

Substance Use among Older Adults: An Update on Prevalence, Etiology, Assessment, and Intervention

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Keywords

Substance use · Older adults · Vulnerability assessment · Substance abuse treatment

Abstract

The global population is aging, and as the population ages, high-risk alcohol and other drug use, particularly cannabis and prescription medications, is growing among older adults (OA). OA, defined here as 50 years of age and older, have a number of unique vulnerabilities to drug and alcohol use due to both biological as well as psychosocial factors compared to younger adults. Understanding the wide spectrum of these vulnerabilities is important to assessment, diagnosis, and intervention. Specific techniques, assessment tools, and interventions known to be effective in OA are reviewed.

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Introduction

The global population is aging. While in 1900 individuals aged 65 years and older made up 1% of the global population, that proportion is estimated to top 20% in 2050 [1]. Simultaneous to the population aging, there has also been a dramatic increase in the past quarter century

of substance use worldwide, with increasing rates of substance use disorders (SUD)/dependence and related disease/injury morbidity across age groups [2]. Globally, the most common substances used are alcohol, cannabis, and opioids, and, in the past 26 years, alcohol use disorder (AUD) has increased by 44%, cannabis use disorder by 26%, and opioid use disorder by 47%. Together, these 2 demographic and health trends intersect to create a growing public health problem: high-risk substance use, including SUD, among older adults (OA).

Generations preceding baby boomers did not use substances at high rates and rarely presented to substance abuse treatment [3]. Therefore, in some countries, tracking OA substance use and treatment utilization still ends at age 60 years [1]. Historical trends perpetuate the misconception that OA living today do not use substances, yet evidence suggests that current substance use among OA is substantial and currently on the rise.

Some OA develop SUD in their early or middle years (*early onset*), and, due to harm reduction and advancing medical interventions, survive to older age, even while continuing to use substances problematically [1]. Other OA develop high-risk substance use for the first time in later life (*late onset*). These cases most commonly occur because either the adult continues what was considered in middle age to be moderate substance use into later

Table 1. World Health Organization risk drinking levels (grams of alcohol per day) adapted to include age

	Adult males <65 years old	Adult females (all ages) and adult males ≥65 years old
Abstinence	0 g	0 g
Low risk	1–40 g	1–20 g
Medium risk	41–60 g	21–40 g
High risk	61–100 g	41–60 g
Very high risk	101+ g	61+ g

The number of grams in a standard drink varies across countries. The US has one of the largest standard drinks (14 g), topped only by Austria (20 g), whereas Iceland and the UK have the smallest, with 8 g of ethanol considered to be a standard drink. The vast majority of countries across the world considers a standard drink to contain 10–12 g ethanol.

life – a point at which substances take a greater biological toll – or later life events, stress, and/or drug exposure (e.g., prescription opioids) contribute to the development of first-time substance use problems. As a result of multiple pathways, prevalence rates of SUD have remained high among this group as they age [4].

Recent findings on prevalence rates by substance, diagnosis, and the unique concerns related to OA who use substances are discussed below. The term OA used here refers to a person 50 years old and older, due solely to biological changes in the body and brain that begin around 50 years of age that increase one's susceptibility to the negative effects of substances [1]. Using an inclusive definition means OA are a heterogeneous group, making generalizations difficult. Where possible, differences between age groups within OA are discussed. Since screening, assessment, and interventions have not changed in recent years, they are described elsewhere in detail [5] and reviewed only briefly.

Prevalence Rates

Alcohol

Globally, alcohol remains the most commonly used substance among OA [5], except in countries in Northern Africa and the Middle East where drug use is more common [6]. Aspects of culture, such as living in a country where heavy drinking is accepted/encouraged, impact rates of drinking after age 50 years. Table 1 shows the World Health Organization (WHO) risk levels for drink-

ing [7], defined in grams of ethanol consumed per day and adapted to age, according to recommendations from the American Geriatrics Society [8].

