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Substance Abuse Among Older Adults

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INTRODUCTION

The initial wave of the baby boom generation turned 65 years old in 2011, a generation that comprises 30% of the total US population.¹ The size of this generation and their longer life expectancies² led the US Census Bureau to project that the number of older adults will increase from 40.3 million to 72.1 million between 2010 and 2030.³ Historically, older adults have not demonstrated high rates of alcohol or other drug use compared with younger adults^{4,5} or presented in large numbers to substance abuse treatment programs.⁶ These facts have helped to perpetuate a misconception that older adults do not use or abuse mood-altering substances. Indeed, substantial evidence suggests that substance use among older adults has been underidentified^{7,8} for decades. The aging of the baby boom generation creates a new urgency to effectively identify and treat substance use among older adults.

Baby boomers are distinct compared with past generations as they came of age during the 1960s and 1970s, a period of changing attitudes toward and rates of drug and alcohol use.^{9,10} The prevalence rates of substance use disorder (SUD) have remained high among this group as they age,⁵ and both the proportions and actual numbers of older adults needing treatment of SUD are expected to grow substantially. SUD rates among people older than 50 years are projected to increase from about 2.8 million in 2006 to 5.7 million in 2020.¹¹

There is, therefore, widespread recognition among both generalists and specialists in gerontology and psychiatry,^{3,12,13} and health care overall, of the need for more information about assessment and interventions related to problematic substance use among older adults.

PREVALENCE OF SUBSTANCE USE AMONG OLDER ADULTS

Alcohol Use—Despite increasing rates of illicit and prescription drug misuse among adults older than 65 years,^{5,6,10} alcohol remains the most commonly used substance among older adults.^{6,10} Therefore, most of the research on substance use among and treatment of older adults has centered on alcohol use disorders (AUD). Among the population at large, older adults reduce their alcohol use as they age.^{14–17} As of 2002, among individuals aged 65 years and older in the general population, the estimated prevalence is 1.2% for the *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition) (*DSM-IV*) alcohol abuse and 0.24% for *DSM-IV* alcohol dependence.¹⁸ Prevalence estimates inclusive of those older than 50 years are higher (2.98% for all AUD). Within health care settings, the rates of AUD among older adults ranges up to a proportion of 22%.^{19–21} Although these rates are lower than for younger adults, they are likely impacted by the underreporting of heavy drinking,⁷ difficulties with differential diagnoses of AUDs in older adults, and unidentified comorbidities.²²

At-risk drinking is more prevalent among older adults than AUD and is likely responsible for a larger share of the harm to the health and well-being of older adults. Guidelines provided by the American Geriatrics Society and the National Institute for Alcohol Abuse and Alcoholism recommend that older adults drink no more than 7 standard drinks (12-oz beer, 4- to 5-oz glass of wine, 1.5 oz of 80-proof liquor) per week.^{10,16} Prevalence rates for older-adult at-risk drinking (defined as more than 3 drinks on one occasion or more than 7 drinks per week) are estimated to be 16.0% for men^{23,24} and 10.9% for women.^{20,21} There is also a substantial proportion of the older-adult population who are binge drinkers (generally defined as 5 or more standard drinks in one drinking episode, though definitions vary for older adults).²⁵ Rates of older-adult binge drinking are 19.6% for men and 6.3% for women using data from the 2005–2006 National Survey on Drug Use and Health.^{20,26} In a study of community-based older adults who reported drinking one or more drinks in the previous 3 months, 67% reported binge drinking in the last year.²⁵

Tobacco Use—Tobacco use is quite prevalent among older adults, with about 14% of those aged 65 years and older reporting tobacco use in the last 12 months,¹⁰ and just more than 6% used tobacco and alcohol together in the last 12 months. Clinical trials examining smoking cessation interventions demonstrate that older-adult smokers tend to be long-term, heavy smokers who are also physiologically dependent on nicotine.^{27–29}

Illicit Substance Use—Illicit drug use is more prevalent among American older adults than among older adults in almost any other country in the world.³⁰ Results from the 2012 National Survey on Drug Use and Health revealed that rates of past month use of illicit substances doubled on average (from 1.9%–3.4% to 3.6%–7.2%) among 50 to 65 year olds between 2002 and 2012⁵—a statistically significant increase driven by the baby boom generation.^{5,11} Generally, individuals aged 50 to 64 years report more psychoactive drug use

than older groups.^{24,31,32} For example, in 2012, 19.3% of adults aged 65 years and older reported having ever used illicit drugs in their lifetime, whereas 47.6% of adults between 60 and 64 years of age reported lifetime drug use. Among those that do use illicit substances, 11.7% meet the criteria for past-year SUD.³¹ There are no recommendations for safe levels of illicit drug use among older adults.³³

Cannabis use by older adults is considerably more prevalent than other drugs. Among adults aged 50 years and older in 2012, 4.6 million reported past-year marijuana use, and less than one million reported cocaine, inhalants, hallucinogens, methamphetamine, and/or heroin use in the past year. These rates are consistent with those reported by other studies.^{24,31} With the passage of medical marijuana legislation and relaxed enforcement of drug possession related to marijuana, the prevalence rate of use among older adults may increase as they use it to cope with illness-related side effects,²⁰ potentially facilitating an increase in recreational use.

