each year, approximately 28% to 35% of those over the age of 65 and

*Correspondence: Ola Hassan Hamato; Email: ola.hamato@ucalgary.ca; Address: Algarafa Street, Zone 51, Street 740, Building 75, Unit Number 3, Doha, Qatar

32% to 42% of those over the age of 70 fall.[5,6] According to the Centers for Disease Control and Prevention,[7] adults aged 85 and older had the highest increase in the number of falls in 2018, at roughly 4%. Alqahtani et al.[8] reported the prevalence of falls in the United States at 22%, England at 28%, and Gulf Cooperation Council (GCC) countries at 46%. These researchers reported that the prevalence of falls was higher for females (60.2%) than for males (42%). Sharif et al.[9] reported similar findings in the United Arab Emirates with their female, illiterate participants over 75 having a higher prevalence of falls. According to Alshammari et al.,[10] the prevalence of falls in older adults in Qatar was 34% in 2011. Out of those in Alshammari et al.'s[10] study who fell, 53% reported falling frequently. Almawlawi et al.[11] reported that Qatari nationals fell more frequently than non-Qataris, females more than males, married people more than non-married people, and the uneducated more than the educated. Alshammari et al.[10] stated that most of the falls (72.8%) occurred inside the home. Moreover, Molés Julio et al.[12] stated that 22% of falls happen at home in the kitchen, bedroom, and bathroom. Therefore, the purpose of this literature review is to explore the factors that contribute to the risk of falls in community-dwelling older adults to inform the education of nurses within PHCC so that they might begin to look at prevention strategies.

2. METHOD

An integrative literature review was chosen to examine the risk factors for falls in community-dwelling older adults. This integrative review followed Cronin et al.'s[13] five steps: selecting a review topic, searching the literature, analyzing and synthesizing the literature, reporting the findings, and references.

2.1 Searching the literature

The literature search was carried out with the assistance of a librarian using the following databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Academic Search Complete, Embase, and PubMed. A comprehensive search was conducted by combining keywords using the Boolean operators AND and OR. The keywords included *fall*, "accidental fall*", "near fall*", "fear of fall*", "risk assess*", "risk factor*", "risk analys*", risk*, community-dwell*, "community dwell*", "independent liv*", "independent-liv*", "aging in place", educat*, knowledge, instruct*, skill*, session*, "evidence based", train*, information,* and *curriculum*. Articles focusing on interventions were eliminated from the results using the keyword intervention and the Boolean operator NOT. Based on this search strategy, 779 articles were identified for possible inclusion. These 779 articles were further evaluated for inclusion in this review. After removing duplicates, applying inclusion and exclusion criteria to the titles and abstracts, and reviewing the full text of 175 articles, 20 articles were chosen for inclusion in this review (see Figure 1). The inclusion criteria were (a) scholarly, peer-reviewed articles, (b) articles published in English, (c) articles published within the previous seven years, (d) articles that addressed falls in community-dwelling older adults, and (e) articles focused on older adults 65 years of age and above. Hong et al.'s[14] Mixed Method Appraisal Tool (MMAT) version 2018 was used to critically appraise the quality of the 20 articles. Two independent reviewers found that the 20 articles satisfied the MMAT criteria for inclusion in this literature review.