Generally, OA reduce alcohol use as they age [9], often due to medical conditions [10, 11]; however, rates of binge drinking (WHO high-risk levels and higher) and AUD increased over the last decade. In 2014, US National Survey on Drug Use and Health (NSDUH) data demonstrated that 19% of adults 50–64 years old drank at WHO high-risk levels in the past month [12], and 2015–2017 NSDUH data revealed 14.9% of adults ≥65 years reported drinking at the same level [13]. Within health care settings, rates of OA high- and very-high risk drinking range up to 22% [9]. The rate of AUD among American OA increased significantly from 3% in 2005 to 3.7% in 2014 [12]. Rates of WHO high-risk drinking among OA are high across Western societies; for example, 32% of Danish adults 65–74 years old drink at WHO high- or very high-risk levels [14], and in the Netherlands, WHO high-risk drinking occurs among 15% of women 55–65 years old [15].

Tobacco

Smoking cigarettes is still the most common form of tobacco use [16]. While rates of smoking have decreased globally over the last decade across the general population, they remain relatively stable among OA [16]. US national epidemiological data show the highest rates of smoking (16.4%) occur for those 45–64 years old. Only 8.4% of those ≥65 years reported current smoking in 2015, with the reduced rate of smoking within this age group likely due to premature mortality. Global rates of smoking are highly variable across countries, with the highest rates in Eastern Europe and Asia [17]; however, this author could find no epidemiological studies that disaggregate tobacco use for OA from those as young as 15 years. Rates of smokeless tobacco use are also not well studied across age groups in the US or internationally. Given the expanding market of heated tobacco products, such as e-cigarettes, this is expected to grow over time.

Illicit Substances

Illicit drug use is far more prevalent among OA in the US than any other country in the world [18]; however, evidence suggests drug use is increasing in other Western countries [1]. Few epidemiological studies in any country include rates of illicit drug use or SUD for OA [19]; however, recent efforts were made to quantify trends in illicit drug use among American OA. NSDUH data demon-

strated that rates of past month use of illicit substances doubled (from 1.9–3.4 to 3.6–7.2%) among adults 50–64 years old between 2002 and 2012 [4]. NSDUH data from 2017 show 13.9% of adults 50–64 years old and 5.8% of adults ≥65 years report past month illicit drug use, and these proportions are driven largely by cannabis use [20]. The same data showed 31.6% of Americans ≥65 years reported ever using illicit drugs in their lifetime, whereas 57.3% of Americans aged 50–64 years reported lifetime drug use; only 0.21 and 1.8%, respectively, qualified for past month SUD.

Cannabis

Due to decriminalization, legalization, and relative social acceptability across nations, cannabis use among OA is more prevalent than other drug use [19, 21]. According to NSDUH data, between 2006 and 2013, past year cannabis use among OA increased from 2.8 to 4.8% [22], which again increased to 5.7% by 2017 [20]. In 2013, 34.8% of American OA with past year cannabis use also reported using additional illicit substances. In Europe, daily cannabis use is common, and rates of cannabis use across age groups are expected to increase [21]; however, no global rates of cannabis or other illicit drug use among OA are available. Little is known about use of cannabinoid products (e.g., marijuana or CBD oil) globally.

Prescription and Over-the-Counter Medication

Due to increased morbidity during aging, OA take more prescribed and over-the-counter medications than younger adults [3], increasing the risk for harmful drug interactions and misuse. A national epidemiological survey in 2010 found that 39% of Americans ≥65 years used at least 5 prescription medications concurrently [23], primarily for blood pressure, cholesterol, diabetes, and depression (e.g., SSRIs). A community-based study found 1 in 25 OA (aged 57–85 years) at risk for a major drug interaction [24].

Little disaggregated data exist on OA nonmedical prescription drug use, as OA are often subsumed with younger groups. In 2012, 2.9 million American OA reported past year nonmedical medication use [4], which included opioids, benzodiazepines, barbiturates, stimulants, and other medications. Despite contraindications, benzodiazepines and other tranquilizers are widely and disproportionately prescribed to OA [25]. Rates of benzodiazepine use among American OA range from 15.2 to 32% [26], and NSDUH data reveal tranquilizer misuse among American OA doubled between 2005/2006 and 2013/2014

from 7.9 to 16.5% [27]. NSDUH data from 2017 showed that 3% of Americans aged 50–64 years and 1.5% of those ≥65 years misused opioid medications in the past year [20]. Mortality rates among American OA who use opioids increased and surpassed younger Americans between 2006 and 2013 [28].

