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**Review Article**

# Cannabis use in older adults-comprehensive literature review

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## ABSTRACT

Interest in medical cannabis (MC) use is growing among older adults, driven by its potential for managing chronic conditions such as pain, Parkinson's disease (PD), and sleep disturbances. However, despite increasing usage, evidence supporting its efficacy remains inconclusive, particularly regarding its effects on mental health, cognition, and quality of life. While MC may offer benefits, such as pain relief and anxiety management, the pharmacokinetic and pharmacodynamic changes associated with aging present unique challenges, including drug interactions and increased vulnerability to adverse effects. Additionally, older adults face an elevated risk of cannabis hazardous or harmful use, influenced by factors like chronic health conditions, cognitive decline, and polypharmacy. A literature search following SANRA guidelines and using PubMed and Google scholar from 1980 to 2024 was conducted, focusing on studies involving older adults and cannabis use. The consequences of cannabis use in this population may include cognitive impairment, cardiovascular issues, and increased risk of falls. This review of literature examines the trends in cannabis use among older adults, the potential benefits and risks, and the need for cautious management and screening to minimize harm. Educating healthcare providers and older adults on the risks of cannabis use and the importance of monitoring is essential. Further research is needed to explore the long-term effects and safety of cannabis in older adults to guide clinical practice.

**Keywords:** MC, Older adults, Cannabis use

## INTRODUCTION

Interest in MC is growing globally, though regulations vary by country, impacting medical practice and experience.[1] While public opinion suggests that cannabis has therapeutic potential for numerous diseases, there remains a significant gap between perception and the evidence in medical literature.[2] It is often believed that MC is primarily used by young adults, but usage among older adults is rising, with prevalence rates ranging from about 7% to 12.5%, depending on the country.[3-6] Recreational use of cannabis among older adults is also notably increasing, particularly in the United States. In geriatric medicine, alleviating suffering and enhancing quality of life are key objectives. Conditions like chronic pain, PD, depression, sleep disorders, and malnutrition are prevalent in older adults.[7-12]

Current treatments for these issues often lead to serious side effects. For example, non-steroidal anti-inflammatory drugs (NSAIDs) can cause gastrointestinal bleeding, renal impairment, and cardiovascular events.[13] Sedative hypnotics may result in psychomotor impairment, confusion, and increased fall risk.[14] Opioids can lead to constipation, drowsiness, and potentially fatal respiratory depression, especially amidst rising concerns about opioid-related deaths.[15-18]

## LITERATURE SEARCH

A literature search was conducted following SANRA guidelines and using PubMed and Google Scholar from 1980 to 2024, focussing on older adults and cannabis use. A manual search of bibliographies from relevant articles was also performed. Eligible studies included those published in English, with participants aged 65 and older, reporting on current cannabis use and addressing mental health or cognitive outcomes. Only original research, such as randomized controlled trials, observational studies, and epidemiological research, was included. Studies not meeting these criteria were excluded.

### *Efficacy and indications for MC in older adults*

Older adults may find relief from various symptoms through cannabis, including chronic pain, sleep difficulties, tremor, spasticity, agitation, nausea, vomiting, and appetite loss. Cannabis may also benefit palliative care, but evidence supporting its efficacy for these symptoms in older adults is scarce, as noted in several reviews and major reports from the national academies of sciences and Canadian health authorities.[19,20]

### *Chronic pain*

Chronic pain is a primary reason for MC prescriptions. The national academies of sciences report concludes that cannabis is effective for chronic pain in adults.[19] However, despite numerous studies, including randomized controlled trials, its efficacy as a chronic pain treatment remains debated.[21] In Colorado, 89.7% of older patients listed pain as a primary or secondary condition for MC use.[4] While large studies included older adults, their representation was often minimal or not analysed separately for safety and efficacy.[21,22]

### *PD*

PD primarily affects older adults and results from dopaminergic neuron loss, leading to motor symptoms like bradykinesia and rigidity.[23] PD also has non-motor symptoms, including depression and pain.[24] Two small, randomized trials did not demonstrate cannabis's efficacy in treating PD motor symptoms.[25,26] However, cannabis may enhance quality of life and alleviate non-motor symptoms.[27]

