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Barriers and facilitators to implementing strategies for reducing inappropriate antipsychotic use in long-term care: a scoping review

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Abstract

Background Inappropriate use of antipsychotics negatively affects the quality of life of residents in long-term care (LTC). Despite efforts to reduce inappropriate antipsychotic use, understanding of how to implement antipsychotic reduction strategies remains limited.

Objective This scoping review explores: (1) the types of effective non-pharmacological strategies used to reduce antipsychotic use in LTC, (2) barriers to their implementation, and (3) facilitators supporting their implementation.

Methodology Following the guidelines of the Joanna Briggs Institute, we synthesize existing evidence. A three-step search strategy was conducted across databases for publications from January 2014 to September 2024. Data extraction was thematically analyzed and subsequently compared with the Consolidated Framework for Implementation Research (CFIR) for further insights. The review team comprised diverse stakeholders, including patient and family partners, and healthcare providers.

Findings The review identified three main types of strategies with positive outcomes: person-centred care and environmental adaptation, medication review and monitoring, and regulatory measures, with education and training cutting across these strategies. Key implementation barriers included staff and family resistance, poor team coordination and communication, and challenges with staffing and training, which could be addressed by related facilitators: cultural shifts, a cohesive team approach, and improvements to staffing and training. Beyond those addressing specific barriers, additional facilitators included increased accountability and the use of multifaceted approaches.

Conclusion and Implications Findings underscore the need for comprehensive, integrated approaches that combine clinical, organizational, and educational strategies to overcome implementation challenges. Future initiatives should prioritize team-based coordination and engagement from staff, families, and leadership.

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Introduction

Antipsychotics are medications used to treat psychosis-related conditions [1]. Long-term care (LTC) refers to facilities that offer round-the-clock personal care for individuals with complex needs who cannot live independently at ho

me [2]. Appropriate use of antipsychotics in LTC should be limited to residents with a diagnosed psychotic disorder. However, the inappropriate use of antipsychotics—prescribing them to residents without a psychosis diagnosis—has become an increasing concern in LTC settings worldwide [3, 4]. Antipsychotics are often used to manage behavioural and psychological symptoms of dementia in LTC residents without a psychosis diagnosis [5–8]. In Canada, the national benchmark of inappropriate use of antipsychotics recommended by the expert panel of the Canada Drug Agency [9] is 15% or less. This benchmark indicates that no more than 15% of long-term care residents should be prescribed antipsychotics without a diagnosis of psychosis. It was established through expert consensus, aiming to balance residents' quality of life (i.e., minimizing inappropriate antipsychotic use) with what is realistically achievable given available resources in long-term care. The benchmark also reflects historical rates of inappropriate antipsychotic use across facilities and is risk-adjusted for resident characteristics (e.g., age, cognitive status) and facility factors (e.g., staffing and resource levels). However, while the percentage of residents receiving inappropriate antipsychotics had decreased from 27.2% in 2014–2015 to 20.2% in 2019–2020, it rose since the COVID-19 pandemic to 24.5% in 2023–2024 [10]. Similar to Canada, in the United States, about 20% of residents in nursing homes took antipsychotics without a psychosis diagnosis 11. In Europe, a study comparing eight countries (Estonia, Finland, France, Germany, the Netherlands, Spain, Sweden, and England) on the use of antipsychotics in LTC with recently admitted residents showed a mixed picture, from 12% in Sweden to 54% in Spain, with an average of 37.4% [12].

The inappropriate use of antipsychotics in LTC has negative impacts on the well-being and quality of life of a person, such as cognitive decline, increased mortality risk and increased risk of falls and hip fractures [13]. While antipsychotics are often used as a short-term solution to manage the behavioural symptoms of dementia in LTC residents, a longitudinal study by Leme et al. [14] showed that they indeed worsen behavioural symptoms in the long run. Considering the prevalent and increasing inappropriate use of antipsychotics in LTC and the negative impacts of this on residents, there is a need to address the problem.

Emerging literature has highlighted several non-pharmacological strategies to reduce the use of antipsychotics in LTC, including person-centred care and environmental modifications [15, 16], staff training and education [17, 18] (e.g., to increase staff's ability and confidence to handle residents' behaviours without using antipsychotics) [19], regular medication reviews [20, 21], and a combination of these strategies [22, 23]. Most of this literature focuses on the strategies, their effectiveness, and outcomes [24–26]. Meanwhile, a small body of literature on their implementation is growing. A systematic review by Raza et al. [27] examined 14 quantitative studies on the views of staff on the use of antipsychotics with residents with dementia in care homes. These studies mentioned the barriers to deprescription, that is, reducing or stopping the use of antipsychotic medication, including a lack of education for staff, insufficient time and resources, and inadequate medication reviews. However, it excluded qualitative and mixed-method studies and did not include insights from other stakeholders such as family members or residents. In addition, the systematic review only covered literature up to July 2021. A more comprehensive and updated review is needed to capture recent developments and broader perspectives.

