Prevalence, risk factors, and preventive interventions for delirium in older adults living at home and in long term care: a scoping review

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ABSTRACT

Achtergrond: Delier is een veelvoorkomend maar vaak ondergediagnosticeerd neuropsychiatrisch syndroom bij oudere volwassenen, vooral bij ouderen die zelfstandig wonen of in een zorginstelling verblijven. Het wordt in verband gebracht met een verhoogde morbiditeit, mortaliteit en institutionalisering. Terwijl delier in een ziekenhuisomgeving uitgebreid is onderzocht, is de detectie en preventie van delier in de thuissituatie, woonzorgcentra en assistentiewoningen nog onvoldoende onderzocht.

Doelstelling: Deze review onderzoekt de prevalentie, risicofactoren en preventieve interventies voor delier bij oudere volwassenen die thuis wonen en in de residentiële zorg, inclusief woonzorgcentra en assistentiewoningen.

Methoden: Er werd een scoping review uitgevoerd, bestaande uit studies van personen ≥ 65 jaar bij wie een delier werd vastgesteld met behulp van gevalideerde instrumenten (bijv. DSM, ICD). In aanmerking komende studies hadden hun primaire focus op prevalentie, risicofactoren of preventieve interventies van delier. Gegevens over studiekarakteristieken, methoden en belangrijkste bevindingen werden geëxtraheerd en narratief samengevat, aangevuld met tabellen en figuren.

Resultaten: Zestig studies voldeden aan de inclusiecriteria. De prevalentie van delier varieerde van 0.1% tot 44.0% in de thuissituatie en van 1.0% tot 70.3% in residentiële zorg. Belangrijke risicofactoren in de thuissituatie en in de residentiële zorg waren cognitieve stoornissen of dementie en de mate van afhankelijkheid. Leeftijd, enkel onderzocht in de residentiële zorg, was meestal niet significant. Er werden verschillende preventieve interventies geïdentificeerd, maar de meeste studies beoordeelden eerder de haalbaarheid dan de werkzaamheid.

Conclusie: Delier blijft onderbestudeerd buiten de ziekenhuiscontext. Gebruik van gestandaardiseerde diagnostische criteria zijn essentieel om heterogeniteit in prevalentiestudies te verminderen, en randomized controlled trials zijn nodig om de effectiviteit van preventieve interventies te beoordelen. Daarnaast moeten risicofactoren voor delier in de thuisomgeving verder worden onderzocht.

ABSTRACT

Background: Delirium is a common yet often underdiagnosed neuropsychiatric syndrome among older adults, especially those residing in the home setting or in residential care. It has been associated with elevated risks of morbidity, mortality, and institutionalization. While delirium has been extensively studied in hospital settings, its detection and prevention in the home setting and residential care setting remain insufficiently investigated.

Objectives: This review investigates the prevalence, risk factors, and preventive interventions for delirium among older adults residing in the home setting and in residential care, including assisted home care facilities and nursing homes.

Methods: A scoping review was undertaken, including studies involving individuals aged ≥ 65 diagnosed with delirium through validated assessment tools (e.g., DSM, ICD). Eligible studies had a primary emphasis on the prevalence, associated risk factors, or preventive strategies related to delirium. Data on study characteristics, methodological approaches, and key findings were extracted and synthesized in a narrative format, supplemented by tables and figures.

Results: Sixty studies fulfilled the inclusion criteria. Reported delirium prevalence ranged from 0.1% to 44.0% in the home setting and from 1.0% to 70.3% in residential care. Key risk factors associated with delirium in the home setting and in residential care included cognitive impairment, the presence of dementia, and level of dependence, while age was generally not found to be significant and was only investigated in residential care. Although various preventive interventions were identified, most studies primarily examined their feasibility rather than their effectiveness in reducing the incidence of delirium.

Conclusion: Delirium continues to be insufficiently studied in non-hospital settings. The use of standardized diagnostic criteria is crucial to reduce heterogeneity in prevalence studies, and randomized controlled trials are needed to assess the effectiveness of interventions. Additionally, risk factors for delirium in the home setting require further investigation.

TITLE

Prevalence, risk factors and preventive interventions for delirium in older adults living at home and in long term care: a scoping review

INTRODUCTION

Delirium is characterized by disturbances in attention, awareness, and cognition that are not attributable to pre-existing neurocognitive disorders (1). It is associated with adverse outcomes, including elevated mortality, increased institutionalization, and prolonged hospitalization (2). Research has largely concentrated on high-risk patients in hospitals, with prevalence rates ranging from 29% to 64% in general wards and even higher in intensive care units (2). Conversely, delirium in home and residential care settings—where many older adults reside—remains underexplored. The unique characteristics of the home care environment may challenge the applicability of hospital-based detection and prevention strategies. Although studies indicate that delirium can be prevented (3-6), the evidence remains inconclusive for the residential care setting, such as assisted living facilities and nursing homes, or people in home setting. Previous research has identified several key risk factors for delirium, including advanced age, functional impairment, polypharmacy, and dementia (2, 7-9), which are also prevalent among frail older people in the aforementioned settings. Moreover, factors like social isolation and the absence of professional caregiving, more common in home setting, may pose unique detection and prevention challenges.

Given the anticipated scarcity and heterogeneity of research on this topic, a scoping review was deemed the most appropriate methodology to map existing evidence and identify gaps (10).

This scoping review aimed to review the evidence regarding the prevalence, risk factors and preventive interventions for delirium in older adults in home setting and in residential care, including assisted home care facilities and nursing homes.

METHODS

This scoping review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) guidelines (11), and was registered in the Open Science Framework on 9 July 2023 (12).

Eligibility Criteria

Studies were included if they involved older adults (≥65 years) residing at home or in residential care (e.g., nursing homes or assisted living facilities) and reported any of the primary outcomes (i.e. prevalence, risk factors, or preventive interventions for delirium). Delirium had to be diagnosed using validated tools (e.g., DSM, ICD). No date restrictions were applied. Exclusion criteria were studies focused solely on detection or treatment of delirium, those conducted in palliative, terminal or rehabilitation settings, or records in languages other than English, Dutch, French, or Chinese. Original research of all study designs were included, except case reports and case series. Reviews were only used for identifying additional studies.

Search Strategy

We searched databases Medline via PubMed, Embase, CINAHL, the Cochrane Library, Web of Science Core Databases, Scopus, ClinicalTrials.gov and ICTRP (International Clinical Trials Registry Platform) on 10 December 2023, guided by a biomedical information specialist (The full search strategy is listed in Appendix 1).

Study Selection

Citations were imported into Endnote, duplicates removed using the Bramer Method (13), and screened independently by two reviewers (IW and KLY). Afterwards, full texts were assessed for eligibility, and reference lists were screened for additional records. Discrepancies were resolved through discussion with a third reviewer (KM).

Data Extraction and Synthesis

One researcher (IW) extracted data (study purpose, participants, methods, key findings) into Excel and categorized the records by topic (prevalence, risk factors or preventive interventions) and by setting (living at home or residential care). Another researcher (KLY) checked the extracted data and categorizations, and the discrepancies were resolved through discussion.

Results are presented using tables, accompanied by a narrative summary. An evidence-gap map was created to provide an overview of the risk factors reported in the included studies using Microsoft Excel.

RESULTS

Identification of Studies

As illustrated by the PRISMA flow diagram, 10,991 records were retrieved following deduplication. Of these, 10,722 were excluded during title and abstract screening, and 204 after full-text review for reasons such as unavailability (n=16), out of scope (n=132), secondary focus (n=35), foreign language (n=8), duplicates (n=8), reviews (n=7), unvalidated assessment tools (n=2), or being supplementary material (n=1). Ultimately, 60 reports from 48 original studies were included.

Study Characteristics (Table 1 and Table 2)

Home setting (Table 1)

Fifteen studies focused on individuals in the home setting. Among these, 11 addressed delirium prevalence or incidence, 2 explored risk factors, and 5 examined preventive interventions. The studies spanned nine countries, with most conducted in the United States (n=4) (14-17) and published between 1997 and 2022. Diagnostic criteria varied, with the majority employing the Confusion Assessment Method (CAM) (n=6) (16-21), the Diagnostic and Statistical Manual of Mental Disorders (DSM) (n=5) (14, 22-25), or the International Classification of Diseases (ICD) (n=2) (15, 26). The Four A's Test (4-AT) was used in one study (27).