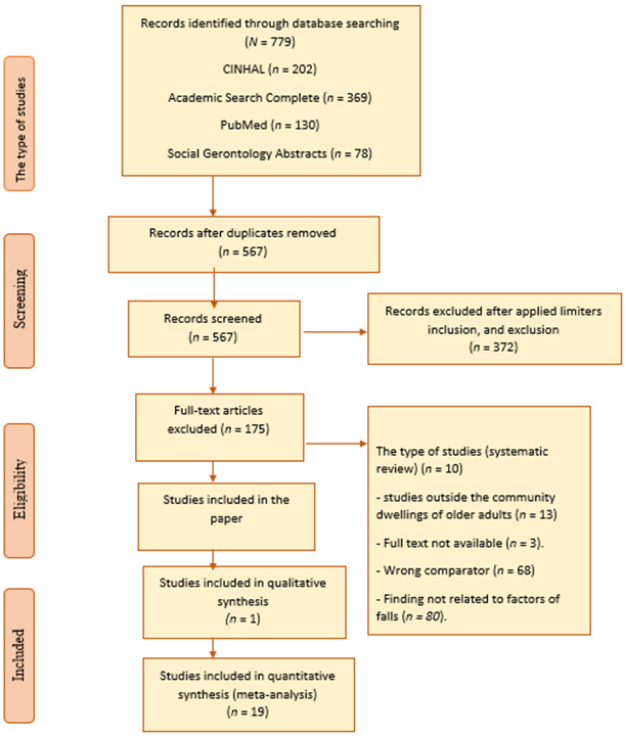

Figure 1. Literature search flow diagram

2.2 Analyzing and synthesizing the literature

Data from the 20 articles was arranged in a data extraction table to help with data reduction, data analysis, and thematic analysis. This data extraction table included the following categories: authors, year, title, and country; purpose; study design; method; and main findings. Two themes emerged from the thematic analysis: intrinsic and extrinsic factors (see Figure 2).

3. RESULTS

The 20 studies included in this literature review were primary resources published between 2015 and 2022. The approaches used in these studies included nine quantitative descriptive

studies, nine quantitative non-randomized studies, one quantitative randomized study, and one qualitative study. These articles were undertaken in Malaysia (n = 3), the USA (n = 3), Brazil (n = 2), Japan (n = 2), the UK (n = 1), Sweden (n = 1), Canada (n = 1), Finland (n = 1), Germany (n = 1), Korea (n = 1), Taiwan (n = 1), China (n = 1), Australia (n = 1), and Spain (n = 1). These articles informed the overall aim of this integrative literature review, which was to find the most common risks of falls in community-dwelling older adults. An analysis of the intrinsic and extrinsic risk factors for falls resulted in 23 sub-themes (see Figure 3). The intrinsic factors were socio-demographic, physical health, physiological, sensory, psychological, and social. The extrinsic factor was environmental.

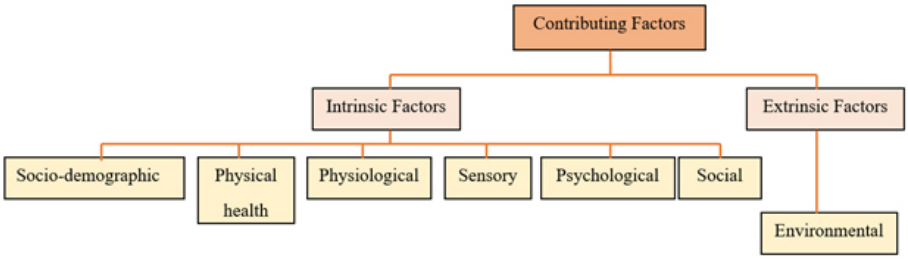

Figure 2. Themes of contributing factors in community-dwelling older adults

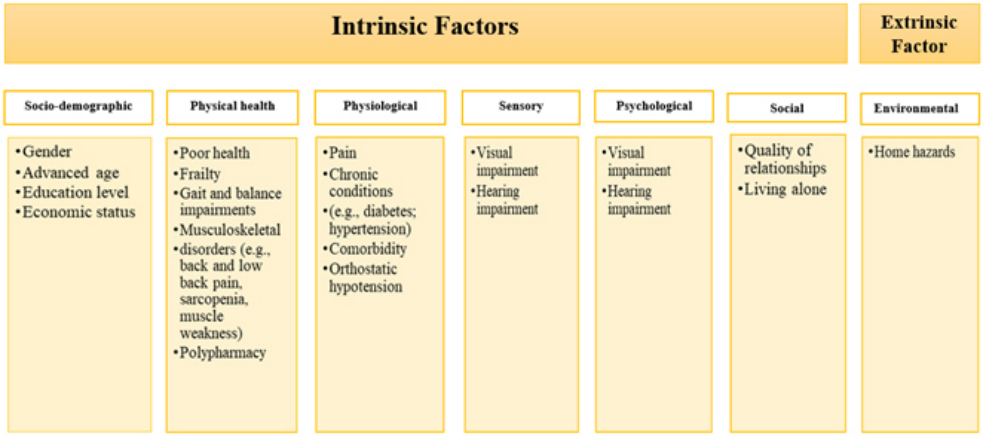

Figure 3. Sub-themes of contributing factors in community-dwelling older adults

3.1 Intrinsic factors

3.1.1 *Socio-demographic factors*

Socio-demographic factors are significant risk factors for falls, which include gender, advanced age, education level, and economic status.