### *Sleep difficulties*

About 50% of individuals over 65 report sleep difficulties, which tend to increase with age.[28] It is crucial not to confuse sleep issues with normal aging, as they often stem from medical and psychiatric conditions.[29] Cannabis withdrawal can also cause sleep disturbances, prompting continued use.[30,31] Although both pharmacological and non-pharmacological treatments exist for sleep disorders, a meta-analysis on cannabis's therapeutic effects remains inconclusive,[32] though some research indicates potential benefits due to its anxiolytic properties.[35]

### *Nausea and vomiting*

Cochrane reviews suggest that cannabis-based medications might be effective for chemotherapy-induced nausea and vomiting.[33] A recent review indicates low-quality evidence for cannabinoids compared to other agents or placebo.[34] The only relevant study from 1982 found no significant difference between THC and prochlorperazine for nausea in older adults.[35]

### *Post-traumatic stress disorder (PTSD)*

The effectiveness of cannabis for PTSD in older adults has not been studied, though some research in younger adults has also shown inconclusive results regarding MC's effectiveness.[21]

### *Dementia*

Dementia, common in older adults, leads to cognitive decline.[36] Small studies using Dronabinol or tetrahydrocannabinol (THC) extracts reported improvements in neuropsychiatric symptoms and quality of life for dementia patients, with few serious adverse events noted.[37-39] However, a study using Namisol (an oral THC tablet) found no improvements in neuropsychiatric symptoms or quality of life for dementia patients.[40]

### *Palliative treatment*

A recent systematic review and meta-analysis could not make recommendations on cannabis use in palliative care due to the predominance of studies involving younger adults, with few older participants.[41]

## SPECIAL CONSIDERATIONS AND PRECAUTIONS

### *Pharmacokinetics, pharmacodynamics, and drug interactions*

Aging significantly alters pharmacokinetics and pharmacodynamics. Hepatic clearance and renal elimination decline, and increased body fat and decreased lean mass affect the distribution of lipophilic drugs like cannabis.[42] Two small studies assessed the pharmacokinetics and pharmacodynamics of THC in older adults, including those with dementia, but more extensive research is needed.

### *Trends in cannabis use among older adults*

In recent years, cannabis use among older adults has surged, with significant increases in usage patterns across both medicinal and recreational contexts. In the United States, for example, cannabis harmful or hazardous use in older adults rose by over tenfold between 2006 and 2018.[37]

Similarly, studies highlight that in states where recreational cannabis is legal, there has been a notable rise in cannabis use among older adults, with many turning to cannabis for therapeutic purposes, including pain relief, anxiety management, and treatment for sleep disturbances.[38] Research also suggests that older adults may use cannabis as an alternative to prescription medications, particularly opioids, which have long been associated with high risks of dependency, overdose, and mortality.[39] The opioid crisis has spurred interest in cannabis as a potentially safer option, particularly among those suffering from chronic conditions like arthritis, neuropathic pain, and fibromyalgia.[40] These chronic conditions are prevalent in older adults, making cannabis an appealing option for symptom management.

Generational attitudes towards cannabis have shifted as well. Baby boomers, who may have experimented with cannabis in their youth, appear more open to using it again in later life, especially as stigma declines and its legal status changes.[41] In Canada, where cannabis was legalized recreationally in 2018, surveys indicate that cannabis use among older adults increased substantially following legislation.[42] Notably, this shift is not limited to recreational users, as a growing number of older adults are seeking cannabis for medicinal purposes without a comprehensive understanding of its risks.[43]