Prescription, Nonprescription, and Over-the-Counter Medication Use—Older adults take more prescribed and over-the-counter medications than younger adults,^{22,34} increasing the risk for harmful drug interactions, misuse, and abuse. A cross-sectional community-based study of 3005 individuals aged 57 to 85 years found that 37.1% of men and 36.0% of women used at least 5 prescription medications concurrently.³⁵ The study also found that about 1 in 25 of the participants were at risk for a major drug interaction, and half of these situations involved nonprescription medications. In 2012, 2.9 million adults aged 50 years and older reported nonmedical use of psychotherapeutic medications in the past year.⁵ Estimates of prescription medication misuse among older women are 11%.³⁶ Blazer and Wu³² reported that 1.4% of adults aged 50 years and older used prescription opioids nonmedically in the last year, which was higher than sedatives, tranquilizers, and stimulants (all <1%). Actual prescription opioid use disorder among this same group was 0.13%, yet dependence was more common than abuse.³¹ Benzodiazepines are the most commonly prescribed psychiatric medication among all adults. Despite contraindications for use with older adults, they are widely prescribed³⁷ and are disproportionately prescribed to older adults.³⁸ Rates of benzodiazepine use among older adults have ranged from 15.2% to 32.0%.³⁹ It is important to note that the rates of benzodiazepine use may be impacted by overprescription, misdiagnosis, or polypharmacy rather than intentional misuse or abuse.

UNIQUE VULNERABILITIES FOR OLDER ADULTS USING MOOD-ALTERING SUBSTANCES

Although the rates of SUD and use of drugs and alcohol are generally lower among older adults than the general population, aging itself presents specific risks for harm when considering even minimal amounts of substance use among older adults. Risk factors may vary considerably by substance and the specific clinical presentation of a patient (eg, age, medical comorbidities, current medications, and health history). Understanding substance-specific risks can help practitioners to recognize and respond to unhealthy use that does not meet the narrow definition of problem use.

Alcohol

Alcohol has a unique physical impact on the body in late life as compared with adults in young to middle age.⁴⁰ As one ages, the percentages of lean body mass and total body water decrease, and the ability of the liver to process alcohol is also diminished; blood-brain barrier permeability and neuronal receptor sensitivity to alcohol in the brain increase.²² Because of these changes, older adults experience higher blood alcohol concentrations and increased impairment compared with younger adults⁴⁰ at equivalent consumption levels and with less awareness of their impairment,^{41–43} thus, rendering them more vulnerable to the ill effects of alcohol even in moderate amounts. Compared with moderate drinkers, older-adult at-risk drinkers are more likely to experience alcohol-related problems^{14,25} and basic functional impairment, such as impaired instrumental activities of daily living (eg, shopping, cooking, responsibility for medication).²⁵ The increased rate of comorbid medical and psychiatric conditions and the medications used to treat them create a complicated picture of risk and unique vulnerabilities for older adults.¹⁰ Even healthy drinking levels established in young to middle age and then sustained through older age may be a risk factor for health problems among older adults.⁴⁴

Despite the older person's increased vulnerability to alcohol, moderate alcohol consumption is associated with decreased morbidity and mortality among older adults.^{45,46} A large body of research suggests that those older adults who are moderate drinkers (no more than one standard drink per day) experience better health than their heavier drinking and abstinent peers.^{47–49} For example, moderate-drinking older adults have been discovered to have fewer falls, greater mobility, and improved physical functioning when compared with nondrinkers.⁴⁰

It is important to note that many of the health benefits of moderate alcohol use for older adults may come with negative trade-offs. For example, moderate drinking may decrease the risk of ischemic stroke but increase the risk of hemorrhagic stroke⁵⁰ and have many potential interactions with medications.⁵¹ As with other age groups, it would seem that the benefits of alcohol for older adults varies across individuals and depends on each person's unique biopsychosocial context, including age, comorbid illnesses, sex, and genetics.

Medications and Illicit Drugs

The same biologic changes that increase the effect of alcohol among older adults also increase the effect of medications and illicit drugs, causing an increased vulnerability to drug effects and drug interactions.²² For example, older adults process benzodiazepines and opiates differently than younger adults; these medications should be prescribed with caution. Benzodiazepines with long half-lives are contraindicated for older adults as they can cause excessive sedation.³⁶ Benzodiazepines are fatsoluble drugs; as adults have less lean muscle mass and more body fat as they age, these drugs have a longer duration of action. Other risks associated with medication use in older adults occur because they may see multiple doctors, each of who may prescribe them medications that may interact with each other and/or with alcohol or other substances. Alcohol and marijuana increase the sedative effects of drugs such as barbiturates, benzodiazepines, and opiates.⁵² Older adults may also unintentionally misuse a medication by borrowing a prescribed medication from another person (eg, taking

a dose of another person's lorazepam or zolpidem for sleep), taking more than intended, or confusing pills.

The increasing acceptance of marijuana use, both medicinally and recreationally, may also pose unique risks in an aging population. Marijuana is known to cause impairment of short-term memory; increased heart rate, respiratory rate, elevated blood pressure; and a 4-time increase in the risk for heart attack after the first hour of smoking marijuana.⁵³ These risks may be pronounced in older adults whose cognitive or cardiovascular systems may already be compromised. Additionally, tobacco use among older adults is associated with greater mortality, risks of coronary events and cardiac deaths, smoking-related cancers, chronic obstructive pulmonary disease, decline in pulmonary function, development of osteoporosis, risk of hip fractures, loss of mobility, and poorer physical functioning.^{54,55} Incidentally, smoking also impairs or inhibits effective treatments for these conditions.⁵⁶ It is unclear which of these correlates to smoking tobacco also appear for marijuana.⁵³

RISK FACTORS FOR OLDER ADULTS USING SUBSTANCES

Most research on the correlates and predictors of substance use in late life has been conducted on alcohol use. Individual, social, and familial factors that contribute to or are associated with late-life unhealthy drinking may also apply to other substances. Box 1 lists some of the potential risk factors for older adults associated with use of alcohol and, where known, other substances.