This review aims to understand this small but growing body of literature on the implementation of antipsychotic reduction strategies in LTC. We focus on three review questions: (1) What effective non-pharmacological strategies to reduce the inappropriate use of antipsychotics exist in LTC? (2) What are the barriers to implementing these strategies? (3) What are the facilitators? Additionally, we adopted the Consolidated Framework for Implementation Research (CFIR) [28] to guide our understanding of the findings further.

Theoretical framework

We referred to the Consolidated Framework for Implementation Research (CFIR) to gain a deeper understanding of the findings. Given that this scoping review investigated the implementation of antipsychotic reduction strategies, we considered the CFIR, an implementation science framework, to be a helpful fit. The CFIR provides a structured approach to identifying and analyzing contextual factors that affect the implementation of interventions within clinical and organizational settings [29]. Damschroder et al. [30] developed CFIR in 2009 by synthesizing constructs from 19 existing implementation theories and frameworks. Our review draws on this

most recent version [28], updated in 2022 to reflect new research and user feedback [29, 31].

CFIR consists of five domains: "innovation, inner setting, outer setting, individuals, and implementation process," each encompassing multiple constructs. Altogether, the framework includes 48 constructs [32]. The "innovation" domain focuses on the intervention being implemented [32]. This domain includes the constructs of "innovation source, innovation evidence-base, innovation relative advantage, innovation adaptability, innovation trialability, innovation complexity, innovation design, and innovation cost" [32]. The "inner setting" domain focuses on the environment where the intervention is implemented [32]. It includes the following constructs: "structural characteristics, relational connections, communications, culture, tension for change, compatibility, relative priority, incentive systems, mission alignment, available resources, and access to knowledge and information" [32]. The "outer setting" domain considers the broader context in which the "inner setting" is situated [32]. Constructs within this domain include "critical incidents, local attitudes, local conditions, partnerships and connections, policies and laws, financing, and external pressure" [32]. The "individuals" domain examines the people involved in the implementation process [32]. This includes a range of constructs: "high-level leaders, midlevel leaders, opinion leaders, implementation facilitators, implementation leads, implementation team members, other implementation support, innovation deliverers, and innovation recipients" [32]. The "implementation process" domain focuses on the actions employed to carry out the innovation [32]. Key constructs within this domain include "teaming, assessing needs, assessing context, planning, tailoring strategies, engaging, doing, reflecting and evaluating, and adapting" [32].

Methodology

We selected the scoping review as a methodology because there is relatively limited literature on the implementation of antipsychotic reduction, and a scoping review has the strength of mapping existing evidence in emerging fields, helping to identify key themes and gaps in the literature [33]. We adhered to the Joanna Briggs Institute [34] guidelines for conducting scoping reviews. Ethics approval was not required because the review was based exclusively on publicly available literature. A Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist is attached with submission of this scoping review.

Search strategy for literature

We followed a three-step search strategy: (1) an initial search of two databases, MEDLINE and CINAHL, to identify relevant keywords and index terms; (2) a search using these terms across multiple databases, including MEDLINE, Embase, CINAHL, PsycINFO, and Web of Science; and (3) manual screening of references from selected items. Before initiating the search, we consulted a university librarian for guidance on selecting suitable databases and refining our search strategy.

Our scoping review was guided by the following participants, context, and concepts (PCC) framework: The participants were individuals living with dementia in LTC settings; the context was LTC; and the concept was antipsychotic reduction strategies. The search equation was built around this framework (see Appendix A for the search equation). We incorporated a range of synonyms to broaden the scope of our search. For instance, in place of the term "reduce," we included alternatives such as "deprescribe," "decrease," and "cut," tailored to the selected databases and following the advice of the university librarian. The search was narrowed to English-language publications, given the language capacity of team members, from the past decade (January 2014 to September 2024), as we aimed to focus on the most recent literature.

Selection for items

Items were searched and uploaded to Covidence, an online software application which we used to support the screening phase of our scoping review. Covidence has a function to identify and remove duplicates. We then conducted two levels of screening of the remaining items. Two stages of screening are used: title and abstract screening at the first stage and full-text screening at the second stage. At both screening stages, each item was independently reviewed by two of the four research trainees (SJ, IC, MV, and KW). Any disagreements between the trainees during the two stages of screening were resolved by the researcher (LH), who made the final decision. The screening was based on the inclusion and exclusion criteria (see Table 1). The screening criteria include, for example, publication date range, study design, publication status (published/unpublished), and whether only full-text articles were considered. Given the relatively extensive literature on pharmacological interventions and the suggestions from team members with lived and clinical experiences, emphasis was added to the inclusion criteria on non-pharmacological approaches and strategies that have demonstrated effectiveness in reducing antipsychotic use. Psychosocial interventions were included under the umbrella of non-pharmacological strategies, and that they incorporate psychological elements. Our focus was on primary studies that reported