### *Risk factors for cannabis hazardous or harmful use in older adults*

Although many older adults use cannabis responsibly, certain factors may predispose them to cannabis hazardous or harmful use. One primary factor is the desire to manage chronic conditions such as arthritis, back pain, and insomnia, which are prevalent in older populations.[44] The self-directed use of cannabis for medical purposes-often without consultation with healthcare providers-poses a risk of overuse and dependency. Studies have found that a significant proportion of older cannabis users do not disclose their cannabis use to their physicians, creating potential for hazardous or harmful drug interactions and adverse outcomes.[43] Age-related cognitive decline, including conditions such as mild cognitive impairment and dementia, may increase the vulnerability of older adults to cannabis hazardous or harmful use. Cognitive deficits may impair judgment, memory, and the ability to regulate cannabis use, leading to inadvertent overuse or dependence.[45] Social isolation is another key factor contributing to cannabis use in older adults. Older individuals experiencing isolation due to retirement, bereavement, or reduced social engagement may turn to cannabis as a coping mechanism.[46] Depression and anxiety, often linked to social isolation, further contribute to substance use risks.

Polypharmacy, the concurrent use of multiple medications, is another prominent risk factor. Cannabis may interact with these medications, leading to adverse drug reactions or dependence. It can inhibit or amplify the effects of certain drugs, such as anticoagulants and sedatives, raising the possibility of serious health consequences.[47]

### *Health consequences of cannabis hazardous and harmful use in older adults*

The physiological and cognitive changes associated with aging make older adults particularly vulnerable to the adverse effects of cannabis hazardous or harmful use. Cannabis use has been linked to both short-term and long-term cognitive impairments, including memory deficits, decreased attention, and impaired executive function.[48] These effects may exacerbate natural cognitive decline, potentially accelerating the onset or worsening of conditions such as Alzheimer's disease.[49] Chronic cannabis use has also been associated with structural changes in the brain. Long-term users may experience reduced brain volume in areas related to memory and cognitive control, which is particularly concerning for older adults.[50] Additionally, cannabis use may worsen psychiatric conditions such as depression, anxiety, and psychosis, all of which are more prevalent in older adults.[51] Cannabis-related balance impairment and dizziness increase the risk of falls, which are a leading cause of morbidity and mortality in older adults.[52] Cardiovascular health is another significant area of concern. Cannabis use has been linked to elevated heart rate, increased blood pressure, and a higher risk of cardiovascular events, such as myocardial infarction and stroke, particularly in those with pre-existing conditions.[53]

### *Cannabis use and comorbidities*

The co-occurrence of cannabis use and chronic conditions in older adults poses challenges for healthcare providers. Cannabis use may exacerbate conditions like diabetes and respiratory diseases, particularly in those who smoke cannabis.[54] Cannabis can also interact with anticoagulants and drugs affecting the central nervous system, potentially leading to excessive sedation or an increased risk of falls.[55]

### *Treatment and management of cannabis use in older adults*

Managing cannabis use in older adults requires screening, intervention, and support. Screening should be part of routine medical evaluations, particularly for those presenting with cognitive decline, falls, or psychiatric symptoms.[43] Behavioural interventions, such as cognitive-behavioural therapy (CBT) and motivational interviewing, have shown promise for managing cannabis use disorders.[56] Pharmacological treatments are under investigation but remain unapproved for cannabis use disorder specifically.[51] Education and resources are crucial in helping older adults understand the risks of cannabis, including interactions with other medications and the potential for hazardous or harmful use.[57] Given the increasing trend of cannabis use among older adults, it is essential to provide education and resources for this population. Educating patients about the potential risks of

cannabis, including interactions with other medications and the possibility of harmful use, is critical to reducing harm.[54]

## CONCLUSION

As cannabis use among older adults continues to rise, so does the risk of hazardous or harmful use and related health complications. This review highlights the importance of understanding the unique factors that contribute to cannabis use in older adults, including chronic pain management, polypharmacy, cognitive decline, and social isolation. The consequences of cannabis hazardous or harmful use can be severe in this population, ranging from cognitive impairment to cardiovascular events, and must be managed with careful, individualized approaches.

Further research is needed to better understand the long-term effects of cannabis use in older adults and to develop effective interventions for those who hazardous or harmful cannabis. Healthcare providers must remain vigilant in screening for cannabis hazardous or harmful use and providing appropriate care.

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