(1) Gender

Gender has been found to impact the risk of falling. Most studies in this review have reported that females have a higher risk of falling than males.[15–22] Fonad et al.[16] conducted a cross-sectional study with 1,243 women and men above age 75 to find the relationship between falls and general health, nutrition, dental health, and medication. They found that more women (64%) than men (34%) had fallen in the past six months. However, Zhao et al.[23] reported that males were more likely than females to have a fall. Of the 1,356 participants in their study, 27% of the men had fallen in the previous six months while only 18.5% of the women had fallen in the same period.

(2) Advanced age

Advanced age is a risk factor for falls in older adults. According to the research included in this review, people are more likely to fall as they age.[15,18–21,24,25] According to Alex et al.,[15] the number of falls increases as adults become more advanced in age. These authors found that 71 out of the 326 older adults in their study between 65 and 69 years of age fell in the past year, while 84 out of the 255 older adults in their study above 75 fell in the past year. Nicklett et al.[21] reported that older age was substantially related to a higher risk of multiple fall occurrences in every age-adjusted multivariate logistic analysis. These researchers found that their participants above 85 years of age had a more significant risk of multiple falls ($p <$

.001) compared to those participants between 80 and 84 years of age ($p < .05$).

(3) Education level

The studies included in this review reported that education level is a risk factor for falls in older adults. Five studies in this review have found that older adults with a lower education level have a higher risk of falls than educated older adults.[15,19,20,25,26] Alex et al.[15] found that the population in their study who had primary education had a significant number of falls ($p = .047$). Kim et al.[19] found that 9% of uneducated older adults in their study had a significant number of falls between 2011 and 2017 compared to 6.3% of older adults who had a university or higher level of education. Moreover, Romli et al.[26] found that their participants who had no education or primary education had a significant number of falls (5.91%) in the previous 12 months compared to participants who had a tertiary level of education (4.53%).

(4) Economic status

Economic status is one of the risk factors for falls in older adults according to the research included in this review.[19,26] Kim et al.[19] reported that being unemployed, having a blue-collar career, and having lower wealth and income were associated with falls. In addition, Romli et al.[26] found that lower monthly expenditure is one of the factors independently associated with home hazards that lead to falls.

3.1.2 *Physical health*

Physical health factors are significant risk factors for falls, including poor health, frailty, gait and balance impairments, polypharmacy, and musculoskeletal disorders.

(1) Poor health

Poor health is a risk factor for falls among older adults.[16,27] Kitayuguchi et al.[27] stated that poor or very poor health was significantly associated with falls ($p < .001$). Fonad et al.[16] reported strong links between falls and poor health, including poor dental health, lack of appetite, and low overall food consumption. These factors are also often referred to as causes of frailty in elderly people.[16]

(2) Frailty

Prefrailty and frailty have been found to increase the risk of falling in community-dwelling older adults.[20,22] Umegaki et al.[22] stated that exhaustion is a component of frailty that is significantly associated with a history of falls ($p = .003$). Lu et al.[20] reported that prefrail older adults had a significantly lower gait speed which contributed to falls.

(3) Gait and balance impairments

Six studies have mentioned that gait and balance impairments contribute to a high risk of falls in community-dwelling older adults.[20,22–24,28,29] There is a link between severe sarcopenia and postural balance and the risk of falling.[28] In addition, older adults who had changed or bad balance performance and low gait speed that limited their activities were more likely to fall than others.[20,22–24]

(4) Polypharmacy

Polypharmacy is another risk factor for falls.[15,16,18] Alex et al.[15] reported that older adults who used five or more medications had a more significant risk of falls ($p < .007$) compared to older adults who used two or four medications ($p < .378$).

3.1.3 *Physiological factors*

Physiological factors are significant risk factors for falls, including pain, chronic conditions, comorbidity, and orthostatic hypotension.