Table 1 Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Residents living with dementia	Residents with psychosis
Non-pharmacological strategies	Pharmacological strategies
Strategies to reduce antipsychotics	Strategies to reduce medication other than antipsychotics
Strategies that show effectiveness	Strategies that do not show effectiveness
LTC	Care settings outside LTC, e.g., acute care, home care
Quantitative, qualitative, and mixed-method designs	
Academic and gray literature	Study protocols and literature reviews
Publications from January 2014 to September 2024	Publications before 2014
Publications in English	Publications not in English
Published and unpublished materials	
Full-text available	Full-text not available

empirical findings on the implementation of antipsychotic reduction strategies. Systematic reviews and literature reviews were not included because they synthesize existing studies rather than provide new data, and including them could have led to duplication of evidence. Items that addressed strategies for reducing both antipsychotics and other medications were included; however, only the content related to antipsychotic reduction was extracted for analysis.

Extraction of data

The selected items were randomly assigned to the research trainees for extraction. We extracted data by category and recorded the extraction in a data extraction table (See Appendix B). The categories were "author, year, and country," "publication type," "study design/method," "participants," "antipsychotic reduction strategies," "barriers to implementation," and "facilitators to implementation or strategies to overcome barriers."

Analysis of data

We thematically analyzed the extracted data guided by Braun et al. [35]. A research trainee coded the data, organized similar codes into categories, and then grouped similar categories into themes. She presented themes to the research team, who provided feedback to refine them. Where differing interpretations of the themes emerged among team members, consensus was reached through discussion. Subsequently, the team compared the themes with CFIR to deepen our understanding of the findings.

Patient and public involvement

Our scoping review team included two patient and family partners (i.e., research team members who contributed their lived expertise of living with dementia or caring for family members with dementia), seven interdisciplinary healthcare providers and leaders from pharmacy, medicine, nursing, and social work, two academic researchers and five research trainees. We believe that this diversity of knowledge and experience enhanced the quality of the scoping review, particularly in terms of the relevance of the data analysis to real-world applications and improved its credibility.

Despite a small body of literature, there is an observable and increasing trend involving people with lived and/or clinical experiences in literature reviews [36, 37]. Our project may contribute by showing how this could be done. These team members, who may be less familiar with conducting a scoping review, could still contribute by sharing what they would like to see in the scoping review and what they found most helpful. Researchers and research trainees incorporated their feedback into the scoping review accordingly. For example, team members, including patient and family partners, healthcare providers, and managers/leaders, remarked during team meetings that they were interested in learning more about implementing non-pharmacological strategies, as they already had extensive experience implementing pharmacological strategies. Considering that there was relatively ample literature on pharmacological strategies, we included "non-pharmacological" strategies as an inclusion criterion. Another example was that team members who were healthcare leaders/managers would only be interested in strategies that showed effectiveness in reducing antipsychotics. Therefore, we included strategies that showed "effectiveness" as an inclusion criterion during screening.

Findings

Results of the screening process

A total of 1,962 items were initially searched in databases and uploaded to Covidence. 1,274 items were remaining after removing 688 duplicates. During the first stage of title and abstract screening, 985 items were removed for relevance, leaving 289 for full-text screening. In the second stage, 261 items were removed for reasons such as the absence of non-pharmacological strategies or for not being in LTC, leaving 28 eligible items. Two additional items were identified during manual screening of the reference lists in the 28 items, bringing the final number of included items to 30. The results of the screening process were documented by a PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram [38] (See Fig. 1).

Overview of included studies

Among the 30 selected items, the majority were conducted in the United States ($n = 19$), followed by Australia ($n = 2$), the United Kingdom ($n = 2$), Canada ($n = 2$), and

