Prevention Strategies of Alcohol and Substance Use Disorders in Older Adults

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KEYWORDS

• Substance use disorder • Addiction • Older adults • Prevention • Screening • Assessment

INTRODUCTION

Substance use is one of the fastest-growing health problems among older adults in the United States, with nearly 1 million adults aged 65 years and older living with a substance use disorder (SUD).[1] This situation is partially attributed to the aging baby boomer generation; this population has had more exposure to alcohol, tobacco, and drugs from a younger age than any preceding generation and has been affected by shifting social attitudes regarding substances.[2,3] With the first of the baby boomer generation turning 65 in 2011, the US Census Bureau estimated that, by 2029, more than 20% of the population will be 65 years and older, causing a "gray tsunami" demographic shift.[4] Despite the increase in the number of older adults with SUDs, addiction is often undetected and undertreated in this population.[3]

According to the *Diagnostic and Statistical Manual of Mental Disorders* (Fifth Edition), the diagnosis of SUDs requires a pattern of use that causes clinically significant functional impairment. Strict use of these criteria may be problematic in older adults and requires to be individualized to identify at-risk individuals whose substance use is excessive and harmful to their physical and mental health.[5]

SUDs may be difficult to recognize in older adults owing to associated medical comorbidity, comorbid psychiatric illness, neurocognitive decline, and functional impairment associated with aging. Substance use can also complicate the course and management of existing medical problems.[6,7] Older adults with SUDs have higher hospitalization rates and acute health care costs, compared with the general population.[8]

Given the negative impacts of SUDs on the aging population, screening and prevention of substance use are critical to improve quality of life and address the public health impact of addiction in older adults.

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DISCUSSION

Impact of Substance Use on Older Adults

Alcohol

Alcohol is the most commonly used substance in older adults, with rates steadily increasing over the past years.[9,10] According to the 2018 National Survey on Drug Use and Health (NSDUH), over the past month, around one-tenth and one-fortieth of older adults engaged in binge drinking and heavy drinking, respectively. In addition, 1.6% of adults were diagnosed with alcohol use disorder.[1] Compared with other age groups, increases in alcohol use disorder and high-risk drinking were the greatest for older adults.[11]

Even though moderate alcohol consumption can have beneficial health outcomes, severe and heavy drinking in older adults has been associated with increased emergency visits and hospitalizations.[11,12] Alcohol use was also found to increase mortality in a dose-dependent fashion in older adults; the more drinks one has, the higher the risk.[13,14] Hence, there is a need to design specific prevention strategies that target this portion of the population.

Alcohol affects older individuals differently than their younger counterparts; this can be attributed to the natural physiologic changes that accompany aging.[15] These effects include a decrease in lean body mass and total body water, reduced liver function, decline in the metabolism of alcohol, and increase in blood-brain permeability and neuronal sensitivity to alcohol.[15] As such, for the same amount of alcohol consumed, older adults will experience a higher blood alcohol concentration compared with young individuals and will be at greater risk for developing unfavorable outcomes.[15] Older women are also more sensitive than men to the effects of alcohol.[16]

Acutely, drinking can impair one's judgment, coordination, and reaction putting them at an increased risk for falls, fractures, injuries, and even motor accidents; this is particularly concerning for older adults who might have a preexisting neurocognitive impairment, gait/balance problems, and decreased bone density.[16] In the long term, as older adults tend to have chronic medical problems such as cardiovascular disorders, alcohol can potentially exacerbate these conditions. Alcohol can also increase the risk of cirrhosis and impair the immune system, affecting one's ability to fight infections.[16] Furthermore, drinking can accelerate the cognitive deterioration that often accompanies aging; alcohol may also lead to confusion and forgetfulness, which is sometimes misdiagnosed as dementia.[16] Excessive alcohol use, defined as 21 or more drinks/wk, is by itself a modifiable risk factor of dementia; eliminating use starting midlife reduces dementia prevalence by 1%.[17]