(1) Pain

This literature review shows that pain is one of the main risk factors for falls in community-dwelling older adults.[27,29,30] Li et al.[30] reported that pain was significantly associated with falls in community-dwelling older adults. Participants in their study reported incidences of falls related to pain ($p = .001$) during the five years before their study. In addition, Lin et al.[29] stated that 75% of falls were because of pain and discomfort.

(2) Chronic conditions

Five studies have found that chronic conditions cause a high risk of falls in community-dwelling older adults.[15,18,21,23,24] The significant clinical risk factors that were present among fallers were diabetes mellitus, Parkinson's disease, arthritis, and transient ischemic attack. Brundle et al.[24] reported a high risk of falling for older adults who had specific medical issues and symptoms, such as lack of sensation in the feet caused by diabetes, Parkinson's disease, knees "giving out," arthritis, vertigo, poor circulation, ear problems that caused dizziness, heart problems, and blacking out. Moreover, Just et al.,[18] Nicklett et al.,[21] and Zhao et al.[23] reported that older adults had a higher risk of being multiple fallers if they had chronic conditions, such as heart failure, diabetes, high blood pressure, cancer, stroke, lung disease, and dementia.

(3) Comorbidity

Four studies reported that comorbidity causes a high risk of falls in community-dwelling older

adults.[15,18,20,21] Alex et al.[15] found that the presence of two or more comorbidities had a strong association with falls. Moreover, Just et al.[18] reported that higher functional comorbidity was associated with a higher prevalence of arthritis, thyroid dysfunction, heart failure, and osteoporosis, which were associated with an increased risk of falling. Nicklett et al.[21] found that the population in their study who had comorbidity of three or more conditions had a significant number of single falls ($p < .05$) and multiple falls ($p < .01$).

(4) Orthostatic hypotension

Two studies have reported that orthostatic hypotension causes a high risk of falls in community-dwelling older adults.[31,32] Hohtari-Kivimäki et al.[31] pointed out that the risk of falling for older adults is linked to orthostatic hypotension. In addition, Menant et al.[32] reported that orthostatic hypotension increased the risk of unexplained falls among older adults.

3.1.4 *Sensory factors*

Studies included in this review reported that visual impairment and hearing impairment cause a high risk of falls in community-dwelling older adults.

(1) Visual impairment

Seven studies included in this review have found that visual impairment causes a high risk of falls in community-dwelling older adults.[15,18,20,21,24,26,29] Nicklett et al.[21] reported that older adults who had vision impairment had a significantly high risk of falls. These authors found that 43 out of the 140 participants in their study who had poor vision or were legally blind had multiple falls compared to seven out of 60 participants who had excellent vision. In addition, Romli et al.[26] stated that visual impairment is one of the factors independently associated with home hazards that lead to falls.

(2) Hearing impairment

Three studies reported that hearing impairment causes a high risk of falls in community-dwelling older adults.[15,20,23] Lu et al.[20] reported that 299 out of the 13,877 older adults in their study who had poor hearing had fallen compared to the 165 older adults in their study who had good hearing. In addition, Zhao et al.[23] reported that 62 out of their 1,356 participants who had hearing impairment had fallen ($p = .016$).

3.1.5 *Psychological factors*

Psychological factors are significant risk factors for falls, including cognitive impairment, depression, anxiety, and fear of falling.

(1) Cognitive impairment

Four studies reported that cognitive impairment causes a high risk of falls in community-dwelling older adults.[15,24,25,33] Quach et al.[33] reported that falls were linked to mild cognitive impairment (MCI). Among their participants with low social engagement (SE), MCI was associated with a higher fall rate in the past year ($R^2 = 1.97$, 95% CI [1.17-3.31]). However, there was no statistically significant link between MCI and falls in participants who had high SE ($R^2 = 1.03$, 95% CI [0.60-1.74]). Moreover, Rivan et al.[25] stated that physical frailty and cognitive frailty in older adults were strong predictors of falls, injuries, and disability. These researchers reported that physical frailty (AOR = 2.88, 95% CI [1.19–6.99], $p < .05$) and cognitive frailty (AOR = 2.98, 95% CI [1.78–4.99], $p < .05$) were significant predictors for the incidence of falls.