Demographics

Being male,²³ more affluent,^{20,57,58} Caucasian,^{23,59} and young-old (those in the early stages of late life)²³ are consistently associated with unhealthy drinking in late life. Among all the demographics that are associated with increased drinking, only one is a predictor of increased drinking in older age: having more financial resources or longer financial horizons.^{57,58} Female sex is associated with prescription drug abuse.³⁶

Physical and Mental Health

Both current alcohol use and unhealthy drinking in older age are associated with being in better overall health^{23,57}; however, this does not imply a causal relationship but rather suggests that those in good health are apt to drink more than their counterparts in poor health. Indeed, drinking has been shown to decrease as hospitalizations, disabilities, or depression increase.^{23,60,61} Importantly, across studies, older heavy drinkers demonstrate poorer physical and mental health^{23,40,61,62} as compared with their low-risk drinking counterparts. Drinking to reduce pain is a crucial long-term predictor of alcohol use in older adulthood.⁵⁸

Because comorbid psychiatric disorders, such as anxiety, depression, and personality disorders, are common and recognized among younger adults, it is assumed that these comorbidities also continue into late life. Although there is little research about psychiatric comorbidity with substance use among older adults, some evidence suggests there is a high correlation between substance use, specifically alcohol use, and depression^{63,64} and other affective disorders^{33,65} among older adults.^{66,67} The co-occurrence of depression and AUD

can greatly complicate the diagnosis and treatment of both. For example, older adults may be more likely to disclose depressive symptoms and present to primary care settings rather than mental health or substance abuse treatment settings.

Sleep disturbance and sleep disorders are common among older adults who use alcohol⁶⁸ and who may use alcohol as a sleep aid.³³ Concurrent use of alcohol and medications for insomnia is risky because of drug interaction effects that cause excessive sedation and cross-tolerance. The factors associated with prescription medication abuse in older adults include a history of a SUD or mental health disorder and medical exposure to prescription drugs with abuse potential.³⁶ There is also evidence to suggest that overall cognitive impairment and several different types of dementia are more prevalent among older adults with comorbid alcohol use disorders^{22,25,69,70} and that the differential diagnosis between Alzheimer disease and alcohol-related dementia is difficult.³³

Among comorbid SUD, alcohol and tobacco are used commonly together among older adults¹⁰; being a smoker increases the likelihood of being an at-risk drinker.⁷¹ Little else is known about the use patterns among older adults and the use of multiple substances simultaneously.

Coping Style

An individual's coping style for stress or tension may predict the development of a drinking problem in late life. An analysis of the Health and Retirement Study revealed that individuals who relied on avoidance coping to deal with stress or solve problems had a greater likelihood of developing and maintaining a late-life drinking problem than those who coped in other ways.⁵⁷ Similarly, a community-based survey of older adults who had contact with an outpatient health care facility found that relying on substances to reduce tension was associated with having a late-life alcohol problem.⁷²

History of Alcohol Problems

There are a few studies that identified a history of problem drinking as a risk factor for unhealthy drinking among older adults. Platt and colleagues⁵⁷ found there was a significant increase in the likelihood of increasing one's drinking in later life among older adults with a history of drinking problems who did not abstain. Another longitudinal study of a community-based sample found that having drinking problems by 50 years of age significantly increased the likelihood of drinking and/or unhealthy drinking in late life.⁵⁸

Social Factors

Some social factors are consistently associated with late-life drinking. Being divorced, separated, or single is positively associated with increased or unhealthy drinking in late life,^{10,23} though this may differ across sexes. Social contact with friends or close family members among residents of retirement communities was found to be associated with increased alcohol use.⁷³ In this same study, a lack of religious affiliation was also found to be associated with higher categorical levels of drinking, each of which were defined by an increase in quantity and frequency of drinking. Although increased social interaction is

associated with drinking among older adults, social isolation is associated with prescription drug abuse.³⁶

Certain life events and social transitions common in late life may also heighten the risk of substance use or misuse. For example, bereavement (death of spouse, family, or friends), physical ill health, loneliness, caregiving for an ill spouse, change in living arrangement, and loss of occupation can all be factors in the substance use of older adults.^{74–77} A review of the impact of retirement on older-adult drinking revealed that preretirement conditions, such as high job satisfaction or workplace stress, seem to increase the overall use of and problems with alcohol after retirement.⁷⁸ In addition, involuntary retirement and broadened social networks after retirement increase the likelihood of increased alcohol consumption or drinking problems.^{78,79} Finally, housing status or living situation can facilitate or sustain substance use. For example, homelessness has been found to be a correlate of late-life drinking problems^{69,80}; substance use among older adults has also been found to continue and even be enabled in the context of nursing homes.^{81–83}

DIAGNOSIS

The formal diagnosis of SUD in the general population generally relies on the criteria outlined by the *DSM*.^{84,85} Table 1 outlines several symptoms of SUD based on physical and/or social factors. Because of particular biologic and social factors unique to late life, these criteria may be less relevant to older adults. This circumstance presents unique challenges for an accurate diagnosis of SUD among older adults.¹⁶ For example, because of the age-associated physiologic changes that increase the effects of alcohol and other substances, older adults generally experience a reduction of tolerance to these substances, thus interfering with one of the hallmarks of SUD, increased tolerance. Furthermore, interruption in social and vocational roles or other consequences of drinking or drug use may be less likely to occur or less noticeable in old age.^{44,86} Aging is often associated with a natural departure from these roles, such as through retirement⁷⁸ or social isolation caused by mortality of age-group peers.⁸⁷ Furthermore, the criterion related to continued use despite persistent or recurrent problems may not apply to many older adults who do not recognize that their problems, such as depression, are related to drinking.¹⁶

