

Substance abuse



among older adults: A growing problem

Maintaining vigilance is the key to effective recognition and treatment

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Baby Boomers—a term used to refer to individuals born in the United States between 1946 and 1964—are now approaching old age. Surprisingly, these older adults are using illicit substances in a pattern not seen in prior generations of older adults, including developing substance use disorders (SUDs) at increasingly higher rates; in previous generations, the prevalence of such disorders typically lowered with advancing age.

This article discusses how to recognize and treat SUDs in older adults. Alcohol is the most commonly used substance among older adults,¹ and there is a large body of literature describing the identification and treatment of alcohol-related disorders in these patients. Therefore, this article will instead focus on older adults' use of illicit substances, including marijuana, cocaine, and heroin.

Epidemiology

Prior clinical data regarding substance abuse in older adults focused on alcohol, prescription drugs, nicotine, and caffeine.² In the past, compared with younger adults, older adults had lower rates of alcohol and other illicit drug use.^{3,4} Baby Boomers appear to be defying this trend.

A 2013 Substance Abuse and Mental Health Services Administration survey found that the percentage of adults ages 50 to 64 who used illicit substances increased from 2.7% in 2002 to 6.0% in 2013.⁵ Specifically, during that time, past-month illicit substance use increased from 3.4% to 7.9% among those ages 50 to 54, from 1.9% to 5.7% among those ages 55 to 59, and from 2.5% to 3.9% among those ages 60 to 64.⁵

continued



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Older adults may be more likely to experience adverse cardiac events as a result of marijuana use



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Table

Risk factors for substance abuse in older adults

Physical risk factors	Psychiatric risk factors	Social risk factors
Male sex (for alcohol)	Previous substance use	Bereavement
Female sex (for prescription drugs)	History of or current psychiatric illness	Forced or unexpected retirement
White	History of alcohol problems	Living alone
Chronic pain	Avoidance coping style	Social isolation
Chronic physical illness		Lower economic status
Polypharmacy or significant drug burden		
Physical disabilities		
Poor health status		

Source: Reference 1

More recently, a 2014 study of geriatric patients found that of the 1,302 patients age ≥ 65 admitted to a Level 1 trauma center, 48.3% had a positive urine drug screen.⁶ Some researchers have estimated that 5.7 million older adults will require treatment for a substance use disorder in 2020, which is roughly double the 2.8 million who had an SUD in 2002 to 2006.⁷

Risk factors and patterns of substance abuse

Individual, social, and familial factors can contribute to substance use and abuse in late life. The *Table*¹ outlines some of the potential risk factors for older adults associated with the use of illicit substances. Substance abuse among older adults can be divided into 2 broad categories: early onset (starting before age 50) and late onset (starting after age 50).⁸ While data are limited, in general, early-onset use is a more common pattern; late-onset use represents an estimated $<10\%$ of substance use among older adults. The factors that lead some adults to continue substance use in late life, or to begin substance use later in life, have not been thoroughly evaluated.

Although older adults may abuse a wide variety of illicit substances, here we describe their use of marijuana, cocaine, and heroin.

Marijuana use has changed substantially in the last decade. While marijuana is illegal under federal law, as of November

2017, 29 states had legalized marijuana for medicinal purposes and 7 states and the District of Columbia had legalized it for recreational use. The increased legal and social acceptance of marijuana has led to new businesses and methods of use beyond smoking. New types of marijuana products include edible substances, tinctures, and oils that can be vaporized and inhaled.

In addition to euphoria and relaxation, the effects of marijuana use include increased latency time and decreased ability to respond to stimuli.² Nonpsychiatric effects of marijuana include shallow breathing, weakened immune system, and increasing cardiac workload.² The latter effect is especially important for older adults, many of whom may have preexisting cardiac illness and may be more likely to experience an adverse cardiac event as a result of marijuana use.² Older adults who begin to use marijuana in late life may do so not primarily as a social activity, but more likely to experience the drug's potentially beneficial effects on pain or appetite.² For more on the use of marijuana for these reasons, see "Medical marijuana: Do the benefits outweigh the risks?" in *CURRENT PSYCHIATRY*, January 2018, p. 34-41.