(2) Depression

Seven studies reported that depression increased the risk of falls.[15,22,23,27,29,30,32] Menant et al.[32] stated that unexpected falls were more likely in people who had depressive symptoms. These researchers used a multinomial logistic regression model to compare two groups of people: one who had unexpected falls and the other who had no falls. They found a significant association between depressive symptoms and unexpected falls ($p = .002$).

(3) Anxiety

Two studies in this review have reported that anxiety causes a high risk of falls.[23,29] Zhao et al.[23] combined anxiety and depression as one variable in their study. These researchers found that anxiety and depression were significant predictors of falls in older adults ($p < .001$) as 139 out of the 499 older adults in their study who had anxiety as well as depression had fallen.

(4) Fear of falling

Two studies reported that fear of falling increases the risk of falls.[28,29] Gadelha et al.[28] reported a positive association between older adults who had severe sarcopenia and a fear of falling that increased the risk for falls in older adults. These authors found that fear of falling was higher ($p < .001$) in those at all phases of sarcopenia compared to those without sarcopenia. However, no distinctions were found in their study between presarcopenia, sarcopenia, and severe sarcopenia. Moreover, Lin et al.[29] reported that roughly 70% of the variation in reductions in overall quality of life could be accounted for by fall risk factors and fear of falling.

3.1.6 *Social factors*

Social factors are significant risk factors for falls, including marital status and living alone.

(1) Marital status

Three studies in this review have stated that the type of relationship is a contributing factor in the risk of falls in community-dwelling older adults.[15,19,20] Kim et al.[19] stated that marital status is one of the main socioeconomic risk factors for falls. Moreover, Lu et al.[20] reported that marital status was a statistically significant risk factor for falls (OR = 1.766). Alex et al.[15] reported that 93 out of the 365 participants in their study who were single, widowed, or separated had a significantly higher risk for falls ($p < .047$).

(2) Living alone

Two studies reported that living alone causes a high risk of falls in community-dwelling older adults.[19,25] Kim et al.[19] reported that participants in their study who lived alone had a higher risk of falling ($p = .579$) according to their univariate logistic regression analysis of the whole period between 2011 and 2017. A similar study by Rivan et al.[25] found that participants who lived alone had a higher risk of falls than participants who lived with others ($p < .05$).

3.2 Extrinsic factors

Environmental

Environmental hazards are a significant risk factor for falls. Two studies in this review have reported that environmental hazards increase the risk of falls in community-dwelling older adults.[24,26] Romli et al.[26] reported that toilet and bathroom hazards were commonly reported (> 30%) as were slippery flooring, inadequate bedside light access, and improper footwear. These researchers reported that home hazards were risk factors for falls but were not significant. Moreover, Brundle et al.[24] noted that falls in community-dwelling older adults were caused by spills, freshly scrubbed floors, washing machine leaks that the elderly could not see, poor lighting, and changes to a previously familiar home environment.

4. Discussion

The major findings of this literature review showed that socio-demographic factors, physical health factors, physiological factors, sensory factors, psychological factors, social factors, and environmental factors were associated with falls in community-dwelling older adults.

4.1 Socio-demographic factors

This review has shown that old age, being female, having low income, and having a low education level are the main socio-demographic factors contributing to falls. This result is consistent with Qian et al.[34] who stated that increasing age was a factor in falls. These authors reported that 47.7% out of 28,396 older adults between 75 and 84 years of age fell compared to 16.2% out of 28,396 older adults between 65 and 74 years of age. Li et al.[35] reported that 16 studies included in their systematic review found a connection between aging and the probability of falls in the general population. Similarly, Deandrea et al.[36] reported that all studies in their systematic review found a consistent rise in the risk of falls with age. Qian et al.[34] also reported that female older adults had a higher risk of falling than males. These authors stated that 59.8% out of 28,396 older adults in their study who fell were female compared to 40.2% out of 28,396 older adults who were male. Moreover, Li et al.[35] stated that older women were significantly more likely to fall than younger women. Other previous studies have also identified older people and females as being more at risk factors for falls.[36–39] However, Zhao et al.[1] showed that men were more likely to fall than women. Sotoudeh et al.'s[40] study supports the findings of this review related to the impact of low income and low education levels on the risk of falling. These researchers reported that 389 out of the 653 older adults in their study had a low income and had a risk of falls, while only five older adults in their study who had a high income had a risk of falls. Zhao et al. also found that the 185 older adults in their study who were illiterate had a higher risk for falls while only 55 older adults in their study who had a university level of education had a risk for falls. However, Deandrea et al.[36] reported that low education was not associated with the risk of falls.