Residential care (Table 2)

In the residential care, 46 studies were included. Of these, 28 focused on delirium prevalence or incidence (prevalence n=25, incidence n=10), 20 on risk factors, and 10 on preventive interventions. These studies spanned 13 countries, primarily in the United States (n=7) (28-34), the United Kingdom (n=4) (35-38), and

Italy (n=4) (39-42), with publication dates ranging from 1998 to 2023. Diagnostic criteria varied, with most studies using CAM (n=19) (28, 29, 31-34, 37-39, 42-51) or DSM (n=12) (22, 25, 29, 30, 43, 48, 52-57). Other tools included 4-AT (n=2) (40, 41), Delirium Observation Screening Scale (DOSS) (n=2) (38, 58) and Neelon/Champagne Confusion Scale (NEECHAM) (n=2) (29, 31), alongside single mentions of ICD (34), Delirium Index (DI) (45), Delirium Rating Scale-Revsed-98 (37), Nursing Delirium Screening Scale (Nu-DESC) (55), Informant Assessment of Geriatric Delirium (I-AGeD) (56) and Resident Assessment Instrument-Minimum Data Set (RAI-MDS) (44).

Other settings

Bohlken et al. (59) investigated delirium prevalence and risk factors in a general practitioners' setting in Germany, encompassing patients from both home and residential care. As the results were not stratified by setting, this study is reported separately.

Prevalence and incidence (Table 3 and Table 4)

Home setting (Table 3)

The overall prevalence ranged from 0.1% (15) to 44% (27). Tremolizzo et al. (27) reported subgroup prevalences of 91.4% for delirium superimposed on dementia (DSD), and 71.4% for delirium associated with benzodiazepine use. Overall incidence, examined in only two studies, ranged from 1.1% (26) to 21.6% (14), with no subgroup data available.

Residential care (Table 4)

Prevalence rates ranged from 1.0% (38) to 70.3% (43), the latter observed in a population with dementia. Overall incidence ranged from 14.7% (0.77 per 100 person weeks) (60) to 29.7% (61).

Risk factors (Figure 2)

In Figure 2, each bubble represents a distinct risk factor, with its size proportional to the total sample size of the studies examining it. A divided bubble signifies being investigated in different settings, with the smaller segment representing the home setting. Risk factors examined in only one study are excluded from the figure but discussed in the text.

Home setting

In the home setting, functional impairment—reflected by higher ADL (Activities of Daily Living) scores—was significantly associated with delirium (14). Dementia, was consistently identified as a key risk factor (18, 24), alongside depressive symptoms (18) and the presence of hallucinations or paranoia (14). Heart failure, as well as urinary tract infections, were also reported as significant contributors to delirium risk (18).

Residential care

Age (39, 44, 48, 54, 62, 63) and gender (39, 44, 48) demonstrated inconsistent associations across studies, whereas lower education (40), malnutrition (40), nursing home residency (46), and widowhood (54) were each identified as significant risk factors in single studies. Inadequate hydration (48) showed no significant relationship. Functional impairments (physical, visual, auditory), (29, 31, 54, 64) as well as ADL

limitations (33, 40, 58, 63, 65), were consistently associated with increased delirium risk, except in one study (48). Cognitive impairment or dementia emerged as robust risk factors (39, 40, 44, 46, 48, 50, 58, 62-64). Specific deficits in orientation, language, and memory (63), as were behavioral disturbances (63) were independently significant. Depression was mostly associated with delirium (44, 48, 63). Pulmonary (29, 48, 58) and central nervous system disorders (e.g., Parkinson's, epilepsy, stroke, prior delirium) (46, 48, 58), incontinence (44, 48), electrolyte imbalance (29), and diabetes (48) increased risk, whereas cardiovascular disease (48, 63), renal insufficiency (48), cumulative comorbidity burden (39, 48, 65) and systemic infection (48, 54) yielded inconsistent or non-significant findings. Constipation (63), anemia (48), dysphagia (48), autoimmune diseases (48), and pain (48) were not associated with delirium. Polypharmacy showed mixed results (33, 48), antipsychotics (40, 48, 58, 65) and anticholinergic agents (39, 48) were mostly significant, while findings for benzodiazepines (50, 65) and antidepressants (29, 48, 65) varied. Opioids (65) and anxiolytics (48) were no significant risk factors for delirium, while a new introduced drugs were (44). Physical restraints (40, 46, 54, 65) and intravenous catheters (54) significantly increased delirium risk, whereas urinary catheters (41, 48), emergency visits (48), and the number of iatrogenic events (e.g., medical procedures, hospitalizations, or medication-related incidents) did not. Falls were generally a significant risk factor (33, 46, 48, 58, 63), while environmental orientation aids, such as windows or radios, (65) appeared protective. Finally, baseline delirium symptoms (60) and cumulative risk factors (66), were both linked to increased delirium risk.

Other settings

In other clinical contexts, such as the general practitioner setting (59), delirium was more prevalent among individuals residing in nursing homes. Dementia (ICD-10), sleep disorders, renal insufficiency, central nervous system disorders, fractures, use of multiple medication classes, benzodiazepines, and antiepileptics were all identified as significant risk factors in this population.

Preventive interventions

Home setting

Educating family caregivers on delirium risk factors and early symptoms enhanced their knowledge (67), while a telehealth-supported reporting intervention improved caregiver confidence, aligned closely with clinical assessments, and enabled early detection in community-dwelling older adults with dementia (17). A nurse-led, multicomponent home intervention significantly reduced delirium, cognitive impairment and functional decline post-discharge after adjustments (19), and proved feasible and acceptable (20). Additionally, a geriatrician-led admission avoidance hospital-at-home program reduced 1-month delirium incidence and 6-month institutionalization, demonstrating a cost-effective alternative to hospitalisation (21).

Residential care

Various interventions have been studied to prevent delirium in residential care. Multiple studies evaluated the "Stop Delirium!" Intervention, a 16-month enhanced educational programme for care home staff (35-37), which improved staff awareness, reduced prescriptions and increased cognitive assessments (36). One study demonstrated superior delirium knowledge and detection following targeted an educational

program compared to a handbook about delirium, though no differences in delirium incidence were observed (55). A study involving a 30-minute nurse visit with orientation, reminiscence, exercise and hydration reduced delirium severity, improved cognition, and lowered hospitalisation and mortality rates (47). A prevention program including a decision tree, intervention manual, toolkit and PowerPoint presentations for the healthcare participants, was proved feasible (68). Boockvar et al. adapted the Hospital Elder Life Program for long-term care, involving daily assessments by nursing staff and medication reduction, but found no significant effects on delirium or hospitalisation (49). In contrast, a pharmacist-led intervention using an automated Geriatric Risk Assessment MedGuide reduced incident delirium, hospitalisation, and mortality among new admissions (32). Doll therapy, where empathy dolls were designed for optimal interaction with patients and to arouse empathy, reduced agitation, aggression, and delirium incidence (42), while a delirium risk prediction web-app showed good feasibility and validity (69).

DISCUSSION

This scoping review aimed to synthesize evidence on the prevalence, risk factors and preventive interventions for delirium in older adults living in home or residential care settings. The review found that while delirium is a prevalent and clinically significant condition in these settings, the available evidence is limited, heterogeneous, and skewed toward feasibility rather than effectiveness of preventive interventions.

A key observation from the included studies is the substantial variation in delirium prevalence, ranging from 0.1% to 44.0% in the home setting and from 1.0% to 70.3% in residential care. This wide range likely reflects methodological differences across studies, including variation in diagnostic tools (e.g. CAM, DSM, ICD,…) and study populations. This underscores the need for standardized diagnostic approaches in future research to allow for valid comparison of findings. The higher prevalence rate in residential care compared to the home setting aligns with our expectations and previous research (2), suggesting that the increased vulnerability and complexity of health issues in these environments attributes to developing delirium. In contrast, the lower reported prevalence in the home setting may reflect underrecognition rather than true absence of delirium, potentially due to limited caregiver awareness and training, and reduced clinical monitoring. Variability in diagnostic tools and criteria across studies likely contributed to the range of reported prevalence rates, underscoring the need for standardized diagnostic approaches.

Cognitive impairment and dementia consistently emerged as the most robust and frequently studied risk factor across both settings. This aligns with hospital-based literature, where cognitive dysfunction remains a key risk factor. Interestingly, while age was frequently cited as a risk factor in hospital settings (2, 9, 70), it was found to be inconsistent and mostly not significant in residential care studies, suggesting that age per se may be less relevant than age-associated syndromes such as frailty, dependency and polypharmacy. This distinction has implications for screening strategies, which should focus on functional and cognitive vulnerability rather than chronological age alone.

