Behavioural and psychological symptoms of dementia: are there any effective alternative-to-antipsychotics strategies?

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Abstract

Introduction
Dementia is a syndrome of a progressive decline in multiple physical and intellectual areas. ‘Behavioural and psychological symptoms of dementia’ are usually addressed with pharmacological interventions (i.e., antipsychotics) as the first choice, while ‘person-centred care’ is an effective alternative-to-antipsychotics approach.

The purpose of this integrative literature review was to explore the literature on effective alternative-to-antipsychotics strategies to manage behavioural and psychological symptoms of dementia; to inform family physicians about alternative-to-antipsychotics strategies; and to suggest implementation of alternative-to-antipsychotics interventions to prevent or delay older adults’ cognitive decline.

Methods
To address the aims of this review, we searched Medline and Cumulative Index to Nursing and Allied Health Literature databases, and cross referenced publications using the following keywords and terms: antipsychotics, elderly, older adults, long-term care facilities/settings, alternative to antipsychotics interventions. The aim of this review was to discuss if there are any effective alternative to antipsychotics strategies in dementia.

Discussion
Social engagement and modifiable lifestyle habits (e.g., lifelong learning, mental and physical exercise) are protective factors for cognitive vitality in aging and decreased risk of dementia. Recommendations include an emphasis upon person-centred care, safe environment, information availability for families and informed consent-to-care to improve older adults’ quality of life and reduce caregiver burden.

Therefore, the following implications are suggested: evidence-based policy-making for appropriate use of antipsychotics and implementation of non-pharmacological and individualised interventions as the first option of available treatments; awareness and multidisciplinary collaboration for caring older adults; and more research to better understand the impact of alternative-to-antipsychotics interventions on quality of life and the cost of providing care.

To address behavioural and psychological symptoms of dementia, the following steps are required (a) an interdisciplinary curriculum, so that health professionals can form appropriate skills; (b) inter-professional meetings to increase awareness of non-pharmacological approaches; (c) discussion with older adults and their families to explain the rationale for using antipsychotics to assure consent-to-care and (d) restructuring of the delivery of care for more person-centred approaches.

Conclusion
Increasing awareness of family physicians about the appropriate use of antipsychotics and effectiveness of alternative-to-antipsychotics strategies to treat behavioural and psychological symptoms of dementia may influence quality of life of older individuals with dementia.

Background
There are about 35.6 million people with dementia in the world¹ and more than 1 million Canadians will be diagnosed with dementia by 2035². Dementia is a generic term used to describe a syndrome that may be caused by a number of illnesses in which there is progressive decline in multiple areas of intellectual functions including memory, reasoning, communication skills, the ability to carry out day-to-day activities and social behaviour³. In addition to cognitive impairment, people with dementia often show neuropsychiatric symptoms called ‘behavioural and psychological symptoms of dementia’ (BPSD) that are characterised by inappropriate verbal, vocal or motor activity that result from the needs or confusion of the individual⁴ such as agitation, aggression, restlessness, wandering, shouting, repetitive vocalisations, sleep disturbance, depression and psychosis⁵. These behaviours increase suffering for those affected and influence caregivers’ well-being. As a result, pharmacological interventions are often used as the first solution to deal with these behaviours. Typical or conventional antipsychotics were

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first approved and have been used to treat schizophrenia and bipolar disorders since the 1970s; they are also regularly prescribed in residential care facilities as pharmacological interventions to control BPSD, followed by the prescription of atypical agents in the 1990s\textsuperscript{16}. This is so, despite their moderate efficacy, the availability of non-pharmacological alternatives\textsuperscript{17}, and serious adverse events (e.g., falls, increased risk of mortality) associated with their use\textsuperscript{18,19}. Evidence indicates that the use of atypical antipsychotics was increased by about 35\% in Ontario\textsuperscript{20} associated with about 750\% substantial increase in cost between 1993 and 2002. Also, prescription rates for antipsychotics in older adults were 4.7\% in the community and 47\% in residential care from 2006 to 2007 period\textsuperscript{21}. Similar findings have been reported by researchers in Manitoba, New Brunswick and P.E.I. shown that older adults living in residential care are more likely (37.7\%) to use antipsychotics as compared to those living in the community (2.6\%)\textsuperscript{22}. Current recommendations suggest weighing the clinical benefits of antipsychotics against their potential risks\textsuperscript{23} and adverse events\textsuperscript{24}, and instead, using evidence-based and effective psycho-social strategies such as physical activities and caregiver interventions\textsuperscript{25}.