Using the Item Response Theory with 2009 National Survey on Drug Use and Health data, one study explored whether there were age-related biases among the criteria for AUD.⁸⁶ The findings revealed that there were differential responses among older versus middle-aged adults, such that older adults were half as likely as middle-aged adults to endorse the criteria related to tolerance, activities to obtain alcohol, social/ interpersonal problems, and physically hazardous situations. The criteria that were most successful in discriminating AUD among older adults were unsuccessful efforts to cut back, withdrawal, and social and interpersonal problems. With the release and adoption of *DSM-5*, a wider proportion of older adults will likely be classified as having SUD than under the *DSM-IV* criteria; however, a large proportion will likely remain unidentified.⁸⁶

As a result of these diagnostic problems, many who study substance abuse in older adults de-emphasize the reliance on *DSM* criteria to identify problematic substance use requiring

intervention. Instead, they use a 2-tier categorical classification: at risk and problem use of substances (Table 2).¹⁶ At-risk substance use (also referred to as excessive use or hazardous use)³³ is characterized by those who use substances above the recommended or prescribed levels but who experience few or no physical, mental, emotional, or social problems as a result of use. These individuals may be at high risk for the development of such problems and, therefore, still merit thorough screening and secondary prevention.

Problem substance use is characterized by those individuals who are already experiencing problems in the aforementioned areas as a result of their use. Identification of problem use among older adults does not depend on the quantity and frequency of use but on the context in which substances are used. For example, older adults may experience extreme problems with alcohol even when ingesting it at minimal levels because of medical conditions, such as gout or pancreatitis. Although the terms *at risk* and *problem use* are extremely useful in settings such as primary care, they can pose difficulties in helping older adults access more formal treatment, as third-party payers often require formal SUD diagnoses to justify intensive or more lengthy treatments.

SCREENING AND ASSESSMENT

Historically, older adults are less likely to be screened for substance use.^{88,89} For example, in a study of 400 primary care physicians who were provided with a list of symptoms related to problematic substance use by a hypothetical older female patient, only 1% of physicians considered the possibility of a substance use problem.¹⁶ Although there is an increasing acceptance that older adults should be routinely screened for alcohol and other drug use or misuse,^{3,12,35} there are several factors that still inhibit screening and subsequent identification of risky alcohol or other drug use, including the limited time clinicians have to screen for several potential problems or illnesses; the potential stigma related to and discomfort assessing for addiction; the similarities of the symptoms of alcohol and other drug use with other illnesses common in later life^{69,90}; and the common perception among older adults that symptoms experienced by the use of alcohol or drugs are seen as a part of normal aging rather than resulting from the substance use itself.⁹¹ Furthermore, older adults are known to have difficulty identifying their own risky behaviors around substance use,⁴² making the identification of such behavior even more difficult.

Overall Considerations

When assessing or speaking to older adults about substance use, some general considerations should apply. Older adults are known to respond more to a supportive, nonconfrontational approach than more assertive styles of assessment and intervention.^{92–94} Older adults are far more likely to provide information about potentially stigmatizing behaviors if they think that the clinician is genuinely interested in their overall health and well-being.^{44,90} Discussions of alcohol and other substance use should occur in the context of an overall assessment and in reference to the presenting problem with the goal of health promotion and a complete understanding of their health behaviors. Approaching the assessment with the goal of identifying a drug abuser is likely to stigmatize the older adult, engender defensiveness, and is inconsistent with the idea that any drug or alcohol use has the potential to be problematic.⁴⁴ Therefore, in a gentle and respectful manner, detailed

questions about quantity and frequency of drinking, medications (prescription and over the counter), and illicit drugs (especially marijuana) should be asked with the assumption that this information is important, whether the older adults' use is a problem or not. This reduces stigma by normalizing the behavior without endorsing it.

Many older adults, and even their families, view alcohol use as being their "one last pleasure,"⁸³ creating a complex picture of substance use in late life. In a study of alcohol-dependent older adults at a Veteran Affairs medical center, older adults were found to be less strongly motivated to change their drinking than their younger counterparts, as they did not perceive their alcohol use as being particularly severe.⁹⁵ For some older adults, a foreshortened sense of future may further inhibit motivation to reduce alcohol use. In addition, self-efficacy to reduce drinking may decline with age,⁹⁶ depending on the level of control an older adult perceives in his or her life.⁹¹ In addition, low self-efficacy is related to fewer health-promotion behaviors among older adults because they perceive their physical limitations as an unavoidable component of aging.⁹¹

Box 2 reviews the potential symptoms or indicators of problematic substance use.

Assessments should start with questions about drinking, medication use, and illicit substances. The focus should be on the facts of substance use rather than questioning the person's judgment (eg, do you have a drinking or drug use problem?).⁴⁴ During this discussion, questions about overuse and misuse can be included in a nonjudgmental way.⁴⁴ For instance, asking a patient whether they sometimes take an extra pill to fall asleep or to cope with pain, run out of medication early, or borrow medications from others may provide important information and a gateway to further discussion about problematic use of substances.⁴⁴ It should be noted that even if the older adult is currently abstinent from alcohol and other drugs, questions about use or misuse in the past are also important, as the answers may indicate increased vulnerability to other psychiatric disorders or cognitive decline.³³

Screening Tools

Brief screening instruments can assess the level of risk caused by alcohol and drugs. Some screening tools are adaptations of instruments created for younger adults, and others have been designed for older adults. Interview screening tools or global selfreport measures are less intrusive or burdensome to the older adult than blood or urine tests. Furthermore, the use of biologic screening (ie, laboratory tests) has limited utility and can be problematic in older adults, as isolating impaired bodily functions (ie, liver function) as the result of alcohol or other substances versus prescribed medications may be difficult. Each of the instruments listed next have strengths and weaknesses related to resources required to implement them or applicability to older adults.