Other groups of risk factors, such as comorbidities, medication use, and environmental exposures, were heterogeneously studied and often yielded mixed findings. Notably, many established hospital-based risk

factors (e.g., polypharmacy, infection, sensory impairment) (2, 9) appear underexplored in community-dwelling populations. The paucity of risk factor studies in home settings is particularly concerning, and point to a critical evidence gap.

Preventive interventions were predominantly exploratory or feasibility-focused, particularly in the home setting. Multicomponent, nurse- or geriatrician-led interventions showed promise, as well as those integrating caregiver education, cognitive monitoring, and medication review. The scarcity of robust outcome data, especially from randomised controlled trials, limits conclusions about efficacy. The contrast with the acute care literature, where prevention strategies are well-established and widely implemented (3, 5, 6), is striking. This suggests an urgent need to adapt and rigorously test the efficacy of hospital-based delirium prevention models for use in residential care and home settings. Moreover, protective factors such as environmental orientation aids (e.g. windows, lighting, radios,…) have received limited attention and merit further exploration, especially given their low cost and ease of implementation.

Limitations

This scoping review has several limitations. Firstly, despite the execution of a thorough and methodical search across numerous databases with the assistance of an information specialist, the possibility exists that relevant studies may have been overlooked due to the use of varying terminology used to describe delirium in home and residential care settings. Secondly, the heterogeneity of the study design, population characteristics, and diagnostic criteria resulted in a lack of comparability across studies. This limitation precluded the possibility of meta-analysis and thus rendered the synthesis largely descriptive. Moreover, systematic reviews were excluded from the final paper (71-73) as they provided solely narrative summaries without new results or meta-analyses. Nevertheless, the primary studies identified through the aforementioned reviews were incorporated into the analysis.

CONCLUSION

This scoping review highlights substantial variability in the reported prevalence, risk factors and preventive interventions of delirium among older adults living in home or residential care settings, with markedly less evidence available for the home setting. The prevalence varied widely, explained by the variability of diagnostic tools for delirium that were used. Cognitive impairment or dementia consistently emerged as the strongest and most frequently studied risk factor. The existing evidence is weighted towards feasibility studies, with a lack of efficacy-focused trials evaluating preventive interventions for delirium. Given the large population living in home and residential care settings, there is an urgent need for high-quality, context-sensitive research, with focus on standardized diagnostic tools for delirium and trials focusing on the efficacy of preventive interventions, for example with randomized controlled trials.

DECLARATIONS

Ethics approval and consent to participate: Not applicable

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Table 1: Basic characteristics of included studies, home setting

Author (publication year)	Study period	Purpose	Country	Study design	Sample size	Mean age	Gender (female)	Diagnostic criteria for delirium	P	I	RF	PI
Lerner, A.J. (1997)	N/S	Occurrence and significance of delirium in Alzheimer disease	USA	Retrospective cohort study	199	75.9 (SD 7.3)	32.5% *	DSM-III-R		√	√	
Sandberg, O. (1998)	N/S	Prevalence of dementia, delirium and psychiatric symptoms	Sweden	Cross-sectional study	717	83.7	66%	DSM-III-R	√			
Fick, D. (2005)	1998	Examine the 3-year occurrence, healthcare utilization, and costs associated with DSD	USA	Retrospective cross-sectional study	76688	DSD 76. Delirium only 76. Dementia only 74. Control 74.	60%	ICD-9 CM	√			
Andrew, M. K. (2006)	1991	Prevalence and 5-year outcomes of delirium	Canada	Secondary analysis	2914	86.8 (SD 6.6)	48%	DSM-III-R, nurse and physician assessments, neuropsychological evaluation	√			
Vilalta-Franch, J. (2009)	1990	Prevalence of delirium, 5-year survival rate of delirium	Spain	Case and control and survival study	1460	76.9 (SD 5.49)	60%	DSM-IV	√			
Bull, M. J. (2010)	N/S	Assess delirium prevalence and its impact on caregivers' mental health and coping	USA	Descriptive, cross-sectional design	30	73.5 ± (SD 6.2)	74%	CAM-ICU	√			
Eriksson, I. (2011)	2005-2007	Investigate association of urinary tract infection and delirium	Sweden, Finland	Observational study	504	90.6 (SD 4.7)	100%	CAM			√	
Lixouriotis, C. (2011)	2008-2009	Characteristics and outcomes of delirium	Greece	Retrospective chart review	785	76.3	N/S	ICD-10	√			
Keyser, S. E. (2012)	N/S	Teach families of older adults about delirium	Canada	Survey	Knowledge test: 11. Education: 25. Interview: 5	/	/	/				√
Steis, M. R. (2012)	N/S	Test family caregivers' electronic reporting of delirium in dementia patients at home.	USA	Prospective, exploratory feasibility design	13	80.0 (SD 7.0)	69%	CAM	√			√
Mathillas, J. (2013)	2005-2007	30-day prevalence of delirium	North Sweden and Finland	Cross-sectional study	708	90.3 (SD 4.6)	71%	DSM-IV	√			
Verloo, H. (2015)	2012	Assess nursing intervention's impact on delirium and impairment in older people living at home.	Switserland	Randomized clinical pilot trial using a before/after design	103	IG: 82.92 (SD 6.73); CG: 83.50 (SD 7.62)	IG: 64.6%, CG: 65.4%	CAM				√
Verloo, H. (2016)[1]	2012	Test post-discharge delirium intervention for older adults.	Switserland	Randomized clinical pilot trial with a before/after design	103	IG: 82.92 (SD 6.73); CG: 83.50 (SD 7.62)	IG: 64.6%, CG: 65.4%	CAM				√
Tremolizzo, L. (2021)	N/S	Prevalence of delirium	Italy	Observational study	102	84.9 (SD 7.9) (50-97y)	68%	4-AT	√			
Shepperd, S. (2022)	N/S	Evaluate geriatrician-led hospital-at-home: effectiveness, cost, and patient experiences.	United Kingdom	A multisite, randomised, open trial of comprehensive geriatric assessment hospital at home,	1055	83.3 (SD 7.0)	61%	CAM	√			√

*[1]: Same dataset as study by Verloo (2015), *: of patients with delirium, P: prevalence, I: incidence, RF: risk factor, PI: preventive intervention, N/S: not specified, USA: United States of America, DSM-III-R: Diagnostic and Statistical Manual of Mental Disorders (Third Edition), revised, DSD: delirium superimposed on dementia, ICD-9-CM: International Classification of Diseases, 9th Revision, Clinical Modification, SD: standard deviation, DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (Fourth*

Table 2: Basic characteristics of included studies, residential care setting

Author (publication year)	Study period	Purpose	Country	Study design	Sample size	Mean age	Gender (female)	Diagnostic criteria	P	I	RF	PI
Sandberg, O. (1998)	N/S	Prevalence of dementia, delirium and psychiatric symptoms	Sweden	Cross-sectional study	717	83.7	66%	DSM-III-R	√			
Flacker, J.M. (2000)	1996	Relationship between plasma phenylalanine to large neutral amino acid ratio and delirium	USA	Prospective cohort study	21	87.95 (SD 0.99)	76%	CAM			√	
Cacchione, P.Z. (2002)	N/S	Reliability and validity of CAC-A, CAC-B, NEECHAM, VAS-AC	USA	N/S	74	82 (range 66-95y)	82%	DSM-IV criteria	√			
Cacchione, P.Z. (2003)	N/S	Investigate the risk relationship between sensory impairment and the development of acute confusion	USA	Longitudinal study	114	87.3	75.4%	NEECHAM and CAM			√	
Cacchione, P.Z. (2003)	N/S	Risk factors, behavior subtypes, causes and 3-month outcomes associated with acute confusion	USA	Prospective, cross-sectional study	74	82	83%	DSM-IV criteria, NEECHAM, CAM			√	
Pitkala, K.H. (2005)	N/S	Investigate the prognosis of delirium and clarify whether delirium is just a marker of the underlying severe disease	Finland	Observational longitudinal study	425	N/S, always 70+	80%	DSM-IV	√			
Voyer, P. (2009)	N/S	Evaluate the impact of using different diagnostic criteria on prevalence rates of delirium and SDS	Canada	Prospective cohort study	155	86.3 (SD 6.9)	74%	DSM-III, DSM-III-R, DSM-IV and CAM	√			
Voyer, P. (2009)[2]	N/S	Identify predisposing factors for delirium and their impact on the likelihood of having delirium	Canada	Cross-sectional study	155	86.3 (SD 6.9)	73.5%	CAM	√		√	
Von Gunten, A. (2010)	1997-2007	Prevalence of delirium and how previous place of residence predicts delirium	Switserland	Cross-sectional study	11745	N/S, age groups depending on their previous residence	N/S, depending on their previous residence	RAI-MDS, CAM-NH	√		√	
Featherstone, I. (2010)	N/S	Design educational package to improve delirium care	United Kingdom	Descriptive, educational research	N/S	N/S	N/S	N/S				√
Voyer, P. (2010)[2]	N/S	The interrelationship of predisposing and precipitating factors through the lens of the Multifactorial Model of Delirium	Canada	Secondary analysis of cross-sectional study	155	86.3 (SD 6.9)	73.5%	CAM	√		√	
Hölttä, E. (2011)	1999-2000	Prognosis and frequency of overlapping of delirium with NPS among patients with dementia	Finland	Observational longitudinal study	425, focusing on 255 dementia patients	86.4	85%	DSM-IV	√			