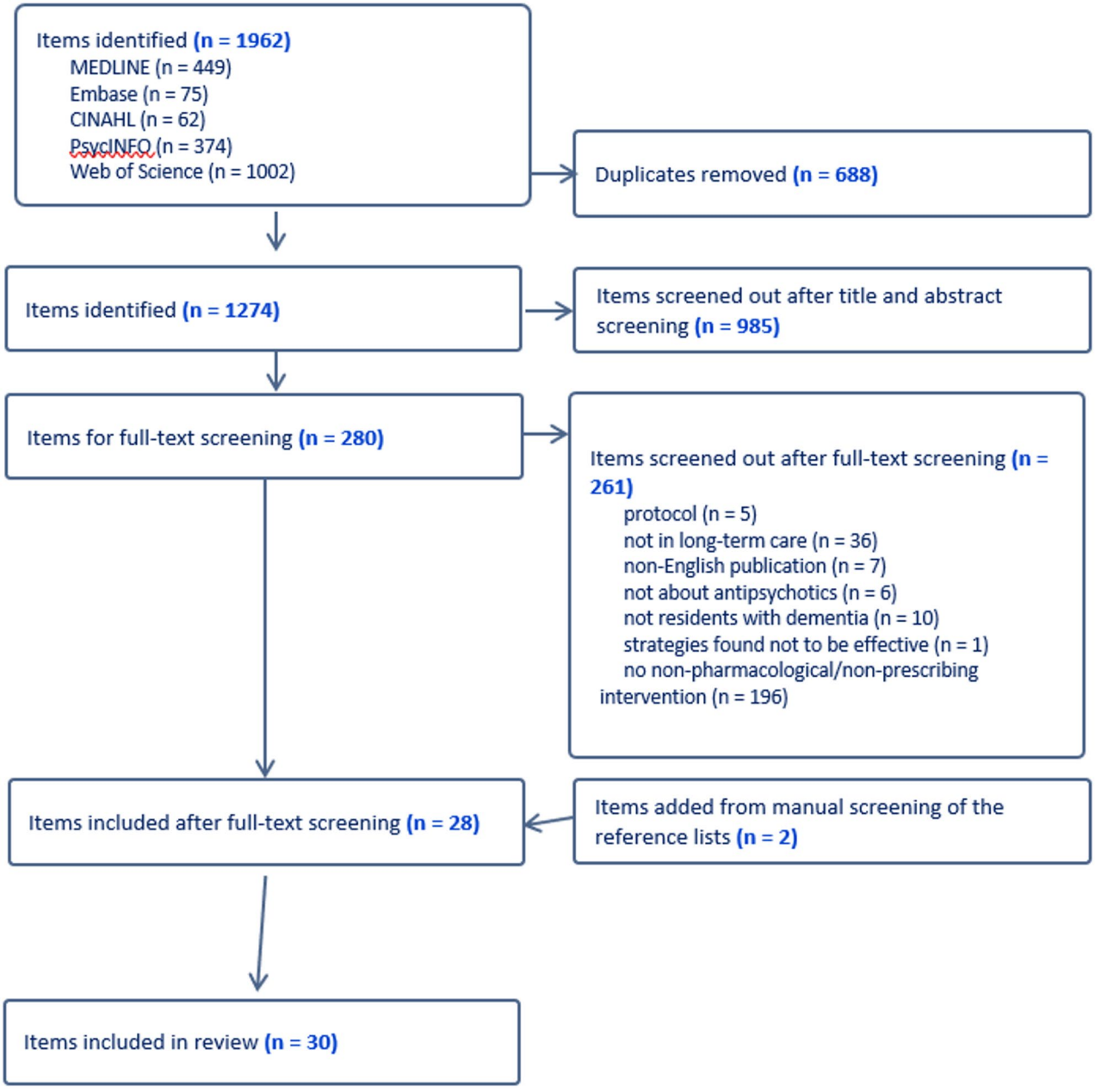

Fig. 1 PRISMA

Mexico ($n = 2$). One study was conducted in each of Denmark, France, and Spain. In terms of publication type, most were journal articles ($n = 25$), followed by professional articles ($n = 3$), with one conference paper and one thesis included. The majority of studies were quantitative ($n = 19$), followed by mixed methods ($n = 6$) and qualitative ($n = 5$).

Strategies to reduce the inappropriate use of antipsychotics in LTC

A range of strategies has been implemented with demonstrated positive outcomes to address the inappropriate use of antipsychotic medications in LTC. These can be broadly grouped into three interrelated categories: person-centred care and environmental adaptation, medication review and monitoring, and regulatory measures. Education and training serve as a cross-cutting foundation supporting the effectiveness of all these strategies.

The first category centres on person-centred care and environmental adaptation. These approaches are grounded in understanding each resident's individual needs, preferences, triggers, and life history [15, 18, 39]. Tailored care plans are developed based on this understanding, guiding more responsive and respectful care

Table 2 Barriers to and facilitators of implementation

Barriers	Facilitators	Related CFIR domains and constructs
Resistance from staff and families	Promoting cultural shifts	The construct of culture under the inner setting domain
Poor team coordination and communication	Improving team collaboration	The communications construct under the inner setting domain
Staffing and training challenges	Change staffing and training	The available resources construct in the inner setting domain
	Accountability	The policies and laws construct under the outer setting domain and the reflecting and evaluating construct under the process domain
	Multifaceted approaches	Note: This facilitator does not correspond clearly to any single CFIR construct

practices. Non-pharmacological interventions are central to this approach, including meaningful activities such as recreation [39], physical exercise [40–42], and music therapy [39, 41–43]. Environmental modifications, such as softer lighting, reduced hallway noise, and limiting crowding in communal areas, also help alleviate distress [40, 41, 44, 45]. These strategies often align with person-centred care models implemented under various names and require proper training for staff to execute effectively [46].

The second category focuses on medication review and monitoring. This involves consistent documentation and interdisciplinary review and discussion of each resident's antipsychotic use, health status, and behaviours to ensure medications are used appropriately [15, 22, 23, 39, 43, 44, 46–50]. Electronic prescribing systems are increasingly employed to streamline this process, support timely adjustments, and enhance oversight [43, 47, 51]. We considered medication reviews and monitoring as non-pharmacological because, although they may result in medication changes, they centre on optimizing care practices through reassessing the need for antipsychotics via interdisciplinary review, communication, and education, rather than administering or adjusting drugs.