CAGE-Adapted to Include Drugs (CAGE-AID)

The most common screening tool for substance misuse is the CAGE questionnaire, which focuses on the potential for alcohol dependence. The CAGE was later adapted to assess for

alcohol *and* other drugs and called the CAGE-AID.⁹⁷ The CAGE-AID contains the following 4 questions:

1. Have you ever felt that you should **C**ut down on your drinking or drug use?
2. Have people **A**nnoyed you by criticizing your drinking or drug use?
3. Have you ever felt bad or **G**uilty about your drinking or drug use?
4. Have you ever had a drink or used drugs first thing in the morning to steady your nerves or to get rid of a hangover (**E**ye opener)?

The questions can be adapted to a specific substance, such as a prescription medication, and they can be asked either in the context of an interview or self-administered. One or more positive responses are considered a positive screen. Psychometric properties of the CAGE-AID have not been reported, yet the CAGE has been extensively studied. The CAGE has been validated in an older-adult population, demonstrating as high as 86% sensitivity and 78% specificity for a score of one or more^{56,98}; however, the CAGE may identify a different group of drinkers than other measures, such as the Short Michigan Alcoholism Screening Test–Geriatric Version (SMAST-G), and it does poorly in detecting heavy and binge drinkers.⁹⁹ Furthermore, it has not performed well in the psychiatric population.¹⁰⁰ A major limitation of the CAGE-AID is that it does not distinguish between current and lifetime use, an especially difficult issue among the aging, who may have a history of problematic use without having a current problem. Because of the brief nature of the CAGE-AID, it can be a useful screening tool; but it should not be a substitute for a more thorough assessment, such as consumption levels, consequences of use, and functional deficits.

The Michigan Alcohol Screening Test–Geriatric Version

The Michigan Alcohol Screening Test–Geriatric Version (MAST-G)¹⁰¹ is an instrument designed to identify drinking problems and was developed specifically for the elderly by modifying the Michigan Alcohol Screening Test. This screening tool contains 24 questions with yes/no responses; 5 or more positive responses indicate problematic use. The MAST is highly sensitive and specific and generally has strong psychometric properties.¹⁰² It is also administered in a short form, the SMAST-G, which has 10 questions, with 2 positive responses indicating a problem with alcohol. Because of the diagnostic challenges outlined earlier, the MAST-G focuses more on potential stressors and behaviors relevant to alcohol use in late life, as opposed to questions toward family, vocational, and legal consequences of use. This tool has many of the advantages of the CAGE, such as ease of administration and low cost. It is also more specific than the CAGE in identifying problematic use. Although useful as an indicator of lifetime problem use, it lacks information about frequency, quantity, and current problems important for intervention.

The Alcohol Use Disorders Identification Test

Developed by the World Health Organization (WHO), the Alcohol Use Disorders Identification Test (AUDIT) assesses for current alcohol problems.¹⁰³ The test consists of 10 questions pertaining to amount and frequency of use, alcohol dependency, and the consequences of alcohol abuse; it can be administered through an interview or self-

administered. Each of the 10 questions is scored on a 4-point continuum, with total scores ranging from zero to 40. The AUDIT was validated in older adults to detect problematic or hazardous use.¹⁰⁴ Although the cutoff threshold to indicate AUD among a general population is 8, a cutoff threshold of 5 was identified to indicate AUD among older adults.^{100,105} Five items on the AUDIT (items 1, 2, 4, 5, and 10) are particularly sensitive and specific to AUD among older adults and together have outperformed the full AUDIT and the CAGE.¹⁰⁵

The Alcohol, Smoking, and Substance Involvement Screening Test

The Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) is another instrument developed by the WHO to screen across substances for potential problem use.¹⁰⁶ It is an interview-based tool that consists of 8 questions that help identify the level of risk to help guide decisions for intervention. The ASSIST has yet to be validated among older adults, and there is at least anecdotal evidence that it underperforms in this population in part because of the same limitations with a formal *DSM* diagnosis; the criteria do not apply in the same way for older adults as they do with younger adults.

The Comorbidity-Alcohol Risk Evaluation Tool

The Comorbidity-Alcohol Risk Evaluation Tool (CARET)¹⁰⁷ is a screening instrument whose precursor is the Short Alcohol Related Problems Survey.¹⁰⁸ It identifies older adults who are at risk because of the quantity and frequency of their alcohol consumption, presence of comorbid diseases, high-risk behaviors (such as drinking and driving), and concomitant use of medications whose efficacy may be diminished or that may interact negatively with alcohol. It has demonstrated good face, content, and criterion validity with older adults.^{107–109} One of the strengths of the CARET is that it identifies hazardous alcohol use apart from simply the quantity and frequency of drinking, accounting for a wider spectrum of unhealthy use that could present dangers more common in later life. As a result, the CARET identifies at-risk or problem alcohol use among older adults with more sensitivity than the AUDIT and the MAST-G.¹⁰⁷ Most older adults identified as at-risk drinkers using the CARET are identified as such because of their use of alcohol with medications.¹¹⁰

INTERVENTIONS

A continuum of treatment options are available for older adults, depending on the setting and the severity of the problems indicated.⁴⁴ Contrary to the assumption that older substance users are stuck in permanent patterns of use, older adults have demonstrated treatment outcomes as good, or better, than those seen in younger groups^{111,112}; however, access to specialized services tailored for older adults is limited. A national survey of substance abuse treatment programs found that only about 18% were specifically designed for older adults.^{44,113} Even if programs were available to them, overall, mental health utilization rates are lower among older adults than any other age group.³⁹ Some of the barriers to specialized treatment that older adults face include stigma and shame surrounding substance use and related problems, geographic isolation, inability to pay, or difficulties with transportation.^{16,114} Interventions in nontraditional settings, such as emergency rooms,

senior centers, and primary care offices,^{44,115} have been implemented in an attempt to reach vulnerable older adults outside the formal treatment system.