Diagnosis of SUD

Formal diagnosis of SUD relies on criteria outlined by the *Diagnostic and Statistical Manual for Mental Disorders*, 5th edition (DSM-5) [29], the *International Classification of Diseases*, 10th edition (ICD-10) [30], and eventually the ICD-11, slated to be adopted in 2022 (see Table 2, referred to in the ICD as substance dependence). Each diagnostic profile outlines similar symptoms of SUD based on physical and/or social factors; however, these profiles are less relevant/applicable to OA, making accurate diagnosis among OA challenging [3]. Due to age-associated physiological changes that increase the effects of substances, OA generally experience a *reduction* in tolerance as they age – eliminating one of the hallmarks of SUD as an accurate indicator among OA. Natural interruption of social and vocational roles that occur later in life, such as retirement or mortality of peers, may mask problems related to substance use [31]. Additionally, the criterion pertaining to continued use despite persistent/recurrent problems may not apply to OA who confuse their problems related to substance use for normal aging [3]. An investigation of potential bias of diagnostic criteria for DSM-5 AUD using the Item Response Theory [31] found differential responses among older versus middle-aged adults, such that OA were half as likely as middle-aged adults to endorse criteria related to tolerance, activities to obtain alcohol, social/interpersonal problems, and physically hazardous situations. Criteria most successful in discriminating AUD among OA were unsuccessful efforts to cut back, withdrawal, and social/interpersonal problems.

Diagnostic Orphans

Given diagnostic challenges, many OA remain “diagnostic orphans,” individuals who qualify for only one diagnostic criterion for SUD and are therefore sub-threshold [31]. Unfortunately, health care systems may require a diagnosis to provide care. Increasing access to primary or specialty health care for diagnostic orphans could prevent damaging consequences that can occur among OA.

Table 2. Substance use disorder criteria across diagnostic profiles

DSM-5 criteria for substance use disorder	ICD-10 criteria for substance dependence	ICD-11 criteria for substance dependence	Special consideration for older adults (OA)
Two or more symptoms occurring in the last 12 months	≥3 of the following symptoms that have occurred together for at least 1 month, or together repeatedly within a 12-month period	≥2 of the 3 central features be present at the same time or occurring repeatedly over at least 12 months or continuously over a period of at least 1 month	
1 Craving or a strong desire to use the substance	A strong desire or sense of compulsion to take the psychoactive substance (craving or compulsion)	1. Impaired control over substance use – in terms of the onset, level, circumstances, or termination of use, and often, but not necessarily, accompanied by a subjective sensation of urge or craving to use the substance	OA with entrenched habits may not recognize cravings in the same way as the general adult population
2 There is a persistent desire or unsuccessful efforts to cut down or control substance use	No equivalent criterion (text states subjective awareness of compulsion described above is most commonly seen during attempts to stop or control substance use)		Cognitive impairment can prevent adequate self-monitoring or tracking, therefore impeding efforts to cut down; substances themselves may more greatly impair cognition or overall functioning at lower doses among OA compared to younger adults, again impairing control
3 A substance is often taken in larger amounts or over a longer period than was intended	Difficulties in controlling substance-taking behavior in terms of its onset, termination, or levels of use		
4 Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or at home	Progressive neglect of alternative pleasures and responsibilities because of psychoactive substance use, or increased amount of me necessary to obtain or take the substance or to recover from its effects	2. Substance use becomes an increasing priority in life such that its use takes precedence over other interests or enjoyments, daily activities, responsibilities, or health or personal care; it takes an increasingly central role in the person's life and relegates other areas of life to the periphery; substance use often continues despite the occurrence of problems	Role obligations may not exist for OA in the same way as for younger adults due to life stage transitions such as retirement; role obligations more common in late life might be caregiving for an ill spouse or family member, such as a grandchild
5 A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects			Consequences, such as recovery from substance use, can occur from using relatively small amounts
6 Important social, occupational, or recreational activities are given up or reduced because of substance use			OA may engage in fewer activities overall due to aging, regardless of substance use, making detection difficult
7 Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance	Persisting with substance use despite clear evidence of overtly harmful consequences		OA may not realize the problems they experience are from substance use; they may think they are a part of normal aging; they also may not see their problems as all that severe
8 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			
9 Tolerance, as defined by either of the following: (i) A need for markedly increased amounts of the substance to achieve intoxication or the desired effect (ii) A markedly diminished effect with continued use of the same amount of the substance	Tolerance: such that increased doses of the psychoactive substances are required in order to achieve effects originally produced by lower doses	3. Physiological features (indicative of neuroadaptation to the substance) as manifested by (i) tolerance, (ii) withdrawal symptoms following cessation or reduction in use of that substance, or (iii) repeated use of the substance (or pharmacologically similar substance) to prevent or alleviate withdrawal symptoms; withdrawal symptoms must be characteristic for the withdrawal syndrome for that substance and must not simply reflect a hangover effect	Due to increased sensitivity to substances as they age, OA will have a decrease rather than an increase in tolerance
10 Withdrawal, as manifested by either of the following: (i) The characteristic withdrawal syndrome for the substance (ii) The substance or a close relative is taken to relieve or avoid withdrawal symptoms	A physiological withdrawal state when substance use has ceased or been reduced, as evidenced by the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related substance) with the intention of relieving or avoiding withdrawal symptoms		Withdrawal symptoms can manifest in ways that are more "subtle and protracted" [67]; late-onset substance abuse may not involve physiological dependence; in addition, physiological dependence on prescribed medications, such as benzodiazepines, may develop
11 Recurrent substance use in situations in which it is physically hazardous	No equivalent criterion	No equivalent criterion	OA may not identify or understand that their use is hazardous, especially when using substances in smaller amounts