It is important for older adults to maintain independence as they face a range of age-related health issues both physiological (e.g., osteoporosis) and psychological (e.g., depression) that can often be interrelated. For example, loss of functional mobility can contribute to depression, which is highly related to cognitive health\textsuperscript{26}. Therefore, interventions in the vulnerable population of elderly that contribute to a small increase in physical mobility or function (e.g., exercise, dance) may also have psychological benefits and a strong impact on independence, quality of life and well-being. Promotion of physical, appropriate and stimulating activities in later life should offer choice and be tailored to the individual. Dance (e.g., aerobic, traditional, social) seems to offer the potential for being both an attractive and appropriate form of physical activity, and a therapeutic intervention for the older population that supports intellectual, emotional and motor function in persons with dementia\textsuperscript{14,15}. While there is limited research on the impact of dance on older adults, findings suggest dance is a positive factor where physiological\textsuperscript{27} and psychological\textsuperscript{28} well-being of older adults is concerned. For example, dance has been shown to improve verbal abilities of elderly individuals with dementia\textsuperscript{29}, promote social inclusion and combat loneliness\textsuperscript{30}, reduce the prevalence of falls and cardiovascular health risks\textsuperscript{31}, and reduce symptoms of anxiety and depression\textsuperscript{32}.

**Significance of the problem**

Social isolation, loneliness, emotional distress, social inactivity, and sometimes depression can occur in older adults as a result of factors such as bereavement or loss of independence and mobility. Those symptoms are also observed among elderly with dementia in residential care settings\textsuperscript{33}. According to perceptions of older individuals, meaningful and important activities as part of their daily lives in residential care settings include listening to music, singing and dancing; especially, when those activities are based on past roles, interests, routines, values and beliefs\textsuperscript{34}. Thus, from the 1990s onwards, a growing body of literature has focused on ‘person-centred care’\textsuperscript{35} and management of BPSD through effective non-pharmacological (e.g., cognitive stimulation, recreational and physical activities) alternative-to-antipsychotics (AtAs) strategies\textsuperscript{36}. Non-pharmacological interventions have proliferated to address behavioural problems in older adults with dementia living in residential care facilities\textsuperscript{25}. Those AtAs interventions enhance meaningful interactions among residents\textsuperscript{26} that support communication and the development of trusting relationships with caregivers\textsuperscript{37}, opportunities for single-stimulus choice-making in daily routines by trained staff especially during mealtimes\textsuperscript{28} as well as opportunities to express preferences and use of choice-making\textsuperscript{38} that may lead to improvements in quality of life and well-being\textsuperscript{2}. In addition to this, mental and physical exercise\textsuperscript{39–41}, cognitive and social engagement\textsuperscript{42}, activities that support stress reduction, and proper nutrition\textsuperscript{43} have resulted in improvements in behavioural symptoms and cognitive vitality\textsuperscript{44}, have reduced the number of problematic behaviour occurrences; increased the number of choices made by the elderly people; enhanced cognition, affect, and performance of daily living activities and quality of life\textsuperscript{27,29,34}; reinforced a positive sense of self among those diagnosed with dementia; and reduced caregiver burden.

Alternative-to-antipsychotics (AtAs) strategies may address a number of challenges that healthcare systems currently face such as shortage of nursing staff and increase cost from the inappropriate use of antipsychotics and side effects associated with use of antipsychotics. For example, trained volunteers or activity specialists such as dancers (e.g., American Dance Therapy Association), psychologists and/or social workers could employ AtAs strategies to improve resident quality of life, independence and satisfaction with care without the involvement of nursing staff. In addition, AtAs interventions could reduce inappropriate use of antipsychotics and decrease side effects associated with use of antipsychotics, and would improve resident engagement and quality of life. (AtAs) strategies may

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also be able to reduce the costs associated with providing care in residential care facilities by optimising residential facility structures and processes, improving care and preventing avoidable hospital admissions.