Because, in part, of the relative invisibility of older-adult substance use and SUD, relatively little published research exists on the efficacy and/or effectiveness of substance abuse treatment of older adults.¹¹² In a recent review of research on substance abuse treatments for older adults,¹¹² the researchers found a relative absence of published, rigorous, internally valid research. Therefore, the review of interventions discussed later is of those treatments for which there is some initial evidence of efficacy and/or effectiveness among this population.

Brief Intervention

Effective brief interventions^{110,116,117} occur in primary care settings, focus on alcohol and prescription medication misuse or abuse, and vary in length from 15 minutes to five 1-hour sessions.^{90,112} Their purpose is to provide education about the substance and how it might be harmful, enhance motivation for change, and connect severe users with more intensive treatments,⁴² when necessary. Normative feedback, in which a patient's drinking is compared with his or her peers, combined with brief advice is one of the most common brief interventions used and seems to be highly effective for older-adult drinkers.^{19,112,117}

Most brief interventions are described as using aspects of motivational interviewing (MI)¹¹⁸ or motivational enhancement therapy (MET),¹¹⁹ which encourages a client-centered, nonjudgmental approach to discussing substance use and encouraging positive, healthy changes to the individual's life. Formal MI and MET aim to reduce ambivalence by assisting the client to identify in his or her own words the perceived pros and cons to making a change versus maintaining the status quo.⁴⁴ For the older adult, the reasons for change may include maintaining independence, optimal health, and mental capacity.⁹⁰ Although MI and MET are consistent with a nonconfrontational supportive approach, there is little evidence to suggest that formal MI works with older adults in regard to substance use. No studies among those that contributed to establishing MI as an evidenced-based practice included individuals older than 62 years.¹²⁰ Some studies demonstrate efficacy of MI with older adults targeting other health behaviors,¹²¹ including smoking cessation¹²²; some evidence suggests that it works in the context of case management to engage older adults in more formal treatment.¹⁹ Rigorous controlled trials of older adults and MI, or any other treatment, have yet to be conducted.

Pharmacology

A growing number of pharmacologic treatments can be used for SUD. Most of the research to date with older adults has been done on medications treating smoking cessation and alcohol use. Disulfiram, acamprosate, and naltrexone are medications approved by the Food and Drug Administration that are used to treat SUD; other medications, such as varenicline, are just emerging. Medication options for older adults are more limited than those in the general population, as evidence is lacking still about the efficacy and safety for some of these medications for an older population. Disulfiram is an aversive agent that increases the ill effects of alcohol ingestion by increasing acetaldehyde levels.¹²³ Although it has been

used with adults older than 50 years with some benefit,¹²⁴ it has limitations. Disulfiram is only useful with strict adherence to the medication. There is also evidence that it places extra strain on the cardiovascular system within older adults and, thus, may be contraindicated.¹²³

Acamprosate is an NMDA and GABA receptor modulator used to reduce craving and the pleasant effects of alcohol.^{123,125} No trials have been conducted to examine the efficacy of acamprosate for individuals aged 65 years and older. Because of the few reports of adverse effects across populations, it is considered relatively safe among older adults.¹²⁶ In younger adults, 2 to 3 g of acamprosate is the recommended dose¹²³; it has been tested in trials of 16 weeks¹²⁷ to 1 year in length.¹²⁸

Naltrexone is the most well-studied medication used for SUD treatment among older adults,¹¹² and it has demonstrated some effectiveness with this population. Naltrexone is an opioid receptor antagonist thought to reduce craving and the pleasurable or stimulating effects of alcohol by blocking alcohol-induced dopamine release in the brain.¹²³ It can be taken daily or as needed, although only daily treatment of naltrexone has been tested with older adults. The standard dose of naltrexone is 50 mg, but some studies have investigated its effects at larger doses (eg, 100 mg). The major limitation of naltrexone in an older-adult population, many of whom have chronic pain, is that it blocks the effect of opiate-based pain medications. It can also potentiate preexisting major depressive disorder symptoms. Patients with histories of comorbid depression should be closely monitored.

Two randomized controlled trials examined the impact of naltrexone versus placebo on older adults.^{129,130} In one study, 44 male veterans aged 50 years and older were randomly assigned to 50 mg/d of naltrexone or placebo and followed for 12 weeks.¹²⁹ In addition to the medication, each participant also received weekly group therapy and case management. There were no significant differences between medication conditions on abstinence or relapse rates; however, among those individuals *exposed to alcohol*, older adults on naltrexone were significantly less likely to relapse than those on placebo. In a study of 183 adults,¹³⁰ two-thirds of the subjects were randomly assigned to receive 100 mg of naltrexone and one-third to placebo during 3 months of treatment. All participants received a medication management intervention with qualities similar to age-specific treatments, such as a nonconfrontational style.¹³¹ In a post hoc analysis, participants were divided into 2 age groups: 21 to 54 year olds and those 55 years old and older.¹³⁰ Older adults demonstrated significantly greater rates of treatment engagement and medication adherence than the younger adults; however, only a trend level difference was found in medication effects between older and younger adults. Small sample sizes of older adults may have impeded the ability to detect significant main effects in both studies.

Varenicline is a nicotinic agonist that is a now widely used to aid smoking cessation.^{132,133} It has also recently been applied to alcohol dependence in a similar fashion as naltrexone.¹³⁴ Although there are relatively few studies on varenicline with alcohol, existing studies demonstrate a reduction in drinking overall¹³⁵ or a reduction in heavy drinking¹³⁴ among a general population. No research yet exists on its effect with older adults.