Cocaine. Although cocaine is a CNS stimulant that causes a short-lived euphoria, its adverse effects impact many body systems.⁹ Myocardial infarction (MI) secondary to coronary artery vasospasms, stroke (hemorrhagic and ischemic), seizures, psychosis,

aortic dissection, and acute renal injury are some of the most severe complications. Acute MI is the most frequent and severe cardiovascular complication seen among abusers.¹⁰ Cocaine use can cause dizziness, restlessness, headache, mydriasis, and anxiety.

In a pilot study, Kalapatapu et al¹¹ compared the effects of cocaine abuse in younger vs older users. They found that older users had similar patterns of cocaine abuse in terms of the amount of cocaine used and frequency of use.¹¹ They also found that specific cognitive functions, including psychomotor speed, attention, and short-term memory, are particularly sensitive to the combined effects of aging and cocaine abuse.¹¹

Heroin is an opioid and a CNS depressant. Common effects include slowed heart rate, decreased blood pressure, and decreased respiration rate. Chronic heroin users show an overall decrease in immune system functioning¹²; this deficit might be particularly pronounced in an older person whose

immune system functioning has already begun to decline as a result of aging. In recent years, as is the case with younger substance users, prescription opioids have replaced heroin as the opioid of choice among older users. However, for some early-onset heroin users, the use of this particular drug becomes well entrenched and unlikely to change, even in late life. Each year of heroin use increases the likelihood of continued use the next year by approximately 3%.² Some research suggests that older heroin users do not decrease their use over time, and face many of the same risks as younger users, including poorer physical and mental health, severe physical disability, and mortality.¹³

Challenges to recognizing the problem

There are no screening protocols in the clinical setting that are designed specifically for detecting illicit substance abuse among older adults. Furthermore, diagnosis can

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In older adults, symptoms of substance use could be mistaken for dementia



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Older adults may experience reduced tolerance to the effects of illicit substances because of age-related physiologic changes

be easily overlooked because the signs and symptoms of illicit substance use can be mistaken for other illnesses. To complicate matters further, older adults often do not disclose their substance use, understate it, or even try to explain away their symptoms.¹ Many older adults live alone, which may increase their risk of receiving no treatment.¹⁴

Older adults generally experience reduced tolerance to the effects of illicit substances because of age-related physiologic changes, such as decreases in renal functioning, motor functioning, and cardiac output; altered liver metabolism of certain drugs; and elevated blood glucose levels.¹⁵ As a result, symptoms of illicit substance use could be mistaken for dementia or other forms of cognitive impairment.^{1,16}

Although not designed specifically for older adults, an evidence-based screening instrument, such as the CAGE Questionnaire Adapted to Include Drugs, may be helpful in identifying substance abuse in these patients. Urine and/or serum drug screening, along with obtaining a comprehensive history from a trustworthy source, is useful for diagnosis.

Pharmacologic treatments

Research evaluating the use of medication for treating substance abuse specifically in older adults is extremely limited; studies have focused primarily on younger patients or mixed-age populations. Treatments that have been shown to be effective for younger patients may or may not be effective for older adults.

Marijuana. There are no FDA-approved treatments for marijuana abuse. An open-label study found that *N*-acetylcysteine, 1,200 mg twice a day, resulted in a significant reduction in marijuana craving as measured by the 12-item version of the Marijuana Craving Questionnaire.¹⁷ In a double-blinded placebo-controlled study, adolescents who were dependent on marijuana who received *N*-acetylcysteine, 1,200 mg twice a day, were more than twice likely to stop marijuana use compared with those who received placebo.¹⁸

Some researchers have proposed that *N*-acetylcysteine may prevent continued use of marijuana via glutamate modulation in the nucleus accumbens. Animal models have demonstrated that chronic drug self-administration downregulates the cystine-glutamate exchanger in the nucleus accumbens, and that *N*-acetylcysteine upregulates this exchanger, which reduces reinstatement of drug seeking. Further studies are needed to verify this speculation.