What the present review adds to the literature
This literature review may interest family physicians who provide care to middle-aged and older individuals within families in order to maintain cognitive vitality with aging. In a recent comparative study among physicians, psychologists and nurse practitioners on knowledge of and attitudes towards non-pharmacological interventions for treatment of BPSD, physicians had significantly lower knowledge of non-pharmacological interventions than psychologists or nurse practitioners. Raising awareness and increasing understanding of dementia and BPSD are an important step in preventing stigma that is often associated with dementia and in explaining that dementia is not an inevitable consequence of aging. Another essential step is to identify and diagnose people with dementia, which is often the responsibility of family physicians, and help those older adults living as normal a life as possible for as long as possible.

Purpose and objectives
The primary purpose of this integrative literature review was to:

- explore the literature on common treatments to manage behavioural and psychological symptoms of dementia as well as potential AtAs strategies;
- inform family physicians about AtAs strategies and their effectiveness and
- suggest implementation of AtAs interventions as early as possible (at the community level) to prevent or delay older adults’ cognitive decline and performance.

To address the above stated purpose and objectives, we conducted an integrative literature review. We searched the literature for relevant publications based on certain search strategies and databases. Specifically, a search was performed in the MEDLINE, Cumulative Index to Nursing and Allied Health Literature, and Cochrane databases, as well as cross referenced publications on the effectiveness of antipsychotic medications and alternative strategies as treatment of neuropsychiatric symptoms of dementia. Combinations of the following keywords and search terms were used: ‘dementia’, ‘agitation’, ‘aggression’, ‘antipsychotics’, elderly (aged or frail elderly), older adults (frail older adults), residential care/long-term care facilities/settings.

Inclusion/exclusion criteria:
English language, empirical and theoretical publications, as far back as possible, but not older than 1980 as antipsychotics were regularly prescribed in residential care facilities as pharmacological interventions to control BPSD in the 1980s. Our literature search revealed 1,184 publications (n = 1,122 from Medline and n = 62 from Cumulative Index to Nursing and Allied Health Literature). We excluded duplicates (n = 251), abstracts (n = 876) and full text articles (n = 30) that were not relevant to our inclusion and exclusion criteria. A total number of 27 articles remained and were reviewed for inclusion in this literature review.

Discussion
The relevant publications were reviewed and summarised to present the current knowledge on non-pharmacological AtAs interventions and their impact on the quality of life of older adults with dementia and BPSD. In the majority of publications, it is obvious that the most important issues facing older adults are social problems. A social approach (i.e., university students as volunteers) to deliver the social aspects of care in residential care homes may benefit both the older adults and students. Elderly individuals may feel a sense of hope and anticipation by socially interacting with students. Students have opportunities to gain volunteer experience that may increase the probability they choose to pursue careers in gerontology. Indeed, factors that influence the behaviour of older adults with dementia have certain environmental characteristics. For example, social engagement was increased when older adults were participated in small groups.

In addition, protective and promoting factors for cognitive vitality in aging and decreased risk of dementia or cognitive decline include modifiable lifestyle habits such as lifelong learning, cognitive engagement, mental and physical exercise, stress reduction and proper nutrition. However, more and higher quality research is needed so that stronger evidence is present before making recommendations for specific interventions.

In 2000s, non-pharmacological interventions were the new trend and were identified as a new way to address BPSD in elderly with dementia. To accommodate unmet needs that were matched to the person’s sensory, mental and physical abilities, habits and preferences and individualised treatment plans were developed to address older adults’ behavioural problems, regardless of environmental characteristics. In 2010, Jiska Cohen-Mansfield and her colleagues argued that providing stimuli (e.g., live social stimuli, music, self-identity, work, simulated social activities) can be used as an approach to prevent agitation in elderly with dementia, with live social stimuli being the most successful type of intervention. Some of those non-pharmacological interventions (e.g., music therapy) may be applied in home settings by informal
carers at little or no cost to themselves or to health and/or social care services. However, other interventions (e.g., exercise activities) require training and instruction. The first Scottish Intercollegiate Guidelines Network was published in February 1998 and addressed, among other things, non-pharmacological interventions (e.g., behaviour management, cognitive stimulation, multisensory stimulation and combined therapies, recreational and physical activities, reality orientation therapy or caregiver intervention programs) for the management of behavioural and psychological (neuropsychiatric) symptoms of dementia. Psychosocial interventions in older adults with dementia living in residential care facilities, behavioural management techniques (e.g., behaviour therapy), cognitive stimulation and physical activities (e.g., walking) had a positive effect on behavioural as well as physical conditions. The guidelines emphasised the importance of care tailored to a person’s needs and capabilities and on an individual’s life context. Current guidelines also recommend non-pharmacological interventions that should be offered to older adults with dementia as a first-choice for addressing BPSD and to improve older adults’ quality of life and wellbeing. Evidence suggest that physicians are significantly more favourable to the use of pharmacological interventions as compared with psychologists and nurse practitioners. These differences in approach may be due to differences in educational background and training among healthcare professionals. In a report conducted by the British Columbia Ministry of Health in 2011, the extent of antipsychotics use in provincial residential care facilities was examined as well as use of consent-to-care by residents or their representatives. The review recommendations emphasised the need for person-centred care, a safe environment for residents and staff, information availability for families, informed consent-to-care and ongoing monitoring of resident medications.