Case Management

Case and care management models, which are offered in primary care settings or community-based agencies, take advantage of nontraditional settings to engage older adults in reducing their use and/or connecting them to treatments.⁴⁴ These interventions offer several advantages to an older-adult population. First, they provide a comprehensive approach by addressing the complexity of medical and psychiatric comorbidities common in this population^{16,90} while also connecting isolated older adults to needed community resources. Another advantage of these interventions is that substance use interventions are embedded in a broad approach to addressing health, lessening stigma, and also working toward a likely common goal among older adults: overall better health.¹⁶ Program evaluations of this model support the notion that case management is an important tool in working with this population.^{136–140} Case management models may be particularly effective at engaging and maintaining older at-risk drinkers in treatment.¹³⁸

Types of Care Available in the Formal Treatment System

As with younger populations, formal substance abuse treatment of older adults is provided on a continuum of intensity depending on problem severity, ranging from detoxification to outpatient treatment or aftercare.⁴⁴ All treatment plans should be individualized and flexible according to the specific needs of the client. Because of the unique issues facing older adults, both individual and group treatments are recommended. Although group treatment can reduce isolation and shame related to substance use and is often the preferred method of providing substance abuse treatment, the lack of elder-specific treatment available in the community¹¹³ may actually enhance feelings of isolation and shame in a group context. Older adults may not easily relate to or feel uncomfortable discussing their problems with younger persons. Individual therapy provides a private and confidential forum for older adults to explore their unique issues, without these same risks.

Two psychosocial and psychotherapeutic approaches have been explored specifically in the context of older adults: supportive therapy models (STM)¹⁴¹ and cognitive-behavioral therapy (CBT).^{92–94,142,143} STM represent traditional treatment with age-specific modifications. Twenty-five years ago, STM approaches arose out of a concern about whether older adults could effectively engage in standard treatment.¹⁴¹ It was observed that confrontational approaches were ill suited and disrespectful to older adults and that the unique issues faced by older individuals, including health conditions, depression comorbidity, and social isolation, went unaddressed.¹⁶ Although it is now widely accepted that confronting denial in any individual about their drug or alcohol use is ineffective in helping individuals modify their behavior to be more healthy,¹¹⁸ STM were designed to focus on developing a culture of support and successful coping for older-adult substance abusers; supportive therapies concentrate on building social support, improving self-esteem, and taking a global approach to treatment planning through addressing multiple biopsychosocial arenas in the client's life.⁴⁴ Although there has been relatively little research on age-specific treatments incorporating these techniques, there is at least some evidence that older adults demonstrate better outcomes in these settings than in nonadapted settings.^{112,141,144}

CBT focuses on identifying and altering sequences of thinking, feeling, and behaving that lead to problem drinking or drug use.¹⁴⁵ CBT can be delivered individually or in group settings, and there is strong evidence for positive outcomes across populations and age groups.¹⁴⁶ There is also evidence for the effectiveness of CBT with older adults,^{92–94,142,143} and the Substance Abuse and Mental Health Services Association published a CBT treatment manual specific to substance-using older adults.¹⁶ The highly structured, didactic approach taken in CBT may be particularly helpful to older adults because of the tendency to present with memory difficulties.¹⁶ Finally, CBT interventions have outperformed nicotine replacement therapies among older adults participating in a smoking cessation program.²⁷

SELF-HELP GROUPS

Alcoholics or Narcotics Anonymous and their related groups can be useful to older adults in reducing isolation, shame, and stigma,⁴⁴ though there have been no systematic studies on the effects of these groups on older adults.¹⁴⁷ Older adults may encounter the same barriers to participation in self-help groups as they do with formal treatment: primarily stigma and shame of needing to attend to these issues in late life in the presence of a younger generation. Older generations of older adults whose primary substance is alcohol may also experience more discomfort in attending meetings that include younger polysubstance users,¹⁴⁷ though this may be less of an issue for baby boomers. Furthermore, specific meetings may be more or less suited to older adults given the variation in the pace of meetings and the general focus of the group. Some experts have recommended traditional self-help groups be modified for older adults, such as slowing the pace of the meeting to reflect cognitive changes in aging and devoting attention to handling losses and extending social support.¹⁴⁸ Being aware of elder-friendly meetings in the geographic area may be helpful for intervening with older adults. When referring to self-help groups, it is also important to encourage older adults to try more than one meeting before deciding whether it is a good fit because each meeting has a unique tone and feel.

SUMMARY

The myth that older adults do not use substances and/or do not use substances problematically has been dispelled. Older-adult substance users may not present with the same symptoms as their younger counterparts and, therefore, may be more difficult to identify. Treatment options remain generally limited, as few programs or health care settings offer tailored interventions for older adults. Health care professionals need to continue to do as thorough of assessments as possible and enlist the help of formal measures, Web-based assessment, and build in the questions outlined earlier as routine. As the baby boom generation ages, the health care system will be challenged to provide culturally competent services to this group, as they are a unique generation of older adults. Knowledge about older-adult substance use and the issues that contribute to late onset or maintained addiction in late life will need to be continually updated as we learn how and why this generation of adults uses substances. Furthermore, the advancement and development of interventions that may be more useful for, effective for, and desired by this incoming generation of older

adults than previous generation, such as mobile interventions, will be crucial to alleviating the projected pressures on the health care system.