The third category includes regulatory measures that aim to enhance accountability and adherence to appropriate prescribing practices. Quality improvement initiatives allow care homes to assess and close gaps in practice relative to regulatory standards [22, 42, 43, 52, 53]. External audits conducted by governmental or accrediting bodies offer independent oversight [15, 42, 47, 48, 54]. Public reporting, wherein facilities disclose antipsychotic use to government agencies for public access, further promotes transparency [22, 55–57].

Education and training underpin the success of all these strategies. Healthcare providers, such as nurses, physicians, and pharmacists, are trained to understand dementia, the risks of antipsychotic use, and effective alternatives [15, 18, 22, 39, 40, 42, 44, 46, 47, 50–52, 57–62]. Training also equips staff with the practical skills needed to implement non-pharmacological and person-centred care [46]. Families are similarly educated about dementia and the potential harms of antipsychotics, fostering shared understanding and collaboration in care planning [49].

Together, these strategies offer a comprehensive and multi-level approach to reducing the inappropriate use of antipsychotics in LTC, with a shared emphasis on individualized care and informed decision-making.

Barriers to and facilitators of implementation

The following sections will present the barriers to and facilitators of implementation of these strategies. They are visualized in Table 2. Several interconnected barriers, including resistance from staff and families, poor team coordination and communication, and staffing and training challenges, often impede efforts to reduce the inappropriate use of antipsychotics in LTC settings. Addressing them requires related facilitators that promote cultural shifts, improve team collaboration, and change staffing and training. Additionally, other facilitators, accountability and a multifaceted approach, are also important to implementation. One thing to note is that some of these factors (e.g., resistance from healthcare providers and families) may be seen as more closely related to deprescribing than to non-pharmacological interventions, though this distinction is not always clear. Moreover, although these approaches differ conceptually, they function together in practice, as successful deprescribing often depends on the availability and uptake of non-pharmacological supports. We therefore analyze their barriers jointly.

One prominent challenge is resistance from healthcare providers and families. This resistance tends to stem from concerns about the behavioural changes that may occur in residents when antipsychotics are reduced or withdrawn, and the potential risks these changes may pose to both residents and staff [41, 45, 56, 61]. Compounding this is the skepticism among staff regarding the effectiveness of non-pharmacological interventions, especially since these interventions generally take time to yield noticeable results [45]. LTC settings are often shaped by an entrenched culture that views antipsychotics as an expedient and effective way to manage resident behaviour [41, 45, 58, 63]. Addressing this resistance requires a comprehensive cultural shift. Creating a culture where there is widespread awareness and a shared commitment to reducing antipsychotic use is essential [44, 47, 50, 57,

58, 64]. Ralph and Espinet [51], for example, argue that inappropriate antipsychotic use should be reframed as a form of elder abuse, which many healthcare providers and leaders are not aware of, emphasizing the ethical imperatives of change. For a cultural shift to happen, everyone needs to be involved. Educating both healthcare providers and families about the risks associated with antipsychotic medications plays a crucial role in shifting perspectives [15, 39, 47, 50, 51, 53, 57, 59, 60, 62]. Staff engagement can be further supported by encouraging a sense of ownership over non-pharmacological strategies [64]. Importantly, sufficient time must be allocated for antipsychotic reduction strategies to demonstrate their impact. For instance, in the study by Thomson et al. [62] which examines the effects of an individualized music program with residents, staff became more motivated to use the program once they saw its benefits for residents.

A second significant barrier is the lack of coordination and communication among different team members within LTC homes. When team members are not aware of each other's actions and interventions, efforts to reduce antipsychotics can become disjointed or even contradictory [41, 50], which were reflected in studies which invited healthcare providers in LTC to share their views on their experience with the use of antipsychotics and antipsychotic reduction. For instance, the study by Ellis et al. [49] describes how frontline staff felt their efforts to implement non-pharmacological interventions were dismissed by physicians who continued to prescribe antipsychotics. Similarly, the study by Rosenthal et al. [41] reports that while physicians were active in deprescribing medications, nurses and nursing assistants often pushed back due to concerns that arose from being excluded from decision-making processes. This illustrates how fragmented communication and a lack of collaboration across roles can reinforce antipsychotic use.

A cohesive team approach is therefore critical. Ensuring that all staff are involved in and aligned with the goals of antipsychotic reduction fosters consistency and strengthens commitment across the care team. Good leadership has been identified as a central factor in facilitating team cohesion and providing clear direction [59]. Well-defined protocols or frameworks can help clarify the roles and responsibilities of each team member in relation to efforts to reduce antipsychotic use [15, 46, 50, 52, 53]. Regular meetings for team review of medication use are recommended as a means of maintaining open lines of communication and fostering a shared understanding [44]. Additionally, appointing a dedicated coordinator to oversee these processes of antipsychotic reduction can facilitate smoother collaboration [23, 47, 51]. Communication should also extend beyond the care home. As Rosenthal et al. [41] point out, physicians in hospitals and LTC often fail to communicate about the use of antipsychotics during patient transitions.