Lapane, K. L. (2011)	2003-2004	Assess if a clinical monitoring tool reduces delirium, falls, drug-related hospitalizations, and deaths	USA	Randomized cluster trial	2003: 3202; 2004: 3321	N/S, All 65+	2003: IG: 72.3%, CG: 68.2%. 2004: IG: 73.9%, CG: 73.9%	CAM-NH				√
McCusker, J. (2011)	2005-2008	Prevalence and 6-month incidence of delirium	Canada	Prospective observational cohort study	279	N/S, All 65+	56%	CAM, DI	√	√		
Siddiqi, N. (2011)	2011	To explore the feasibility of preventing delirium in care homes for older people	United Kingdom	Mixed-methods feasibility study	286	N/S	N/S	N/S				√
Voyer, P. (2011)[2]	N/S	Increase knowledge about precipitating factors of delirium	Canada	Cross-sectional study	155	86.3 (SD 6.9)	73.5%	CAM	√		√	
Cole, M.G. (2012)[1]	2005-2008	Describe symptoms of delirium before and after episodes of delirium and by dementia status	Canada	Secondary analysis for a prospective cohort	279	87.4 (SD 6.3) *	61.0% *	CAM		√		
Boorsma, M. (2012)	2005-2010	Prevalence, incidence and risk factors of delirium	The Netherlands	Naturalistic cohort study	2193	N/S, 43.9% is 85+	71.7%	CAM-NH	√	√	√	
Voyer, P. (2012)[1]	2006-2009	Identify clinical changes in 2-week period prior to the onset of delirium	Canada	Case-control study with data of a prospective observational study	279, in the end 85 cases matched with 508 controls	85+years: 63.8% controls, 64.7% cases	controls 70.1%, cases 68.4%	CAM	√		√	
Cole, M.G. (2012)[1]	N/S	Determine the course of delirium	Canada	Secondary analysis on prospective observational cohort study	279	87.4 *	61% *	CAM and DI	√	√		
McCusker, J. (2012)[1]	N/S	Develop a delirium risk screening tool for LTC	Canada	Prospective, observational cohort study	280	85.4	56.4%	CAM			√	
DeCrane, S.K. (2012)	N/S	Examine falls as an 12-month outcome for delirium and delirium type	USA	Longitudinal study	320	Delirium 89.95, non-cases 85.5	77.8%	CAM			√	
Mathillas, J. (2013)	2005-2007	30-day prevalence of delirium	North Sweden and Finland	Cross-sectional study	708	90.3 (SD 4.6)	71%	DSM-IV	√			
Cole, M.G. (2013)[1]	2005-2008	Determine if the presence of 1 or more CAM core symptoms of delirium predicts incident delirium	Canada	Secondary analysis for a prospective cohort	273	N/S: 65-84: 44.7%, 85+: 55.3%	N/S	CAM		√	√	
Landi, F. (2014)	2005	Relationship between anticholinergic drugs and negative outcomes	Italy	Observational, multicenter, prospective 1-year cohort study	1490	83.56 (range: 65.1-106.4)	71.5%	CAM-NH			√	
Voyer, P. (2014)	N/S	Assess a new delirium prevention program for cognitively impaired LTC residents	Canada	Feasibility and acceptability study	95 health care workers	Depending on job function: 40.2-50.2	Depending on job function: 75%-100%	N/S				√
McCusker, J. (2014)[1]	2005-2009	6-month outcomes of co-occuring delirium, depression and dementia	Canada	Prospective observational cohort study	274	N/S, all 65+	56%	CAM	√			
Hölttä, E.H. (2015)	1999-2000	Investigate psychotic symptoms among patients with dementia or with DSD	Finland	Observational cohort study	255	no delirium or psychotic symptoms: 85.6 ± 0.6, psychotic symptoms but no delirium 86.6 ± 0.8, delirium 87.6 ± 0.8	no delirium or psychotic symptoms: 87.8%, psychotic symptoms but no delirium 87.8%, delirium 78.8%	DSM-IV	√			

Siddiqi, N. (2016)	N/S	Address key aspects of the Pitstop trial design for the particular circumstances of care homes	United Kingdom	cluster randomized feasibility study with an embedded process evaluation	215	83.9 (SD 8.1)	69.3%, 95% CI: ± 6.2	CAM and Delirium Rating Scale-Revised-98	√	√		√
Boockvar, K. S. (2017)	N/S	Assess new strategy to reduce delirium in acutely ill NH patients.	N/S	Retrospective observational study	143	82	65%	CAM				√
Ciampi, A. (2017)[1]	N/S	Describe the longitudinal patterns of severity scores of delirium	Canada	Secondary analysis on prospective observational cohort study	280	80.8% was 80+	62%	CAM and DI	√	√		
Morichi, V. (2018)	2015	Point prevalence of delirium	Italy	Cross-sectional study	1454	84.4 (SD 7.4)	70.2%	4-AT	√		√	
Teale, E.A. (2018)	2015-2016	Examine feasibility, inter-rater reliability, and DTA of the 25-item DOSS and compare this to the CAM	United Kingdom	Prospective observational cohort study	216	84.9 (SD 7.9)	61%	DOSS and CAM	√	√		
Bo, M (2019)	2015	Evaluate the association of indwelling urinary catheter with delirium	Italy	Cohort study	NH: 1454; Hospital: 1867	NH: 84.4 ± 7.4; Hospital: 82.0 ± 7.5	NH: 70%; Hospital: 58%	4-AT			√	
Pérez-Ros, P. (2019)	2015-2016	Predisposing and triggering factors of delirium, and develop a predictive model	Spain	Cohort trial-nested case-control study	443	85.8 (SD 6.7)	78.3%	CAM and/or DSM-IV			√	
Sepúlveda E. (2019)	2017	Evaluate the association of different clinical aspects with delirium in a NH.	Spain	Cross-sectional, one-day, prospective study	131	78	44%	DSM-V			√	
Ciampi, A. (2019)[1]	N/S	Analyse the multivariate DI	Canada	Secondary analysis on prospective observational cohort study	276	77.2% was 80+	57%	CAM and DI	√	√		
Sabbe, K. (2021)	2018	Investigate (point) prevalence and risk factors of delirium	Belgium	Multisite cross-sectional study	338	84.7 (SD 8.0)	67.5%	DOSS	√		√	
Santagata, F. (2021)	2019	Assess doll therapy's impact on symptoms, caregiver burden, and delirium rates.	Italy	Randomized controlled trial	52	86.5 (SD 6.47)	IG: 80%, CG: 86%	CAM	√			√
Boockvar, K. S. (2021)	N/S	Test the efficacy of HELP adapted to LTC (HELP-LTC)	N/S	Cluster randomized controlled trial	219	81.7 (SD 1.1)	65%	CAM, CAM-s				√
Moon, K. J. (2022)	2016-2020	Create and test a web app for delirium prevention in LTC	South Korea	Pilot testing of web app	32	45.3 (SD 8.3)	100%	N/S				√
Skretteberg, W.H. (2022)	2018	Assess the frequency and duration of delirium and its risk factors during any acute event	Norway	Prospective 2-month follow-up study	145	84.2 (SD 9.7)	69.7%	CAM	√		√	
Jeong, E. (2022)	2019	Create and test comprehensive delirium education for NH staff	South Korea	Randomized controlled trial	74	56.79 (SD 6.66)	IG: 98% CG: 100%	Nu-DESC, DSM-V				√
Son, C. S. (2022)	2020	Create explainable AI models for three psychomotor behaviors of delirium	Korea	Prospective study	33	72.6 (SD 13.1)	46%	CAM-s			√	
Urfer Dettwiler, P. (2022)	N/S	Prevalence of delirium with the DSM-V. Investigate the feasibility I-AGeD and compare I-AGeD with DSM-V	Switserland	Cross-sectional single-center pilot study	85	85.5 (SD 7.6)	65%	DSM-V and I-AGeD	√			