Moreover, alcohol can interfere with the absorption, distribution, and metabolism of medications. This interference can lead to hazardous outcomes, especially in older adults who have high levels of polypharmacy.[18] Alcohol-drug interactions can cause lightheadedness, blood pressure fluctuations, gouty flares, and oversedation.[16] In addition, alcohol increases the risk of several malignancies and exacerbates chronic conditions such as diabetes and depression.[18]

Tobacco

Around 8.2% of older adults are smokers.[19] Although this rate is lower than that in younger adults, it remains highly associated with adverse health outcomes. Smoking and increased nicotine dependence were shown to be correlated with lower quality of life among this population.[20] Older adults who smoke have an increased risk of becoming frail and sustaining fractures.[21] Smoking in this age group is also associated with health risks different from those in younger counterparts. For younger smokers,

cardiovascular disease remains the major contributor to smoking-related mortality. Alternatively, a shift toward lung cancer and chronic obstructive pulmonary disease is observed among older smokers.[22]

Although about 300,000 smoking-related deaths occur each year among individuals aged 65 years and older, the risk diminishes in older adults who quit smoking.[19] A typical smoker who quits after the age of 65 years could add 2 to 3 years to their life expectancy. In addition, within a year of quitting, most former smokers reduce their risk of coronary heart disease by half.[19] Smoking cessation interventions implemented in midlife and late life also contribute to a 5% estimated risk reduction of dementia prevalence in older adults.[23]

Smoking cessation is the most effective tool to decrease smoking-related morbidity and mortality across all ages, even though its advantages are partially limited among older adults and may manifest at a slower pace. Older smokers are less likely to attempt, but more likely to succeed in quitting smoking.[22]

Cannabis

Cannabis is the most used substance in older adults following alcohol and tobacco.[1] Past-year cannabis use in this population sharply increased from only 0.15% in 2002 to 4.2% in 2018.[24] This increase in cannabis use is likely related to more permissive societal attitudes for recreational and medicinal uses of marijuana. Legalization across many states in the United States and the emergence of novel evidence for cannabis medicinal benefits also contribute to the increasing consumption across all age groups.[25,26]

The main indications for medical use of cannabis are weight loss, depression, anxiety, sleep disturbances, and chronic pain. These conditions are common among older adults, making cannabis use frequent in this age group.[26,27] The use of cannabis can, however, be harmful, especially in older adults,[27,28] because aging increases the effects of cannabis by the same physiologic mechanisms that increase those of alcohol.[15] While being treated with cannabis several older adults report acute adverse effects, most commonly dizziness, fatigue, and sleepiness.[27] Cannabis use can also cause paradoxic anxiety, tachycardia, and hypertension. More importantly, the risk of having a heart attack increases 4-fold following an hour of cannabis smoking.[29] In addition, cannabis use has been linked to the occurrence of cerebrovascular events such as strokes, a risk typically more prominent with aging.[30] Cannabis can also impair both short- and long-term memory,[29,31] and prolonged use has been linked to cognitive impairment and slower processing speed,[32] effects that can be more pronounced in older adults. Last, both current and former users of cannabis are at higher risk of developing a mental disorder when compared with nonusers.[33] Furthermore, the prevalence of past-year substance use is typically greater in cannabis users compared with nonusers,[1] suggesting that the harmful effects of cannabis in older adults might be partially mediated by other substances.

Prescription medications

Several studies looked into the prevalence of prescription medication misuse among older adults; prevalence rates ranged from 1% to 26%.[34] One study found that 7.7% of US adults aged 50 years and older with past-year use of prescription medication misused it.[35] Surprisingly, older adults are prescribed opioids and benzodiazepines at comparatively higher rates than other age cohorts, despite clinical recommendations that advise against this because of their harmful side effects in this age group.[36] According to the 2018 NSDUH, about 1.6 million adults aged 26 years or older misused opioids in the past year; adults aged 50 years and older were least likely to

misuse opioids.[1] Despite these findings, the NSDUH data suggest that opioid misuse is increasing among older adults. From 1995 to 2010, opioids prescribed for older adults during regular office visits increased by a factor of 9.[37] Between 2013 and 2015, the proportion of people in that age group seeking treatment of opioid use disorder increased nearly 54%, whereas the proportion of older adults using heroin more than doubled.[38]