The third barrier relates to staffing issues and gaps in training. Many LTC homes experience significant staff shortages, often driven by high turnover rates [18, 41, 46, 50, 52, 63]. With fewer staff, the workload increases, leaving little time for staff to engage in person-centred and non-pharmacological approaches, which typically require more time and familiarity with residents to be effective [41, 42, 49, 52, 60, 63]. Moreover, consistent training becomes challenging to maintain when staff turnover is high. New hires may not stay long enough to benefit from training. Training is often limited in scope, with some disciplines excluded entirely (reference) or only partial training completed [58]. To overcome this, changes to staffing and training are needed. Cossette et al. [47] emphasize that unless there is a stable and sufficient workforce, staff cannot reasonably be expected to take on the additional responsibilities involved in implementing antipsychotic reduction strategies, such as personalized care plans, non-pharmacological interventions, and medication reviews, as well as going to education and training sessions. Similarly, Gerlach et al. [22] advocate compensating staff for the time they spend delivering non-pharmacological interventions, which validates their work and may enhance motivation. Comprehensive training should be provided to all team members. Some strategies to motivate all staff to participate and complete the training include tailoring the training both to general dementia care and to their specific professional roles [18, 40, 53], facilitating the training by experienced trainers who understand dementia, antipsychotic use and reduction, and LTC [60], and taking a peer training approach, in which selected staff members from the care home are trained to train others [47]. It is also vital that leadership actively promotes training participation and ensures staff follow through with completion [58].

Apart from the above barriers and related facilitators, effective implementation of antipsychotic reduction strategies in LTC requires two more facilitators, accountability and multifaceted approaches. Increasing accountability around antipsychotic use can foster a stronger sense among staff and care homes to commit to ongoing medication and behavioural reviews and to invest in personalized and non-pharmacological interventions [51, 53]. Regulatory measures, alongside comprehensive training and education, play a central role in cultivating this accountability.

The use of a multifaceted approach integrates multiple strategies rather than relying on a single measure. Overdependence on one approach can have unintended consequences. For instance, some studies examine the effect of reliance on regulatory measures of antipsychotic use, such as mandatory public reporting, to reduce the use

of antipsychotics [22, 55]. Some care homes substitute antipsychotics with other sedating medications that may carry similar or even greater risks. These findings indicate that regulatory measures need to be implemented with other antipsychotic reduction measures, such as personalized and non-pharmacological interventions, medication reviews, and education and training [22]. Moreover, healthcare providers themselves have pointed out the limitations of relying solely on regulatory measures. In Rosenthal et al.'s [41] interviews with healthcare providers, staff expressed concerns that external auditors often focused narrowly on reduction targets without considering the complex realities of care, such as the needs of residents with more severe behavioural symptoms. This narrow focus risks discouraging care homes from admitting individuals with complex care needs.

Discussion

The findings answer the three questions posed at the start of this review. First, the findings address "What are the strategies to reduce the inappropriate use of antipsychotics in LTC" by identifying three main approaches: person-centred care, medication review and monitoring, and regulatory measures, with education cutting across these strategies. Second, they address the questions of "What are the barriers to their implementation?" and "What are the facilitators of their implementation?" by highlighting barriers to resistance from staff and families, poor communication among care teams, and issues with staffing and training, as well as the related facilitators addressing them, including cultural shifts, a cohesive team approach, and changes to staffing and training. Additionally, the findings emphasize the importance of facilitators of increased accountability and of employing a multifaceted approach that integrates various strategies rather than relying on a single method.

Comparison with the theoretical framework (CFIR)

We compared our findings with CFIR to deepen our understanding of the barriers and facilitators to implementing antipsychotic reduction strategies in LTC. CFIR proved useful in interpreting many of our findings, particularly through constructs within the *inner setting*, *outer setting*, and *process* domains. This comparison highlights that implementation is influenced not only by internal organizational factors but also by external systems and implementation processes. However, not all findings fit neatly within CFIR, revealing its limitations in capturing the full complexity of antipsychotic reduction efforts.

First, the barrier of *resistance from healthcare providers and families* and the related facilitator promoting cultural shifts align with the CFIR construct of culture under the *inner setting* domain, defined as "shared values, beliefs, and norms across the Inner Setting." [32]. This helps explain how entrenched norms, such as the reliance on antipsychotics as a "quick fix", create resistance to change. Our findings suggest that shifting toward a person-centred culture, which values individualized and non-pharmacological care, is essential to overcoming this barrier.