4.2 Physical health factors

This literature review has shown that multiple physical health factors lead to falls, including frailty, gait and balance impairments, musculoskeletal disorders, and polypharmacy. Fang et al.'s[41] study supports this finding. These researchers reported that a higher percentage of individuals reported baseline falls and fractures with increased age and frailty indices. These researchers also found that elderly people with frequent falls had frailty indices that were considerably greater than those who had not fallen. Lu et al.[20] have also found that frailty is strongly linked to frequent falls among community-dwelling older adults. In addition, Bartosch et al.[42] reported that recurring falls and frailty are significantly correlated (OR = 2.55 [1.62-3.99]; OR = 3.04 [1.63-5.67]). These researchers found that this was most noticeable in older adults who were frail but had not fallen (OR = 3.06 [1.59-5.89]). Previous studies have also found that gait and balance impairment can make older persons more likely to fall and sustain injuries.[43–46]

4.3 Physiological health factors

This literature review has shown that pain, chronic conditions, comorbidity, and orthostatic hypotension are the main physical health factors related to falls. This finding is supported by previous research. Cai et al.[47] found fallers with moderate-to-severe pain had roughly double the likelihood of indoor falls as compared to fallers without chronic pain (OR = 1.93, 95%; CI [1.32-2.83]). Altintas and Aslan[48] reported that elderly people with significant pain fell four times more frequently than those without pain. In addition, these researchers reported that older adults with pain had a significant association with falls ($p < .001$). Janakiraman et al.[49] reported that older adults who had hypertension or diabetes mellitus were more at risk of falls in community dwellings. These authors reported that their participants who had hypertension (62.4%) had a higher risk of falls than those without hypertension (37.6%). In addition, 82.9% of their participants who had diabetes had a higher chance of falling than the 17.1% of participants who did not have diabetes. Moreover, Rundell et al.[50] reported that older adults with more than one chronic condition had lower physical performance and higher probabilities of repeated falls compared to individuals with no or one chronic condition. These researchers reported that having two, three, or four chronic illnesses was associated with higher odds of recurrent falls than having zero or one chronic condition.

4.4 Sensory factors

Visual impairment and hearing impairment are the main sensory factors contributing to falls in this review. This finding is supported by previous research. Lee et al.[51] and Rossat et al.[52] found that older adults with eye disease experienced more falls than others who did not have eye disease. Kyrdalen et al.[53] and Stevens and Lee[54] stated that impaired vision is one of the risk factors for falls in community-dwelling older adults. Moreover, Legood et al.[55] reported that the rate of falls in older adults with visual impairment is 1.7 times higher than in age-matched visually normal populations. In addition, five studies in Li et al.'s[35] systematic review showed a connection between the risk of falling and vision impairment. Similarly, Jiam et al.[56] as well as Rutherford et al.[57] have found that hearing loss in older adults increases the risk of falling. Moreover, Wilson et al.[58] reported that participants with slight hearing impairment had 2.10-fold increased odds of falling in the previous 12 months. The literature also shows that hearing loss is a substantial risk factor for falls in homebound, community-dwelling older adults.[58,59] However, Kulmala et al.[60] found that 201 (44%) out of 589 older adults with hearing impairment in their study fell compared with 227 (38%) who did not fall. Ogliari et al.[61] stated that the risk of falling was highest in community-dwelling older adults when hearing loss occurred at the same time as vision loss.