Liu, S.H. (2023)	2011-2016	Compare the rates of delirium onset adding SNRIs or NSAIDs to their short-acting opioid regimen	USA	Retrospective cohort study	5350 with SNRI, 530 with NSAID	N/S, all 65+	N/S	CAM or ICD-10		√		

*[1]: Secondary analysis of primary study by McCusker J. (2011), [2]: Secondary analysis of primary study by Voyer P. (2009), [3]: Same dataset as study by Verloo (2015), *: of patients with delirium, P: prevalence, I: incidence, RF: risk factor, PI: preventive intervention, N/S: not specified, DSM-III: Diagnostic and Statistical Manual of Mental Disorders (Third Edition), DSM-III-R: revised, DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition), DSM-V: Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition), USA: United States of America, CAM: Confusion Assessment Method, CAC-A: Clinical Assessment of Confusion-A, CAC-B: Clinical Assessment of Confusion-B, NEECHAM: Neelon/Champagne Confusion Scale, VAS-AC: Visual Analog Scale for Acute Confusion, SDS: Subsyndromal Delirium, SD: standard deviation, RAI-MDS: Resident Assessment Instrument-Minimum Data Set, NPS: neuropsychiatric symptoms, IG: intervention group, CG: control group, CAM-NH: CAM for the Nursing Home, DI: Delirium Index, LTC: long term care, DSD: delirium superimposed on dementia, NH: nursing home, 4-AT: Four A's test, DTA: diagnostic test accuracy, DOSS: Delirium Observation Screening Scale, HELP: Hospital Elder Life Program, HELP-LTC: Hospital Elder Life Program in long term care, CAM-s: CAM delirium severity score, Nu-DESC: Nursing Delirium Screening Scale , AI: artificial intelligence, I-AGeD: Informant Assessment of Geriatric Delirium, SNRI: Serotonin and Norepinephrine Reuptake Inhibitor, NSAID: Non-steroidal anti-inflammatory drug, ICD-10: International Statistical Classification of Diseases and Related Health Problems 10th Revision*

Table 3: Prevalence and incidence of delirium – home setting

Author	Diagnostic criteria	Prevalence				Incidence	
		Overall	Note	Subgroup	Subgroup result	Overall	Note
Lerner, A.J. (1997)	DSM-III-R					21.6%	/
Sandberg, O. (1998)[3]	DSM-III-R	43.9%	Delirium without dementia	Emergency hospital	45.9%		
				NH	57.9%		
				Old people's home	35.2%		
				Home medical care	34.5%		
		18.8%	Delirium superimposed on dementia	Emergency hospital	11.5%		
				NH	42.1%		
				Old people's home	8.2%		
				Home medical care	9.9%		
Fick, D. (2005)	ICD-9 CM	0.1%	Delirium without dementia	Dementia alone	9.6%		
				DSD	1.2%		
Andrew, M. K. (1991)	DSM-III-R	<0.5%	No difference in prevalence between community-dwellers and LTC	Baseline	<0.5%		
				After 5 years	<0.5%		
Vilalta-Franch, J. (2009)	DSM-IV	0.96%	/	Delirium alone	0.15%		
				DSD	7.95%		
Bull, M. J. (2010)	CAM-ICU	6.7%	/				
Lixouriotis, C. (2011)	ICD-10					1.1%	1 year FU
Steis, M. R. (2012)	CAM	23%	7 confirmed episodes in 3 participants (total 13 participants)				
Mathillas, J. (2013)	DSM-IV	22%	/	85-90 years old	17%		
				90-95 years old	21%		
				≥95 years old	39%		
				Male	19%		
				Female	27%		
				Patients without dementia	5%		
				Patients with dementia	52%		
				Living independently	8%		
				Living in institutions	49%		
Tremolizzo, L. (2021)	4-AT	44%	/	Delirium alone	19.4%		
				DSD	91.4%		
				Delirium and BZD use	71.7%		
				Delirium without BZD use	21.4%		
Shepperd, S. (2022)	CAM			Hospital at home day 0	6.7%		
				Hospital setting day 0	7.0%		
				Hospital at home day 3	3.9%		
				Hospital setting day 3	3.5%		
				Hospital at home day 5	2.7%		
				Hospital setting day 5	3.0%		
				Hospital at home at 1 month	1.7%		
				Hospital setting at 1 month	4.4%		

[1]: Secondary analysis of primary study by McCusker J. (2011), [2]: Secondary analysis of primary study by Voyer P. (2009), DSM-III: Diagnostic and Statistical Manual of Mental Disorders (Third Edition), DSM-III-R: revised, DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition), NH: nursing home, ICD-9-CM: International Classification of Diseases, 9th Revision, Clinical Modification, DSD: delirium superimposed on dementia, LTC: long term care, CAM: Confusion Assessment Method, CAM-ICU: CAM for the Intensive Care Unit, ICD-10: International Statistical Classification of Diseases and Related Health Problems 10th Revision, FU: follow-up, 4-AT: Four A's test, BZD: benzodiazepine

Table 4: Prevalence and incidence of delirium – residential care setting

Author	Diagnostic criteria	Prevalence				Incidence			
		Overall	Note	Subgroup	Subgroup result	Overall	Note	Subgroup	Subgroup result
Sandberg, O. (1998)[3]	DSM-III-R	43.9%	Delirium without demetia	Emergency hospital	45.9%				
				NH	57.9%				
				Old people's home	35.2%				
				Home medical care	34.5%				
		18.8%	Delirium superimposed on dementia	Emergency hospital	11.5%				
				NH	42.1%				
				Old people's home	8.2%				
				Home medical care	9.9%				
Cacchione, P.Z.(2002)[3]	DSM-IV	39.2%	/						
Pitkala, K.H. (2005)[3]	DSM-IV	24.9%	/	Acute geriatric ward	32.6%				
				NH	15.9%				
Voyer, P. (2009)	DSM-III and DSM-III-R and DSM-IV and CAM	23.9%	Patients with dementia	DSM-III	26.5%				
	DSM-III or DSM-III-R or DSM-IV or CAM	70.3%	Patients with dementia	DSM-III-R	41.3%				
				DSM-IV	29.0%				
				CAM definite delirium	45.8%				
				CAM probable delirium	70.3%				
Voyer, P. (2009)[2]	CAM	70.3%	Patients with dementia						
Von Gunten, A. (2010)	RAI-MDS, NHCAM	6.5%	Full delirium	Coming from home	6.4%				
		39.7%	Sub-syndromal delirium	Coming from nursing home	5.9%				
				Coming from acute care	6.6%				
				Coming from mental health	7.7%				
				Coming from rehab unit	6.3%				
Voyer, P. (2010)[2]	CAM	70.3%	Patients with dementia	CAM definite delirium	45.8%				
				CAM probable delirium	24.5%				
				Low risk group for delirium	32.0%				
				Moderate risk group for delirium	78.4%				
				High risk group for delirium	98.1%				
				Low precipitating factors	37.9%				
				Moderate precipitating factors	67.2%				
				High precipitating factors	86.8%				
Hölttä, E. (2011)	DSM-IV	2.4%	Delirium superimposed on dementia	NH residents	16%				
				Acute geriatric ward	43%				
McCusker, J. (2011)	CAM	3.4%	Cohort A (MMSE >10)			1.6/100 person-weeks of FU	Cohort A (MMSE >10)		
		33.3%	Cohort B (MMSE<10)			6.9/100 person-weeks of FU	Cohort B (MMSE<10)		
Voyer, P. (2011)[2]	CAM	70.3%	Patients with dementia						