Second, the barrier of poor coordination and communication among team members and related facilitator a cohesive team approach are illuminated by the communications construct under the inner setting domain. This construct emphasizes the importance of "high quality formal and informal information sharing practices within and across Inner Setting boundaries (e.g., structural, professional)" [32]. Our findings support this, showing that a lack of effective communication hinders team understanding and coordination in implementing antipsychotic reduction. However, we also found that communication issues extend beyond the internal team to external entities, particularly during care transitions. While CFIR includes the partnerships and connections construct in the outer setting domain, it focuses more on structural linkages than communication. Thus, our findings suggest that CFIR may have underrepresented the significance of communication across organizational boundaries.

Third, the barrier of *staffing shortages and training gaps* and the related facilitator *changes to staffing and training* map onto the available resources construct in the *inner setting* domain. This construct refers to "resources [that] are available to implement and deliver the innovation." [32]. Our findings reinforce that many antipsychotic reduction innovations, such as person-centred care planning and interventions, staff education, and medication reviews, require time and human resources. Hence, staffing and training should be recognized as critical resource issues, reinforcing the need for adequate investment and funding.

Fourth, the accountability facilitator partially aligns with the policies and laws construct under the *outer setting* domain and the reflecting and evaluating construct under the *process* domain. The "policies and laws" construct refers to "legislation, regulations, professional group guidelines and recommendations, or accreditation standards [that] support implementation and/or delivery of the innovation." [32]. In the context of antipsychotic reduction, this refers to regulatory measures such as public reporting and external audits. The "reflecting and evaluating" construct means to "collect and discuss quantitative and qualitative information about the success of implementation." [32]. This can refer to measures, such as qualitative improvement (QI), initiated by the care home. However, our findings indicate that education and training also foster a sense of responsibility to implement antipsychotic reduction strategies among staff, suggesting

that accountability extends beyond what these CFIR constructs capture. Therefore, CFIR may not be able to fully explain the role of education and training in cultivating accountability.

Finally, the facilitator of a *multifaceted approach* does not correspond clearly to any single CFIR construct. This may reflect a structural limitation of CFIR, which categorizes influencing factors but does not adequately address how these factors interact dynamically. Our findings highlight that implementation strategies and their associated barriers and facilitators are deeply interdependent. For example, an overreliance on regulatory measures without complementary support can lead to unintended consequences of a shift from the use of antipsychotics to other medications with similar sedating effects. This calls for a more integrative perspective considering the holistic interplay among constructs and strategies, which CFIR does not currently provide.

While CFIR informed our analysis, it has limitations in capturing the full complexity of our findings. To complement CFIR, we suggest incorporating the three-lens framework by Rajagopalan et al. [65], originally developed to examine the implementation factors of sustainability strategies in health care. This framework comprises three interconnected lenses: (1) a political lens, emphasizing power dynamics and the influence of internal and external stakeholders; (2) a strategic lens, focusing on organizational planning aligned with goals and vision; and (3) a cultural lens, highlighting readiness and mindsets for change. Unlike CFIR, the three-lens framework explicitly addresses how these lenses interact. For instance, effective strategic planning (strategic lens) can strengthen leadership support and decision-making (political lens), thereby facilitating cultural change within the organization (cultural lens). This explicit attention to interrelationships among implementation factors helps address CFIR's limitation in mapping multifaceted approaches and explaining how different factors work together to shape implementation outcomes.

Comparison with and contribution to the literature

We noted in the introduction that existing literature on antipsychotic reduction in LTC primarily focuses on the negative impacts of antipsychotic use [13, 66], strategies to reduce their use, and the effectiveness of these strategies [16, 17, 20, 22]. However, there is limited discussion on how these strategies are implemented. This scoping review addresses that gap by identifying key barriers to and facilitators of implementation.

While the systematic review by Raza et al. [27] briefly explored some implementation barriers from staff perspectives, it only included quantitative studies published up to July 2021 and excluded various study types and stakeholders' perspectives. Raza's review primarily highlighted barriers, including limited staff time, inadequate resources, and insufficient education. In contrast, our scoping review further identifies resistance from both staff and families, as well as inadequate team communication and coordination, as barriers. Moreover, it goes beyond identifying obstacles by outlining strategies to address them and emphasizing the key facilitators that support successful implementation.

Implications for research and practice

The findings of this scoping review on implementing antipsychotic reduction strategies in LTC have several important implications for research and practice. For research, while there is existing literature on antipsychotic reduction strategies, there remains a gap in research specifically focused on how these strategies are implemented. Many studies included in this review reference implementation but do not examine it in depth. Future research should prioritize a more detailed investigation of implementation processes. In addition, the comparison with the CFIR framework reveals areas where it may fall short in capturing the complexity of implementing antipsychotic reduction strategies, particularly the significance of cross-organizational communication [44] and the role of education in fostering accountability [53]. These findings suggest the need to refine or adapt existing implementation science frameworks to better reflect the specific challenges and dynamics within LTC settings. Moreover, the existing literature is predominantly quantitative, focusing on tracking changes in antipsychotic use [24–26]. Only a limited number of studies use qualitative approaches to explore the perspectives of those involved in or affected by antipsychotic use and its reduction [41, 61, 63]. Among these, most qualitative studies are based on interviews with healthcare providers, while the perspectives of residents and their families remain largely absent. Future research should prioritize including these voices to better understand how antipsychotic reduction strategies are experienced and implemented.