Cocaine. There are no FDA-approved treatments for cocaine abuse. No specific treatment approach has been found to be consistently effective.

A potential “cocaine vaccine” called TA-CD, which is made from succinyl norecaine conjugated to cholera toxin, is being evaluated. An initial study had promising results, finding a significant reduction in cocaine use among those who received TA-CD.¹⁹ A later double-blinded placebo-controlled study only partially replicated the efficacy found in the initial study.²⁰

Currently, other cocaine treatments are also being investigated. An enzyme to rapidly metabolize cocaine is being evaluated.²¹ So far, none of these treatments have targeted older adults, and there may be age-specific issues to consider if these approaches eventually receive FDA approval.

Heroin. Several FDA-approved medications are available for treating dependency to heroin and other opioids, including naltrexone, buprenorphine, and methadone, but none have been studied specifically in older adults. Some studies of transdermal buprenorphine for treating chronic pain in older adults have concluded that this formulation may offer advantages for older patients.^{22,23} Compared with oral or sublingual buprenorphine, the transdermal formulation avoids the first-pass effect in the liver, thus greatly increasing bioavailability of the drug; avoids renal metabolism; and offers greater tolerability in patients with mild to moderate hepatic impairment.^{22,23} However, transdermal buprenorphine has been approved only for the treatment of pain. These beneficial aspects of transdermal buprenorphine may be applicable to older opioid users, but no

age-specific studies of buprenorphine for treating opioid abuse have been conducted.

Nonpharmacologic treatments

The same psychotherapeutic treatments used to treat younger patients with SUDs may be appropriate for older adults. Older patients may experience feelings of isolation and shame related to needing treatment for substance abuse. These factors in treatment of older patients often are overcome by group psychotherapy. Self-help programs, such as Narcotics Anonymous or Alcoholics Anonymous, and group therapy also may be options.

On the other hand, individual psychotherapy, such as cognitive-behavioral therapy (CBT), interpersonal therapy, and psychodynamic therapy, can provide a private and confidential environment for older adults who are less social.²⁴

The highly structured nature of CBT may be well suited to older adults who

have memory difficulties.¹ A study of 110 older veterans with substance abuse problems found evidence for the effectiveness of group CBT among these patients.²⁵ All but 8 participants in this study were age ≥ 65 . The intervention consisted of 16 weekly group sessions that began with analysis of substance use behavior to determine high-risk situations for use, followed by a series of modules to teach skills for coping with social pressure, being at home and alone, feelings of depression and loneliness, anxiety and tension, anger and frustration, cues for substance use, and other factors. Approximately 44% (49 of 110) completed treatment (≥ 13 sessions). Approximately 55% of those who completed the treatment were abstinent at 6-month follow-up.²⁵

Don't assume your older patient is not using illicit substances

It is a myth that older adults do not use and abuse illicit substances. Illicit drug use

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Group therapy may help older adults overcome shame related to needing treatment for substance abuse



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The highly structured nature of CBT may be well suited to older adults with memory difficulties

Related Resource

- Drew SM, Wilkins KM, Trevisan LA. Managing medication and alcohol misuse by your older patients. *Current Psychiatry*. 2010;9(2):21-24,27-28,41.

Drug Brand Names

Buprenorphine • Buprenex, Probuphine	Methadone • Dolophine, Methadose
Buprenorphine transdermal • Butrans	Naltrexone • Revia, Vivitrol

among older adults is increasing. Older adults with SUDs may not present with the same symptoms as their younger counterparts, and thus it may be difficult to identify the problem. Maintain a high index of suspicion regarding the use of illicit substances in these patients.

Treatment options are generally limited and health care settings offer few interventions designed specifically for older adults. In general, proper identification of SUDs and targeted treatment can highly improve outcomes.

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Bottom Line

The number of older adults who use illicit substances is increasing. Screening, diagnosis, and treatment of substance use disorders in these patients may be complicated by age-related factors and a lack of evidence specific to older adults. Maintaining a high index of suspicion for substance use by older adults is essential.