Older adults are vulnerable to misusing prescription medications because they are more likely to be prescribed medications with misuse prospects compared with younger individuals. These medications are typically given for the management of conditions common in older adults, such as chronic pain, sleep, and anxiety disorders. Older adults are also at risk for adverse effects due to their increased fragility, reduced metabolism, and slower elimination of drugs[34]; this heightens the risk of drug-drug interactions, adverse effects, and organ damage.[35]

Prevention Strategies

Older adults with SUDs are frequently treated for both addiction and chronic health problems in an uncoordinated manner. The presence of barriers for the identification of SUDs in older adults can further impair management (**Table 1**).[5] Clinicians should be aware of the complex interaction between aging, chronic medical conditions, and substance misuse to efficiently implement a geriatric-focused approach for the management of SUDs. Many of the fundamentals of harm reduction and preventative medicine for chronic diseases intersect, such as shared decision making and patient-centered care. Most models that have integrated these principles emphasize substance use outcomes rather than health-related ones; this is where the gap in research and clinical work lies.[2,39,40]

When considering preventative measures, clinicians should initially target substances that are relatively common in older adults, particularly alcohol and nicotine. Alcohol misuse can be reduced if proper prevention and early intervention approaches are taken, especially those targeting risk and protective factors corresponding to this population. One such program is the aging services network, which delivers social and supportive aid to older adults.[41] Other population-based prevention strategies include health education programs about unsafe drinking rituals and methods to restrict

Table 1
Barriers to the identification of SUDs in older adults

	Barriers
Physician-related	Stereotypes about older adults, stereotypes about addiction, lack of knowledge about treatment[5]
Patient-related	Shame, guilt, stigma, denial[5]
Diagnostic factors	Presence of age-related changes or comorbid conditions that may obscure or be used to explain symptoms of SUDs, lower applicability of DSM-V criteria in older adults (ie, age group more susceptible to smaller amounts of substances leading to lower tolerance and subtle withdrawal, different role obligations compared with younger adults, and engagement in fewer activities regardless of SUDs)[5]

Abbreviation: DSM-5, Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition).

excessive alcohol consumption. Other strategies include preventive visits with the primary care physician, screening, and brief interventions in the primary care setting. Brief medical advice by a family physician has been shown to decrease alcohol use in older adults and alleviate potential adverse health outcomes.[42]

In terms of tobacco prevention in older adults, the field remains in its infancy. Some effective programs have been proved to be successful among this age group, including customized brief interventions which increase 1-year quit rates by more than 2-fold.[43] Community-based interventions also play an important role, with effective interventions such as increasing tobacco prices, comprehensive smoke-free policies, educational campaigns, and barrier-free access to tobacco cessation counseling and medications.[19] As clinicians typically advise older adults to quit smoking they fail to provide evidence-based strategies; physicians should be more proactive in offering or referring to evidence-based cessation treatments.[44]

In light of the opioid epidemic, prudent prescribing practices can prevent prescription drug misuse. Clinicians should be aware of a patient's history of SUDs and try to avoid prescribing medications that increase the risk for misuse or relapse. Prescription drug monitoring programs and online training programs for opiate prescribing and management of chronic pain are important resources to ensure safe prescribing.[45]

Another important target of focus is polypharmacy, a common phenomenon among older adults, particularly those with chronic medical problems.[46] Polypharmacy can increase the likelihood of adverse drug reactions, falls, and hospitalizations in older adults; it can also worsen the medical and psychological repercussions of any underlying SUD. To avoid such drawbacks, the prevention of polypharmacy is necessary and possible. For instance, one study estimated that around 1 in 5 drugs prescribed to older adults can be stopped or substituted with a safer option.[47] Therefore, clinicians must regularly discuss multiple drug usage with their patients and enquire about the intake of over-the-counter medications and herbal or vitamin supplements. The implementation of prescription drug monitoring programs remains of utmost importance.[46]