Cole, M.G. (2012)[1]	CAM and DI					14.70%	24 weeks FU		
Cole, M.G. (2012)[1]	CAM					14.7%	6 months, 1x/week	1x delirium ≥2x delirium	10% 4.7%
Boorsma, M. (2012)	CAM-NH	8.5%		Nursing home Residential care home	8.9% 8.2%			NH Care home	20.7/100 py 14.6/100 py
Voyer, P. (2012)[1]	CAM	11%	Baseline prevalence						
Mathillas, J. (2013)	DSM-IV	22%		85-90 years old 90-95 years old ≥95 years old Male Female Patients without dementia Patients with dementia Living independently (n=393) Living in institutions	17% 21% 39% 19% 27% 5% 52% 8% 49%				
Cole, M.G. (2013)[1]	CAM					14.7%	0.77/100 personweeks		
McCusker, J. (2014)[1]	CAM	11%							
Hölttä, E.H. (2015)	DSM-IV	25.9%							
Siddiqi, N. (2016)	CAM and DRS-Revised-98	1.4%	At recruitement						
Ciampi, A. (2017)[1]	CAM and DI	10%				27.10%	24 weeks FU		
Morichi, V. (2018)	4-AT	36.8%	Point prevalence						
Teale, E.A. (2018)	DOSS and CAM	1%	Baseline assessment			0.85 episodes/100 person weeks			
Ciampi, A. (2019)[1]	CAM and DI	10.9%				29.7%	24 weeks FU		
Sabbe, K. (2021)	DOSS	14.2%							
Santagata, F. (2021)	CAM	28.8%	At day 0 for both therapy groups	Day 0 doll therapy group Day 45 doll therapy group Day 90 doll therapy group Day 0 standard therapy group Day 45 standard therapy group Day 90 standard therapy group	31% 8% 8% 27% 19% 23%				
Skretteberg, W.H. (2022)	CAM	23%							
Urfer Dettwiler, P. (2022)	DSM-V I-AGeD	5.9% 9.4%							
Liu, S.H. (2023)	CAM or ICD-10							SNRI initiators NSAID initiators	20.4/100 py 18.5/100 py

[1]: Secondary analysis of primary study by McCusker J. (2011), [2]: Secondary analysis of primary study by Voyer P. (2009), DSM-III: Diagnostic and Statistical Manual of Mental Disorders (Third Edition), DSM-III-R: revised, DSM-IV: Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition), NH: nursing home, CAM: Confusion Assessment Method, CAM-NH: CAM for the Nursing Home, RAI-MDS: Resident Assessment Instrument-Minimum Data Set, MMSE: Mini-Mental State Examination , FU: follow-up, DI: Delirium Index, , DRS-Revised-98: Delirium Rating Scale Revised-98, 4-AT: Four A's test, DOSS: Delirium Observation Screening Scale, I-AGeD: Informant Assessment of Geriatric Delirium, ICD-10: International Statistical Classification of Diseases and Related Health Problems 10th Revision, SNRI: Serotonin and Norepinephrine Reuptake Inhibitor, NSAID: Non-steroidal anti-inflammatory drug, py: person years

Figure 1 PRISMA screening flowchart

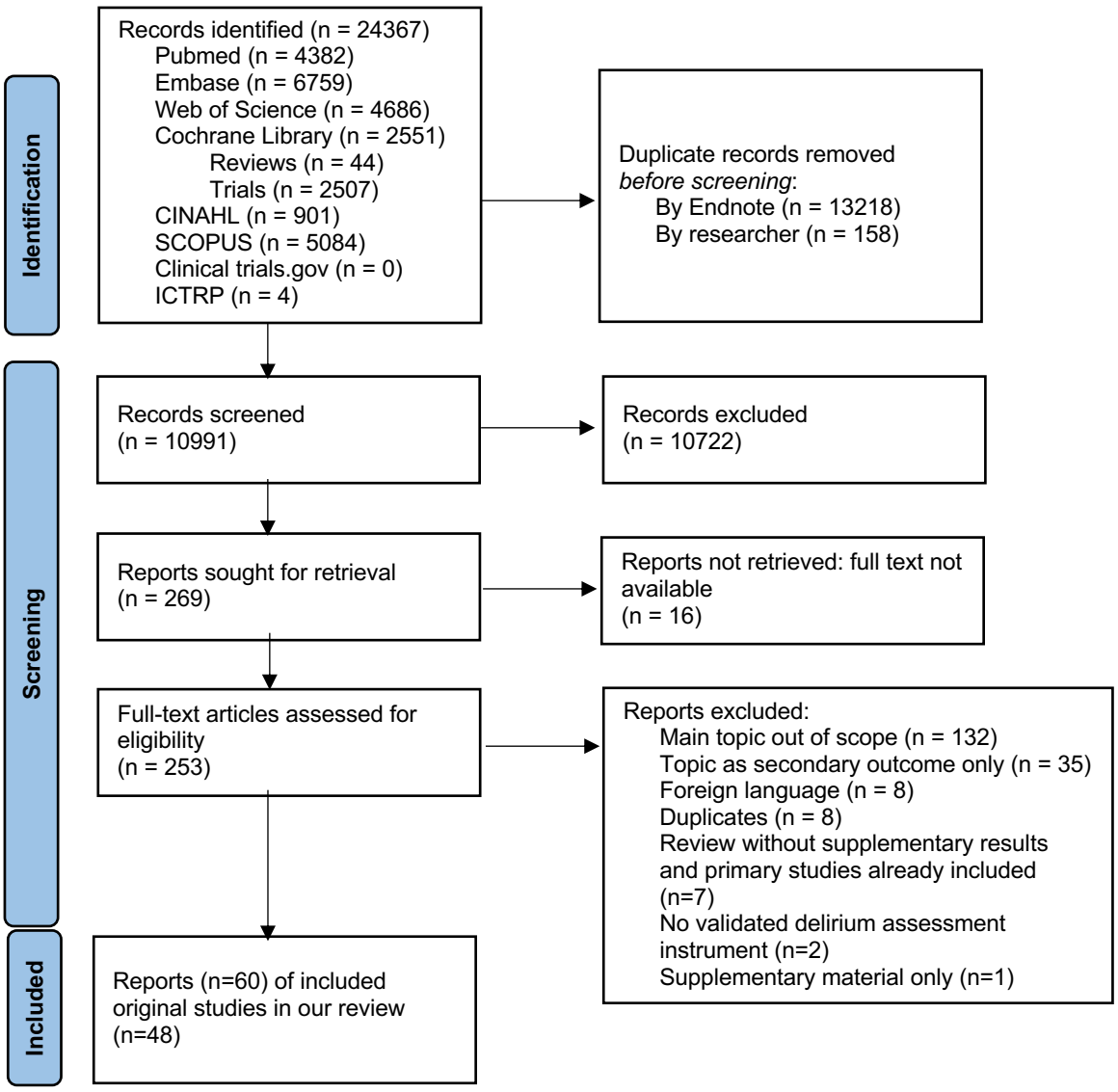
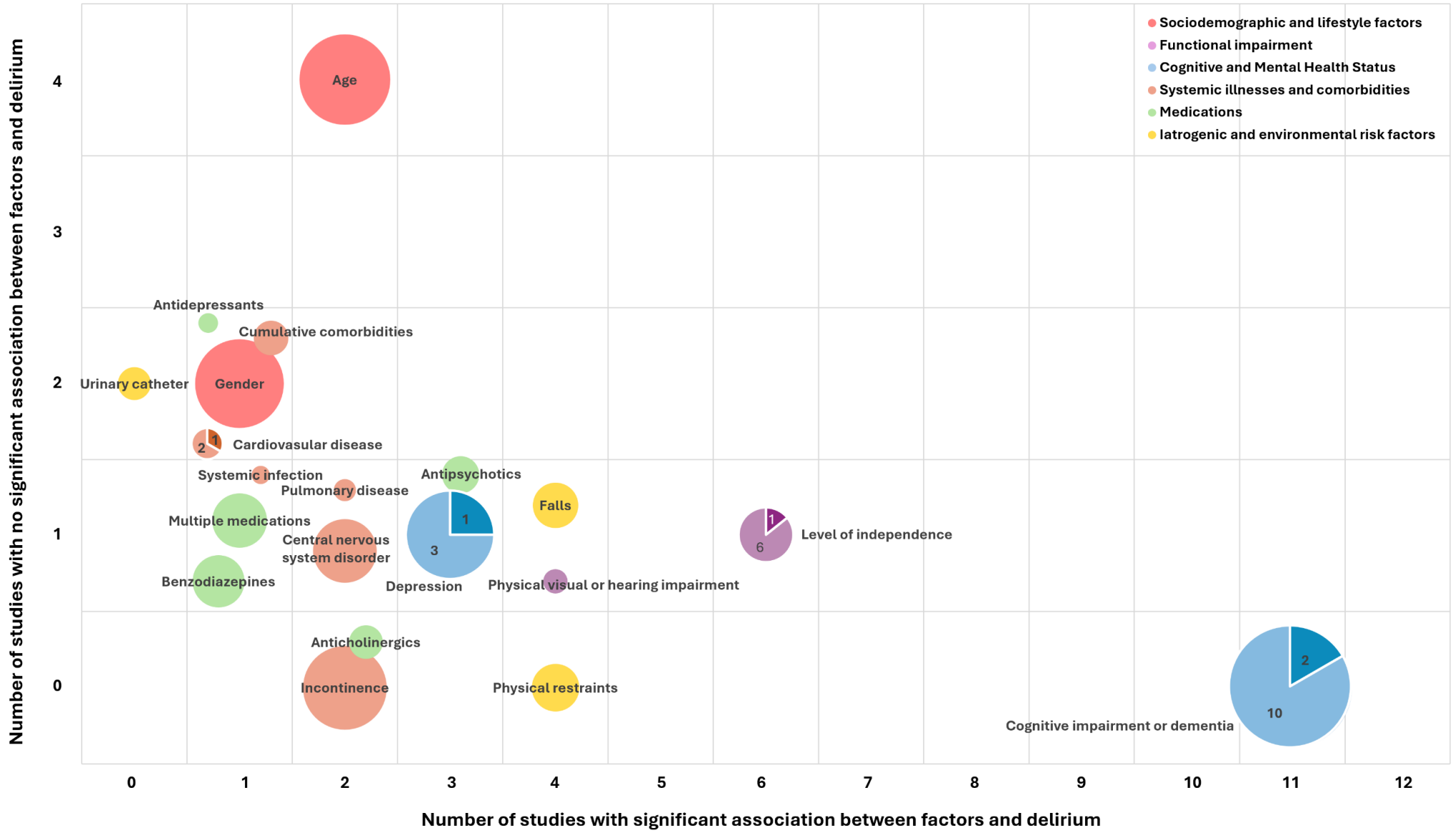