In a systematic review, commissioned by the Norwegian Directorate of Health, scholars identified the effect of interventions aimed at reducing potentially inappropriate use of antipsychotics in residential care settings. Their findings indicate that educational interventions involving caregivers and pharmacist medication review may potentially reduce inappropriate use of medications. In response to the British Columbia report, the Interior Health Authority’s Antipsychotic Drug Review Committee developed an evidence-based best practice guideline, titled ‘The algorithm for accommodating and managing BPSD in residential care’. This algorithm is an electronic decision-support tool for clinical assessment of and care decisions for persons with BPSD and specifically focuses on appropriate use of antipsychotics in residential care settings. Health care professionals were encouraged to use the algorithm to deliver non-pharmacological and person-centred dementia care in older adults to improve caregiver quality of care and family decision-maker engagement in consent-to-care.

Implications for practice, policy and research

Evidence-based policy-making needs to be warranted for appropriate use of antipsychotics and implementation of non-pharmacological AtAs interventions as the first option of available treatments. Awareness and multidisciplinary collaboration for caring community-dwelling older adults as well as those in residential care settings is an important first step. In addition, more research is required to better understand the impact of non-pharmacological interventions on older adults’ quality of life and the cost of providing care, and ways for successful interventions to enhance a multidisciplinary approach to individualised and person-tailored approaches in residential care facilities. Furthermore, there is a need to determine how residential care facilities can be restructured to include AtAs interventions as part of everyday person-centred care.

Strategies and recommendations

According to this literature review, we suggest the following strategies be employed to address the issue of appropriate use of antipsychotics and to introduce AtAs approaches in managing behavioural and psychological symptoms of dementia of older adults living in the community or in residential care facilities:

- Interdisciplinary curriculum development for healthcare professionals (e.g., physicians, psychiatrists, nurses, psychologists) to continuously and professionally cultivate or improve appropriate skills for treating elderly with BPSD and to equip themselves for their role in the management of the complexity, comorbidity, and severity of mental and physical disorders of older adults with dementia.
- Regular inter-professional meetings may increase awareness of non-pharmacological approaches to BPSD. Through these meetings healthcare providers from a variety of disciplines may agree on the best available practices for reduction and appropriate use of antipsychotics.
- Explanation of the situation and discussion with older adults and/or decision-makers using plain language to express the rationale of using antipsychotics to treat BPSD is a proactive step to assure consent-to-care.
- A restructuring of care delivery in community and residential care facilities. There is a need to...
shift towards using more person-centred AtAs approaches that can be used to treat BPSD, while at the same time improving the cognitive and physical function of those affected with dementia.

Conclusion
The use of antipsychotics in residential care facilities to manage behavioural and psychological symptoms of dementia has radically increased, which may be described as a significant public health problem. In this integrative review, our overarching goal in the field of family medicine was threefold: (a) to explore the literature on treatments to manage behavioural and psychological symptoms of dementia in the aging population by using both pharmacological and non-pharmacological strategies; (b) to provide awareness on the debated use of antipsychotics and their serious consequences and (c) to enhance knowledge of family physicians on the potentially effective AtAs strategies in treating BPSD not only in the residential care facilities, but in the community too as early as possible to prevent or delay older adults’ cognitive decline and performance. Our main conclusions support the idea that increasing awareness of family physicians is challenging because (a) many are not aware of the prevalence of dementia, BPSD and their treatment; (b) their beliefs of the ability of antipsychotics might be inaccurate and (c) only a few studies examine the effectiveness of AtAs strategies on elderly quality of life and on the management of BPSD.

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