Clinical Assessment

When assessing SUDs in older adults, some general considerations apply. The assessment should include a respectful, nonstigmatizing, and nonconfrontational attitude. Older adults are more likely to offer information about potentially stigmatizing behaviors if they believe that the clinician is genuinely interested in their well-being. Clinicians should use medically accurate terms of "substance use disorder" and "unhealthy use" while refraining from discriminatory words such as "abuser" or "addict." Discussions of SUDs should always occur in the context of an overall assessment. Special considerations are recommended when treating particularly vulnerable subgroups, such as the elderly lesbian, gay, bisexual, transgender, and questioning (LGBTQ) population.[48] An inclusive and nonjudgmental approach is essential for successful treatment programs.

Moreover, clinicians should keep in mind relevant risk factors[5,49] and potential indicators for SUDs (**Table 2**).[5] The focus should be on the facts of substance use, with direct questions about nicotine, alcohol, prescription medication, and illicit drug use.

Uniform screening and detailed systematic history taking should be the norm when assessing older adults for SUDs. This approach often reduces stigma by normalizing the screening behavior for the patient.[3,5]

Table 2
Risk factors and indicators of substance use disorders in older adults

	Risk Factors	Indicators
Physical health	Chronic physical illness, chronic pain conditions, physical disability, reduced cognition[5]	Falls, bruises, burns, poor nutrition, poor hygiene, incontinence, headaches, dizziness, sensory deficits, memory loss, blackouts, disorientation, reduced cognition, idiopathic seizures[5]
Mental health	Comorbid psychiatric disorders (including posttraumatic stress disorder and adverse childhood experiences), sleep disorders[5]	Anxiety, depression, mood swings, sleep disturbances, paranoia, delusions[5]
Medications	Polypharmacy[5]	Running out of medication early, borrowing from others, increased tolerance, or unusual response to medications[5]
Social factors	Limited social support, social isolation, grief and bereavement, unexpected or forced retirement, changes in living situation[5]	Family problems, financial problems, legal problems, social isolation[5]

Screening and Intervention

Screening, brief intervention, and referral to treatment (SBIRT) for SUDs is a US nationwide, evidence-based, public health strategy to treat addiction.[50] This approach applies to older adults. Building on it, several screening instruments are available, with few designed specifically for older adults, which can help identify underlying SUDs and initiate a brief intervention or referral, as deemed necessary (**Table 3**).[2,51–55]

In cases of positive screening, several effective brief interventions centered on educating about harm and enhancing motivation for change can occur in the primary care setting. Such interventions incorporate patient feedback, brief advice, and motivational interviewing. These interventions vary in duration from 10 to 15 minutes to multiple extended sessions and seem to be highly effective in older adults.[3,5] Motivational interviewing, in particular, is a communication method that uses client-centered counseling to elicit motivation and reduce ambivalence for behavior change; it seeks to strengthen the client's motivations for change and follows a concrete plan of action in an evocative and collaborative setting. This technique was found useful for older adults within the primary care setting.[56,57]

Alternatively, those with more severe SUDs tend to require intensive treatments. These individuals should be referred to specialized professionals and advanced treatment services. Group treatments, including self-help groups, are also typically recommended for older adults. The treatment plan should always be individualized and flexible according to the specific needs of the patient.[3,5]

Table 3
Screening tools for substance use disorders in the general population and older adults