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KEY POINTS

- Although the current proportions of older adults with substance use disorders remain low compared with the general population, a growing proportion and number of older adults are at risk for hazardous drinking, prescription drug misuse, and illicit substance use and abuse.
- The identification of problematic substance use with older adults can be difficult because of overlapping symptoms with medical disorders that are common in older age.
- The assessment should include a respectful and nonstigmatizing approach along with direct questions about drinking, prescription medication, and illicit drug use.
- Several brief interventions centered on education about the harms of substance use have been shown to be effective with older adults.
- For older adults with more severe substance use problems, more intensive treatments geared toward a general population have been shown to be effective for older adults; however, treatments tailored for older adults have shown particular promise.

Box 1 Risk factors related to substance use in late life

Physical risk factors

- Male sex (for alcohol), female sex (for prescription drug)
- Caucasian ethnicity
- Chronic pain
- Physical disabilities or reduced mobility
- Transitions in care/living situations
- Poor health status
- Chronic physical illness/polymorbidity
- Significant drug burden/polypharmacy

Psychiatric risk factors

- Avoidance coping style
- History of alcohol problems
- Previous and/or concurrent SUD
- Previous and/or concurrent psychiatric illness

Social risk factors

- Affluence
- Bereavement
- Unexpected or forced retirement
- Social isolation (living alone or with nonspousal others)

Box 2 Potential indicators of substance misuse and abuse

Physical symptoms or potential indicators

Falls, bruises, and burns¹⁴⁹
Poor hygiene¹⁴⁹ or impaired self-care⁶⁹
Headaches¹⁴⁹
Incontinence¹⁴⁹
Increased tolerance to alcohol or medications¹⁴⁹ or unusual response to medications⁶⁹
Poor nutrition¹⁴⁹
Idiopathic seizures¹⁴⁹
Dizziness¹⁴⁹
Sensory deficits⁶⁹
Blackouts⁶⁹
Chronic pain

Cognitive symptoms or potential indicators

Disorientation¹⁴⁹
Memory loss¹⁴⁹
Recent difficulties in decision making¹⁴⁹
Overall cognitive impairment⁶⁹

Psychiatric symptoms or potential indicators¹⁴⁹

Sleep disturbances, problems, or insomnia
Anxiety
Depression
Excessive mood swings

Social symptoms or potential indicators

Family problems¹⁴⁹
Financial problems¹⁴⁹
Legal problems¹⁴⁹
Social isolation¹⁴⁹
Running out of medication early⁴⁴
Borrowing medication from others⁴⁴

Table 1SUD (formerly substance abuse or dependence) criteria^a

DSM-5 Criteria for SUD	Consideration for Older Adult
A substance is often taken in larger amounts or over a longer period than was intended.	Cognitive impairment can prevent adequate self-monitoring. Substances themselves may more greatly impair cognition among older adults than younger adults.
There is a persistent desire or unsuccessful efforts to cut down or control substance use.	It is the same as the general adult population.
A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.	Consequences from substance use can occur from using relatively small amounts.
There is craving or a strong desire to use the substance.	It is the same as the general adult population. Older adults with entrenched habits may not recognize cravings in the same way as the general adult population.
There is recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or at home.	Role obligations may not exist for older adults in the same way as for younger adults because of life-stage transitions, such as retirement. The role obligations more common in late life are caregiving for an ill spouse or family member, such as a grandchild.
There is continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance.	Older adults may not realize the problems they experience are from substance use.
Important social, occupational, or recreational activities are given up or reduced because of substance use.	Older adults may engage in fewer activities regardless of substance use, making it difficult to detect.
There is recurrent substance use in situations in which it is physically hazardous.	Older adults may not identify or understand that their use is hazardous, especially when using substances in smaller amounts.
Substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.	Older adults may not realize the problems they experience are from substance use.
Tolerance is developed, as defined by either of the following: <ol style="list-style-type: none"> 1 A need for markedly increased amounts of the substance to achieve intoxication or the desired effect 2 A markedly diminished effect with continued use of the same amount of the substance 	Because of the increased sensitivity to substances as they age, older adults will seem to have lowered rather than increase in tolerance.
Withdrawal, as manifested by either of the following: <ol style="list-style-type: none"> 1 The characteristic withdrawal syndrome for the substance 2 The substance or a close relative is taken to relieve or avoid withdrawal symptoms 	Withdrawal symptoms can manifest in ways that are more "subtle and protracted." ¹⁴⁹ Late-onset substance users may not develop physiologic dependence; <i>or</i> nonproblematic users of medications, such as benzodiazepines, may develop physiologic dependence.

^aSUD is defined as a medical disorder in which 2 or more of the aforementioned listed symptoms are occurring in the last 12 months.⁸⁵

Adapted from Barry KL, Blow FC, Oslin DW. Substance abuse in older adults: review and recommendations for education and practice in medical settings. *Subst Abus* 2002;23(Suppl 3):105–31; and *Data from American Psychiatric Association*. Diagnostic and statistical manual of mental disorders. 5th edition. Arlington (VA): American Psychiatric Publishing; 2013. p. 491.

Table 2

Categorization of substance use among older adults

Abstinence	No drinking at all and no use of illicit drugs
Low-risk use	Drinking within safety guidelines (7 standard drinks per week, no more than 2 drinks on any one occasion) Only appropriate/prescribed use of prescription or over-the-counter medications No guidelines for low-risk use for illicit drugs
At-risk use (also referred to as unhealthy or hazardous use)	Drinking beyond safety guidelines; drinking while taking medications in which consuming alcohol is contraindicated Intentional or unintentional off-label use of prescription or over-the-counter medications; taking medication, even once in awhile, that is not prescribed directly for that person Any use of illicit substances (primarily because these substance are not quality controlled or standardized)
Problem use	Substance use that results in social, medical, or psychological consequences, regardless of quantity or frequency of substance use ³³ Problem user may or may not meet criteria for SUD