For practice, the identification of a multifaceted approach as a key facilitator underscores the importance of understanding how different strategies, barriers, and facilitators interact [22]. LTC facilities should adopt comprehensive, integrated approaches that combine person-centred care, regular medication reviews, and regulatory measures. The findings also point to the need for policies that support systemic reforms to facilitate the implementation of these strategies. Such reforms should promote cultural change, strengthen team collaboration and communication, and address staffing structures to enable more effective care. Central to this is a team-based approach that involves all members of the interdisciplinary care team, including frontline staff, families, and leadership. Effective leadership is recognized as a key

enabler of team-based approaches in the effort to reduce the inappropriate use of antipsychotics. However, specific strategies for developing and sustaining such leadership are often underexplored in this body of literature. Future initiatives would benefit from articulating concrete leadership practices that support effective leadership. Insights from the clinical education literature suggest that key strategies may include providing supportive supervision, implementing structured follow-up with staff, and creating opportunities for reflective practice [67]. Education and training are particularly critical, as they help build shared accountability and equip team members with the knowledge and skills needed to implement these strategies. Training should cover both general principles of dementia care and the specific roles of staff from different disciplines, and include the roles that people living with dementia, family members can take in supporting non-pharmacological approaches to care.

While all identified barriers and facilitators are essential, one critical but often overlooked factor is the deeply rooted, unconscious ageism and stigma surrounding dementia in LTC settings. For example, in the findings, Ralph and Espinet [51] suggest that the inappropriate use of antipsychotics constitutes a form of elder abuse, yet many healthcare providers and leaders remain unaware of this practice. This unawareness reflects underlying unconscious ageism, where older adults' quality of life and well-being are undervalued. These underlying biases can shape the attitudes and priorities of healthcare providers and organizational leadership, subtly influencing care practices and policy decisions. Notably, only one study in the reviewed literature addresses this issue explicitly. There is a clear need to acknowledge and name this stigma directly, thereby better informing future interventions and research.

Strengths and limitations of the scoping review

This scoping review has several strengths. It followed the Joanna Briggs Institute (JBI) guidelines, enhancing methodological rigour and transparency [34]. Another strength is the involvement of a diverse team, including patient and family partners, healthcare providers, researchers, and trainees. Their input, especially from those with lived and clinical experience, improved the review's relevance and practical value. Multiple perspectives contributed to the scoping review. For example, during study selection, team members provided input on the inclusion criteria to ensure that a range of viewpoints was represented. Frontline healthcare providers, who frequently encounter pharmacological approaches in practice, expressed particular interest in non-pharmacological interventions. Leaders and managers emphasized the importance of including interventions with demonstrated effectiveness, reflecting their responsibility to ensure that resources are allocated efficiently. As a result, the inclusion criteria incorporated both non-pharmacological strategies and those supported by evidence of effectiveness. Third, using the CFIR framework deepened our understanding of the findings, offering insights into factors influencing implementation. However, the review has limitations. It was restricted to English-language publications, potentially excluding relevant studies in other languages. Additionally, a formal quality assessment was not conducted, in line with scoping review methodology, which aims to map the breadth of research rather than appraise evidence quality [68]. Fourth, a focus on antipsychotics of this scoping review may unintentionally overlook the prescription of other medications that are problematic and less supported by evidence. As seen in the scoping review, some long-term care homes may replace the use of antipsychotics with these other medications.

Conclusions

In conclusion, the inappropriate use of antipsychotics negatively affects the quality of life of residents in LTC. Although there is extensive literature on strategies to reduce antipsychotic use, limited attention has been given to the implementation of these strategies. This scoping review explored the implementation of antipsychotic reduction strategies in LTC. Our findings reveal that strategies encompass person-centred care and environmental adaptation, medication review and monitoring, and regulatory measures, with education and training as a crucial foundation. However, implementing these strategies can be hindered by resistance from staff and families, poor team coordination and communication, and staffing and training challenges, even though they can be addressed by cultural shifts, a cohesive team approach, and changes to staffing and training. Facilitating successful implementation also requires fostering accountability and adopting a multifaceted approach that integrates various strategies. CFIR was helpful to understand how contextual factors influence implementation outcomes, but it falls short in capturing the complexity and interdependence of factors in real-world LTC. This review advances the literature by addressing a critical gap: how antipsychotic reduction strategies are implemented, not just whether they work. It provides a foundation for future research to explore implementation processes more deeply and offers actionable insights to inform policy development, interdisciplinary education, and system-level improvement efforts aimed at supporting person-centred dementia care.

Abbreviations

LTC	Long-term care
CFIR	Consolidated Framework for Implementation Research

PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Supplementary Information

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Supplementary Material 1.

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Declarations

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Not applicable.

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Competing interests
The authors declare no competing interests.

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