Figure 2: Risk factors for delirium.



Each bubble represents a distinct risk factor, with its size proportional to the total sample size of the studies examining it. A divided bubble signifies being investigated in different settings, with the smaller segment representing the home setting. Risk factors examined in only one study are excluded from the figure but discussed in the text.

APPENDIX 1 – Search strategy

PUBMED (via NCBI, including MEDLINE)
#1: "Delirium"[MeSH Terms] OR "delirium"[tiab] OR “delier” [tiab] OR “delire” [tiab] OR "delirious"[tiab] OR “deliria” [tiab] OR "Acute confusion"[tiab] OR "Acute brain syndrome"[tiab] OR “Acute brain disease*”[tiab] OR "Cognitive dysfunction*"[tiab] OR “cognitive deterioration*”[tiab] OR “cognitive disorder*”[tiab] OR “cognitive defect*”[tiab]
#2: ("Home Care Services"[MeSH Terms] OR "Home*"[tiab] OR "Domiciliary"[tiab] OR "Domestic"[tiab] OR “Visiting nurs*"[tiab] OR “Community Health Nurs*"[tiab] OR "House Calls"[Mesh] OR “house call*”[tiab] OR “Community living”[tiab] OR "Residential Facilities"[MeSH Terms] OR "residential”[tiab] OR “residence”[tiab] OR "Long-Term Care"[Mesh] OR "long term care"[tiab] OR “LTC”[tiab] OR "assisted living"[tiab] OR "senior housing"[tiab] OR “senior center*”[tiab] OR “senior centre*”[tiab] OR "Housing for the Elderly"[Mesh] OR “housing for the elderly”[tiab] OR “retirement center*”[tiab] OR "extended care"[tiab] OR “nursing facilit*"[tiab] OR “halfway house*"[tiab] OR "Independent Living"[Mesh] OR “independent living”[tiab] OR “independent elderly”[tiab] OR “community dwell*”[tiab] OR "General Practice"[Mesh] OR “general practi*”[tiab] OR “family practice”[tiab] OR "General Practitioners"[Mesh] OR “GP”[tiab] OR "Primary Health Care"[Mesh:NoExp] OR “primary health care”[tiab] OR “primary healthcare”[tiab] OR “primary medical care”[tiab] OR "Ambulatory Care"[Mesh] OR “ambulatory care”[tiab] OR "Outpatients"[Mesh] OR “outpatient*”[tiab] OR “out patient*”[tiab] OR “extramural care”[tiab] OR “extra mural care”[tiab] OR “nonhospitalized”[tiab] OR “non hospitalized”[tiab] OR “nonhospitalised”[tiab] OR “non hospitalised”[tiab])
#3: #1 AND #2

Embase (Embase.com)
#1: 'delirium'/exp OR ‘delirium’:ti,ab,kw OR ‘delier’:ti,ab,kw OR ‘delire’:ti,ab,kw OR ’delirious’:ti,ab,kw OR ‘deliria’:ti,ab,kw OR ‘acute confusion’/exp OR ‘acute confusion’:ti,ab,kw OR ‘acute brain syndrome’:ti,ab,kw OR ‘acute brain disease*’:ti,ab,kw OR ‘Cognitive dysfunction*’:ti,ab,kw OR ‘cognitive deterioration*’:ti,ab,kw OR ‘cognitive disorder*’:ti,ab,kw OR ‘cognitive defect*’:ti,ab,kw)
#2: 'home care'/exp OR ‘home*’:ti,ab,kw OR ‘domiciliary’:ti,ab,kw OR ‘domestic’:ti,ab,kw OR ‘visiting nurs*’:ti,ab,kw OR 'community health nurs*':ti,ab,kw OR ‘house call*’:ti,ab,kw OR ‘community living’:ti,ab,kw OR 'residential home'/exp OR ‘residential’:ti,ab,kw OR ‘residence’:ti,ab,kw OR ‘long term care’/de OR ‘long term care’:ti,ab,kw OR ‘LTC’:ti,ab,kw OR ‘assisted living’:ti,ab,kw OR ‘senior housing’:ti,ab,kw OR ‘senior center*’:ti,ab,kw OR ‘senior centre*’:ti,ab,kw OR 'home for the aged'/exp OR ‘housing for the elderly’:ti,ab,kw OR ‘geriatric home*’:ti,ab,kw OR ‘retirement center*’:ti,ab,kw OR ‘nursing home’/exp OR ‘extended care’:ti,ab,kw OR ‘nursing facilit*’:ti,ab,kw OR 'halfway house*':ti,ab,kw OR ‘independent living’/exp OR ‘independent living’:ti,ab,kw OR ‘independent elderly’:ti,ab,kw OR 'community dwelling person'/exp OR 'community dwell*':ti,ab,kw OR 'general practice'/exp OR 'general practi*':ti,ab,kw OR ‘family practice’:ti,ab,kw OR 'general practitioner'/exp OR ‘GP’:ti,ab,kw OR 'primary health care'/exp OR 'primary health care':ti,ab,kw OR ‘primary healthcare’:ti,ab,kw OR ‘primary medical care’:ti,ab,kw OR 'ambulatory care'/exp OR 'ambulatory care':ti,ab,kw OR 'outpatient'/exp OR 'outpatient*':ti,ab,kw OR ‘out patient*’:ti,ab,kw OR ‘extramural care’:ti,ab,kw OR ‘extra mural care’:ti,ab,kw OR ‘nonhospitalized’:ti,ab,kw OR ‘non hospitalized’:ti,ab,kw OR ‘nonhospitalised’:ti,ab,kw OR ‘non hospitalised’:ti,ab,kw)
#3: #1 AND #2 NOT 'conference abstract':it

WEB OF SCIENCE Core collection
Science Citation Index Expanded (SCI-EXPANDED)—1955-present
Social Sciences Citation Index (SSCI)--1956-present
Arts & Humanities Citation Index (AHCI)--1975-present
Conference Proceedings Citation Index – Science (CPCI-S)--1990-present
Conference Proceedings Citation Index – Social Science & Humanities (CPCI-SSH)--1990-present
Emerging Sources Citation Index (ESCI)--2018-presentEmerging Sources Citation Index (ESCI)--2018-present