Substance	Tool	Description
Polysubstance	SUBS[53]	The Substance Use Brief Screen is a self-administered brief screener for tobacco, alcohol, and drug use validated in primary care settings. Screening positive would lead to further screening
	ASSIST[51,52]	The Alcohol, Smoking, and Substance Involvement Screening Test covers all psychoactive substances in primary care settings. This test determines a risk score for each substance. The score for each substance falls into a "lower-," "moderate-," or "high"-risk category, which determines the most appropriate intervention for that level of use ("no treatment," "brief intervention," or "referral to specialist assessment and treatment," respectively)
Alcohol	CAGE[2,51,52] CAGE-AID[2,53]	The acronym CAGE comes from the wording of the 4 questions asked; it is used in primary care to detect lifetime alcohol use disorders, with a sensitivity of 86% and specificity of 78%. CAGE-AID is the CAGE Adapted to Include Drug use
	AUDIT[2,51,52,55] AUDIT-5[53] AUDIT-C[51,52]	The Alcohol Use Disorders Identification Test is a 10-item survey that assesses alcohol consumption, drinking behaviors, and alcohol-related problems in the past year. This test has high specificity (91%) but low sensitivity (33%) in older adults. AUDIT-5 and AUDIT-C are 5- and 3-item shorter versions for primary care settings, respectively
	ARPS[a53] shARPS[a53]	The Alcohol-Related Problems Survey (60-item instrument) and the Short ARPS (32-item instrument) identify older persons whose use of alcohol alone or in combination with their comorbidities, medications, symptoms, and functional status may be causing them harm or placing them at risk for harm
	MAST-G[a51,52] SMAST-G[a52]	The Michigan Alcohol Screening Test-Geriatric Version is a 25-item instrument used if patients report regular alcohol use. Two or more "yes" responses suggest an alcohol problem. SMAST-G is a shorter 13-item version with a sensitivity of 93.9% and a specificity of 78.1%
	CARET[a2,53]	The 27-item Comorbidity-Alcohol Risk Evaluation Tool identifies older adults with specific health behaviors and risks that place them at increased risk for harm from alcohol. This tool has a sensitivity of 92% and a specificity of 51%
Nicotine	FTND[51,52] HIS[53]	The Fagerstrom test for nicotine dependence is a 10-item self-report instrument. A score of $\geq$3 is customarily suggestive of nicotine dependence. The Heavy Smoking Index is a briefer measure that includes only 2 FTND items. A high HSI of $\geq$4 is a good and briefer alternative for detecting high nicotine dependence
	mCEQ[53]	The modified Cigarette Evaluation Questionnaire is a 5-item self-report instrument that assesses the reinforcing effects of smoking cigarettes from a smoker's perspective
	CDS-12[54] CDS-5[54]	The 12-item Cigarette Dependence Scale assesses dependence with an emphasis on compulsion to smoke,

(*continued on next page*)

Table 3
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Substance	Tool	Description
		withdrawal, loss of control, time allocation, neglect of other activities, and persistence despite harm. CDS-5 is a shorter version
Opioids	SOAPP[53]	The Screener and Opioid Assessment for Patients in Pain is a self-report measure designed to assess the appropriateness of long-term opioid therapy for patients with chronic pain. A score of ≥7 indicates an increased risk of abuse
	COMM[53]	The Current Opioid Misuse Measure is a 17-item self-report instrument designed to identify patients with chronic pain taking opioids who have indicators of current aberrant drug-related behaviors. A score of ≥9 indicates medication misuse and increased risk of abuse
	DAST[51,52]	The Drug Abuse Screening Test is a 28-item self-report instrument that consists of items that parallel those of the MAST but screen for abuse of drugs other than alcohol. Cutoff scores of 6 through 11 are considered to be optimal for screening for SUDs

[a] Screening tool specific for older adults.[a]

SUMMARY

The number of older adults who engage in unhealthy substance use has been increasing. It is important to recognize the unique challenges in the identification, prevention, and screening of SUDs in this age group. Appropriate screening and the implementation of targeted prevention and intervention strategies can be key in improving insight, reducing stigma, and improving outcomes and overall quality of life in this vulnerable population.

CLINICS CARE POINTS

- Substance use is one of the fastest-growing health problems among older adults in the United States. Alcohol, nicotine, and cannabis are the most commonly misused substances in this age group.
- Clinicians should be aware of the complex interaction between addiction, chronic medical problems, aging, and polypharmacy.
- Clinical assessment should include a respectful and nonstigmatizing attitude, with screening, brief intervention, and referral to treatment when indicated.

DISCLOSURE

The authors have nothing to disclose.

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