DSM-5 criteria are from the *Diagnostic and Statistical Manual*, 5th edition [29, p. 491]. Table adapted from both Barry et al. [67, p. 109] and Saunders [68, p. 6].

Issues Related to Substance Use in Later Life

Even with minimal substance use, biological aging itself and life stage present specific risks for harm. Risks to one's health may vary widely by substance, clinical presentation, or lifestyle (e.g., age, liver function, medical comorbidities, current medications, living situation, em-

ployment, and social network). While the biological impact of substance use on the older body is shared universally, social and life stage factors that impact substance use may vary across cultures and nations. Some factors described below may be considered *predictors* of late-life substance use, though little longitudinal research exists. Among existing studies, a majority examine fac-

Table 3. Factors associated with alcohol and other substance use in late life

Demographics
Male gender (for alcohol, marijuana, tobacco) [10, 13]
Female gender (for prescription drugs) [11, 32]
Caucasian [10, 13]
Age (being closer to middle age) [10, 11]
Less than college education [11]
Physical factors
Chronic pain [62]
Physical disabilities or reduced mobility [5]
Poor physical health status, chronic physical illness [10]
Significant drug burden/polypharmacy
Psychiatric factors
Cognitive impairment, dementia [33, 60]
Poor mental health status [10, 11]
Avoidance coping style [5]
Using substances to cope with stress [51]
Previous and/or concurrent alcohol or other substance use disorder (including tobacco) [11]
Previous and/or concurrent psychiatric illness [5]
Loneliness (alcohol, marijuana, and potentially opioids) [3]
Boredom [62]
Low perceived social support (for cannabis use) [51]
Social factors
Affluence/more financial resources/more stable financial future [9]
Being single, divorced, separated (among men) [8, 10]
Bereavement [5]
High work place stress or high job satisfaction before retirement [58]
Unexpected, involuntary, or forced retirement [58]
Social isolation (living alone or with nonspousal others) (for prescription drug use) [32]
Transitions in care/living situations [3]
Size of social network, including people who use mood-altering substances [58]
Lack of religious affiliation [5]
Homelessness [60]

All factors listed here are based on studies performed in the US except for unexpected, involuntary, or forced retirement. A few of these factors have been shown to predict late-life alcohol use. Most are known correlates of alcohol or other substance use.

tors related primarily to alcohol and cannabis use among American OA. Table 3 lists factors associated with substance use among OA.