#1: TS=(“delirium” OR “delier” OR “delire” OR “delirious” OR “deliria” OR “acute confusion” OR “acute brain syndrome” OR “acute brain disease*” OR “Cognitive dysfunction*” OR “cognitive deterioration*” OR “cognitive disorder*” OR “cognitive defect*”)
#2: TS=(“home*” OR “domiciliary” OR “domestic” OR “visiting nurs*” OR “community health nurs*” OR “house call*” OR “community living” OR “residential” OR “residence” OR “long term care” OR “LTC” OR “assisted living” OR “senior housing” OR “senior center*” OR “senior centre*” OR “housing for the elderly” OR “geriatric home*” OR “retirement center*” OR “extended care” OR “nursing facilit*” OR “halfway house*” OR “independent living” OR “independent elderly” OR “community dwell*” OR “general practi*” OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR “ambulatory care” OR “outpatient*” OR “out patient*” OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”)
#3: #1 AND #2 NOT DT=("meeting abstract")

CDSR and CENTRAL (via Cochrane Library)
#1: [mh "Delirium"]
#2: ("delirium" OR “delier” OR “delire” OR "delirious" OR “deliria” OR “acute confusion” OR “acute brain syndrome” OR ”cognitive dysfunction” OR (“acute brain” NEXT disease*) OR (“cognitive” NEXT (deterioration* OR disorder* OR defect*))):ti,ab,kw
#3: #1 OR #2
#4: [mh "Home Care Services"] OR [mh “House Calls”] OR [mh "Residential Facilities"] OR [mh "Long-Term Care"] OR [mh "Housing for the Elderly"] OR [mh "Independent Living"] OR [mh "General Practice"] OR [mh "General Practitioners"] OR [mh ^"Primary Health Care"] OR [mh “Ambulatory Care”] OR [mh "Outpatients"]
#5 : (Home* OR "Domiciliary" OR "Domestic" OR ("Visiting" NEXT nurs*) OR ("Community Health" NEXT Nurs*) OR ("house" NEXT call*) OR "Community living" OR "residential" OR "residence" OR "long term care" OR "LTC" OR "assisted living" OR "senior housing" OR ("senior" NEXT center*) OR ("senior" NEXT centre*) OR "housing for the elderly" OR ("geriatric" NEXT

home*) OR ("retirement" NEXT center*) OR "extended care" OR (“nursing” NEXT facilit*) OR (“halfway” NEXT house*) OR “independent living” OR “independent elderly” OR (“community” NEXT dwell*) OR (“general” NEXT practi*) OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR “ambulatory care” OR outpatient* OR (“out” NEXT patient*) OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”):ti,ab,kw

#6: #4 OR #5
#7: #3 AND #6

CINAHL via EBSCO
#1: ((MH "Delirium") OR TI (“delirium” OR “delier” OR “delire” OR “delirious” OR “deliria” OR ”cognitive dysfunction” OR “acute organic brain syndrome” OR “acute brain disease*” OR “cognitive deterioration*” OR “cognitive disorder*” OR “cognitive defect*”) OR AB (“delirium” OR “delier” OR “delire” OR “delirious” OR “deliria” OR ”cognitive dysfunction” OR “acute organic brain syndrome” OR “acute brain disease*” OR “cognitive deterioration*” OR “cognitive disorder*” OR “cognitive defect*”)
#2: (MH “Community Health Services”) OR (MH “Home Health Care+”) OR (MH “Community Health Nursing+”) OR (MH “Senior Centers”) OR (MH “Residential Facilities+”) OR (MH “Housing for Older Persons”) OR (MH "Long Term Care") OR (MH “Home Nursing”) OR (MH “Community Living+”) OR (MH “Family Practice”) OR (MH "Physicians, Family") OR (MH “Primary Health Care”) OR (MH “Ambulatory Care”) OR (MH “Outpatients”) OR (MH '"Nursing Home Patients)
OR TI(“home*” OR “domiciliary” OR “domestic” OR “visiting nurs*” OR “community health nurs*” OR “house call*” OR “community living” OR “residential” OR “residence” OR “long term care” OR “LTC” OR “assisted living” OR “senior housing” OR “senior center*” OR “senior centre*” OR “housing for the elderly” OR “geriatric home*” OR “retirement center*” OR “extended care” OR “nursing facilit*” OR “halfway house*” OR “independent living” OR “independent elderly” OR “community dwell*” OR “general practi*” OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR “ambulatory care” OR “outpatient*” OR “out patient*” OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”)
OR AB(“home*” OR “domiciliary” OR “domestic” OR “visiting nurs*” OR “community health nurs*” OR “house call*” OR “community living” OR “residential” OR “residence” OR “long term care” OR “LTC” OR “assisted living” OR “senior housing” OR “senior center*” OR “senior centre*” OR “housing for the elderly” OR “geriatric home*” OR “retirement center*” OR “extended care” OR “nursing facilit*” OR “halfway house*” OR “independent living” OR “independent elderly” OR “community dwell*” OR “general practi*” OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR “ambulatory care” OR “outpatient*” OR “out patient*” OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”)
#3: #1 AND #2

SCOPUS
#1: TITLE-ABS(“delirium” OR “delier” OR “delire” OR “delirious” OR “deliria” OR “acute confusion” OR “acute brain syndrome” OR “acute brain disease*” OR “Cognitive dysfunction*” OR “cognitive deterioration*” OR “cognitive disorder*” OR “cognitive defect*”) OR AUTHKEY(“delirium” OR “delier” OR “delire” OR “delirious” OR “deliria” OR “acute confusion” OR “acute brain syndrome” OR “acute brain disease*” OR “Cognitive dysfunction*” OR “cognitive deterioration*” OR “cognitive disorder*” OR “cognitive defect*”)
#2: TITLE-ABS(“home*” OR “domiciliary” OR “domestic” OR “visiting nurs*” OR “community health nurs*” OR “house call*” OR “community living” OR “residential” OR “residence” OR “long term care” OR “LTC” OR “assisted living” OR “senior housing” OR “senior center*” OR “senior centre*” OR “housing for the elderly” OR “geriatric home*” OR “retirement center*” OR “extended care” OR “nursing facilit*” OR “halfway house*” OR “independent living” OR “independent elderly” OR “community dwell*” OR “general practi*” OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR “ambulatory care” OR “outpatient*” OR “out patient*” OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”) OR AUTHKEY(“home*” OR “domiciliary” OR “domestic” OR “visiting nurs*” OR “community health nurs*” OR “house call*” OR “community living” OR “residential” OR “residence” OR “long term care” OR “LTC” OR “assisted living” OR “senior housing” OR “senior center*” OR “senior centre*” OR “housing for the elderly” OR “geriatric home*” OR “retirement center*” OR “extended care” OR “nursing facilit*” OR “halfway house*” OR “independent living” OR “independent elderly” OR “community dwell*” OR “general practi*” OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR “ambulatory care” OR “outpatient*” OR “out patient*” OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”)

#3: #1 AND # 2

Clinical trials.gov
(“delirium” OR "acute confusion") AND (“home” OR “residential“ OR “assisted living” OR “housing for the elderly” OR “nursing facility” OR “general practice” OR “GP” OR “ambulatory care” OR “outpatient”)

ICTRP – basic search
(“delirium” OR “delier” OR “delire” OR “delirious” OR “deliria” OR “acute confusion” OR “acute brain syndrome” OR “acute brain disease*” OR “Cognitive dysfunction*” OR “cognitive deterioration*” OR “cognitive disorder*” OR “cognitive defect*”)
AND (home*” OR “domicilary” OR “domestic” OR “visiting nurs*” OR “community health nurs*” OR “house call*” OR “community living” OR “residential” OR “residence” OR “long term care” OR “LTC” OR “assisted living” OR “senior housing” OR “senior center*” OR “senior centre*” OR “housing for the elderly” OR “geriatric home*” OR “retirement center*” OR “extended care” OR “nursing facilit*” OR “halfway house*” OR “independent living” OR “independent elderly” OR “community dwell*” OR “general practi*” OR “family practice” OR “GP” OR “primary health care” OR “primary healthcare” OR “primary medical care” OR

“ambulatory care” OR “outpatient*” OR “out patient*” OR “extramural care” OR “extra mural care” OR “nonhospitalized” OR “non hospitalized” OR “nonhospitalised” OR “non hospitalised”)