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Review Article

# A scoping review on medication adherence in older patients with cognitive impairment or dementia

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**Abstract**

*Background:* Cognitive impairment is common in older patients, many of whom receive multiple and complex medication regimens. Such patients are at high risk for medication non-adherence. Limited information exists regarding adherence in this population. A scoping review was conducted to explore aspects of medication adherence in this population.
*Methods:* A comprehensive search of MEDLINE, EMBASE, CINAHL, IPA and Psychinfo was conducted during 1966 to January 2015. Arksey and O'Malley's framework for scoping reviews was utilized.
*Results:* From an initial 582 citations, 42 research papers and 2 conference proceedings were eligible for review. The prevalence of non-adherence ranged from 2% to 59%. The most common assessment tool was self-reported adherence (32%). Barriers to adherence were cognitive impairment, non-Caucasian race, poor communication with prescribers, lack of social support, and increased pill burden. Interventions to improve adherence included alternate dosage forms, and multi-compartment pillboxes.
*Conclusion:* Additional research is needed to address various gaps in the literature such as studies describing the effects of cognitively impaired caregivers on patient's medication adherence, the comparative effectiveness of different adherence enhancing strategies, development of instruments suitable for use in this population, and the role of pharmacists in identifying and improving medication adherence.


*Keywords:* Scoping review; Medication adherence; Older patients; Cognitive impairment; Dementia; Geriatrics; Aged; Pharmacy

## Introduction

Patient adherence is of utmost importance to maximize the benefits of prescribed medications.[1] Failure to adhere to a prescribed medication regimen may lead to suboptimal clinical outcomes. For example, compared to hypertensive patients taking beta-adrenergic blockers whose adherence was ≥80%, those with poor adherence had a 4.5 times increased risk of coronary heart disease.[2] The World Health

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Organization (WHO) defines medication adherence as "the extent to which a person's medication taking behavior corresponds with agreed recommendations from a health care provider."[3] Patient behaviors related to adherence are dynamic, vary according to comorbidities, and are subject to multiple interacting factors such as the number of medications and the complexity of prescribed regimens.[4] It becomes increasingly challenging for patients to adhere to their prescribed medication(s) when regimens are highly complex. For example, in a cohort of older people mean adherence was 37% and non-adherence was associated with the complexity of drug regimens.[5] Interestingly, although older patients generally consume multiple medications, their medication adherence has been found to be higher, lower, or comparable to that of younger patients.[1] Nevertheless, this population presents a unique challenge with regards to optimal medication adherence due to the frequency of polypharmacy, coupled with the requirement of following a complex set of medication taking instructions. Older patients often present with multiple comorbidities thus requiring multiple medications. The cost of medications, decreased mobility, and lack of satisfaction with care are additional barriers that negatively impact medication adherence.[6]

Cognitive impairment is an important barrier to medication adherence in older (i.e., over the age of 60–65 years) patients. The current prevalence of cognitive impairment [i.e., mild cognitive impairment (MCI) and Alzheimer's disease related disorders (ADRD)] in Canada is 8% among those aged 65–74 years, increasing dramatically to 28–61% among those aged 75–85+ years.[7] Not surprisingly, cognitive impairment has been shown to have negative effects on medication adherence.[8] As adherence requires a set of complex cognitive skills, such as accessing medications, refilling medications, understanding and following directions, and scheduling medication taking times, patients with cognitive impairment can have difficulties in any and all of these required tasks.[9] Indeed, these tasks require verbal memory, working memory, processing speed and reasoning, some, or all of which would be expected to be impaired in older adults with cognitive impairment.[9] A major consequence of dementing illnesses is that special attention is required for medication management with regards to appropriate medication use and including optimizing adherence.[10]

Accurate assessment of medication adherence is important to determine the success of an intervention aimed at improving adherence, or to account for effectiveness (or lack thereof) of a medication regimen.[11] Thus, a major challenge in this field is the lack of a gold standard measure of medication adherence. A gold standard is a tool or method, which is simple, valid and reliable, with an optimal balance of sensitivity and specificity for assessing medication adherence.[11] Numerous methods are available to assess adherence in older people, each with their strengths and weakneses.[1,11]

Unfortunately, there is a dearth of information describing various aspects of medication adherence in patients with cognitive impairment, such as the prevalence of non-adherence, barriers and facilitators associated with non-adherence, adherence enhancing methods that may be used by patients and/or caregivers, and effectiveness of available interventions aimed at improving adherence. These issues are vitally important to multiple stakeholders including the patient's caregivers, geriatric or neurology care teams (which may include nurses, nurse practitioners, social workers, occupational therapists and pharmacists), drug benefit plans, and health care systems. This scoping review was therefore conducted to map the current literature, to address gaps in literature, examine the extent and range of research activity, and finally, to summarize the research findings.

## Methods

Arksey and O'Malley's framework for scoping reviews was used for the present study.[12] The following steps were undertaken: (1) development of the research question, (2) location of relevant publications, (3) screening and selection of publications, (4) data charting, (5) analyzing data, and summarizing and reporting the results. Levac et al refer to scoping studies as "mapping," which is a process of summarizing a range of evidence to convey the breadth and depth of a field.[13] Mapping may act as a blueprint to examine the extent, range and nature of research activity, determine the value of undertaking a full systematic review, summarize and disseminate research findings, or identify research gaps in the existing literature.[14]

### *Step 1: development of the research question*

This scoping review focused on mapping the area of medication adherence in older patients with cognitive impairment. The research question was "What is known about medication adherence in patients with cognitive impairment?" The