4.5 Psychological factors

The main psychological factors for falls noted in this review are cognitive impairment, depression, anxiety, and fear of falling. This finding is confirmed by a systematic review undertaken by Muir et al.[62] and another study by Kyrdalen et al.[53] who reported that cognition is linked to severe fall-related injuries. Moreover, Delbaere et al.[63] reported that people with MCI experience injuries or multiple falls almost twice as often as those with normal cognitive function. Quach et al.[33] indicated that social isolation causes symptoms of depression that lead to an increased risk of falls. These authors reported that an increased risk of both indoor and outdoor falls was independently associated with depression. Their study found that people with clinically significant depressive symptoms were 62% more likely to fall indoors and 60% more likely to fall outdoors than people without these symptoms. This result is supported by a systematic review conducted by Hallford et al.[64] that revealed a significant positive correlation between anxiety symptoms and falls. Their significant overall odds ratio of 1.53 indicates that high levels of anxiety were linked to a 53% higher risk of falling (95%; CI [1.28-1.83]; $p = .001$). Moreover, Lavedán et al.[65] found that their participants who had previously experienced falls were 2.5 times more likely to report fear of falling than those who had not fallen. Systematic reviews conducted by Li et al.[35] and Rakhshani et al.[66] have also found that falls are a consequence of the fear of falling.

4.6 Social factors

The findings from this literature review showed that marital status and living alone are the main social risk factors for falls. These findings were confirmed by Wu and Ouyang[67] who also demonstrated a link between falls and marital status. In addition, Ngamsangiam and Suttanon[68] reported that unmarried people tended to fall 1.2 to 2.8 times more frequently than married people. Bu et al.[69] reported that males who live alone had a more significant risk for falls than females. The risk ratio for living alone was 1.72 (95%; CI [1.34-2.19]) for men while just 1.11 (95%; CI [0.93-1.34]) for women. Moreover, Ngamsangiam and Suttanon[68] reported that older adults who live alone have a 1.2 to 3.1 times increased risk of falling.

4.7 Environmental factors

Home hazards are the main environmental factors related to falls. This finding is supported by Ngamsangiam and Suttanon's[68] study. These researchers stated that older adults had a 1.71 times greater chance of falling while living in

a home with a high-risk level than when living in a home with a low-risk level (95%; CI [1.13-2.60]). Keglovits et al.'s[70] systematic review showed 17 home hazards that lead to falls: throw rugs or carpets, cords or wires, clutter, poorly placed light switches, no grab bars, items placed too high, items placed too low, toilet seat too low, slippery or wet surfaces, uneven floor surfaces, snowy or icy surfaces, too many stairs, backless or unsupportive shoes, inadequate heating or cooling, inadequate lighting, step stools without railings, and pets. In addition, Alshammari et al.[10] reported that environmental risks, such as carpets and rugs, significantly contribute to the occurrence of falls ($p \leq .001$); 81.7% of those adults in their study who were exposed to environmental risks disclosed a history of falls. However, Buckley et al.[71] reported that living in a hazardous situation does not necessarily increase the risk of falling. They stated that a person may not fall even if her or his home or the surrounding area is unsafe. The ability of the individual to deal with a hazardous environment or the interaction between the individual and the environment appears to be important.[71]

5. Conclusion

Falls for community-dwelling older adults can result in serious health problems. Therefore, this integrative literature review aimed to identify the risk factors of falls for community-dwelling older adults. PHCC nurses in general and Home Health Care Services nurses should be aware of the intrinsic and extrinsic risk factors related to falls. The main intrinsic risk factors related to falls are socio-demographic, physical health, physiological, sensory, psychological, and social. The main extrinsic factor is environmental. Understanding these intrinsic and extrinsic risk factors will enable PHCC nurses to be aware of and, hence, look at prevention strategies. An educational program based on the results of this literature review is suggested for PHCC nurses to enhance their knowledge, attitudes, and abilities in providing education and healthcare to community-dwelling older adults. In addition, prevention policies should be applied for community-dwelling older adults based on the results and discussion of this review.

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Authors contributions

OH was responsible for design, data evaluation and analysis, drafting, and revision. Dr. JJ contributed to the review's design, data evaluation, drafting, and revision. HA was responsible for drafting, revision, and collaboration between the University of Calgary in Qatar and the Primary Health Care Corporation. DF made substantial contributions to the design, drafting, and revision of the review. SA contributed substantially to the design of the review and the literature search. All authors read and approved the final manuscript.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

As this was a review article no consent was needed.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.
The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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