The Biology of Aging

Aging causes numerous biological changes to the body and brain. Cognitive functions evolve as we age, including changes in the dopaminergic, glutaminergic, and serotonergic systems [1]. Chemical shifts and changes in

brain structure (e.g., diminished white matter and increased permeability of the blood-brain barrier) are exacerbated by substance use and speed the aging process. Lean body mass and total body water decrease as neuronal receptor sensitivity increase. Drugs that are fat soluble, such as benzodiazepines, have a longer duration of action. Therefore, benzodiazepines with long half-lives, such as diazepam, cause excessive sedation [32]. Finally, the ability of the liver and kidneys to process and eliminate alcohol, drugs, or medications is also diminished. These factors coincide to cause OA to experience higher concentrations of substances in their systems, for longer periods of time, with greater impairment compared to younger adults at equivalent consumption levels and with less awareness of their impairment [5]. This can contribute to OA experiencing more severe substance-related problems compared to their younger counterparts; impaired instrumental activities of daily living (e.g., inability to shop or cook for oneself) [33]; and an increased risk for substance use-related hospitalizations and nursing home admissions [34].

Health Benefits of Alcohol

Moderate alcohol consumption is associated with decreased morbidity and mortality among some OA [5]. OA who drink at low-risk levels experience better health than both their heavier drinking and abstinent counterparts, demonstrating fewer falls, greater mobility, and improved physical functioning. Despite these benefits, there are also possible negative trade-offs. While low-risk drinking decreases the risk of ischemic stroke, it simultaneously increases the risk of hemorrhagic stroke. It is likely those in good health drink more than those in poor health. Benefits of alcohol use for OA vary across individuals and depend on the biopsychosocial context, comorbid illnesses, gender, and genetics of each person.

Comorbid Medical and Mental Health Conditions

OA have higher rates of comorbid medical and psychiatric conditions than their younger counterparts. These conditions and the medications used to treat them create a complicated set of risks for OA who use substances [8]. Even low-risk drinking may cause problems for those living with a comorbid medical or mental health condition. Many conditions common in older age, such as high blood pressure, diabetes, or depression, may warrant abstinence from substances altogether, as they are known to worsen these conditions.

While little research exists on psychiatric comorbidity with SUD among OA, evidence suggests a high correla-

tion between substance use, specifically alcohol use, and depression and other affective disorders among OA [19]. Such co-occurrence greatly complicates the diagnosis and treatment of both. In addition, a high blood alcohol concentration is found to feature largely in suicides among American OA struggling with depression [35].

While some studies show alcohol use to be protective of brain functions over the life course, other studies show cognitive impairment and various dementias are associated with alcohol and other substance use, whether active or past use [36]. An Australian study of OA attending outpatient treatment for SUD discovered that 66% met criteria for mild or severe cognitive impairment [37]. While symptoms of some cognitive impairments subside once an OA achieves abstinence, others may worsen regardless.

Substance use may also interact with medications used to treat physical and mental health conditions [38], potentiating or inhibiting the medication effects or creating dangerous cross-tolerance reactions among OA. For example, both cannabis (including both THC and cannabidiol [CBD]) and alcohol are contraindicated while taking high blood pressure medications, antibiotics, antihistamines, medications for erectile dysfunction, pain relievers (prescription and over the counter), sleep aids, antidepressants, and some cholesterol medications, and may cause hepatotoxicity [39, 40]. Using substances while taking medications can delay the biotransformation or digestion of medications, cause excessive sedation, or potentiate blood thinning [40, 41]. Anesthetics should be adjusted if an OA drinks heavily or uses marijuana or CBD due to cross tolerance [42, 43]. Another example relates to OA with HIV. About 17% of new cases of HIV are OA, and substance use is common among this population [44]. Complicated antiretroviral medication regimens for HIV could be rendered relatively inert due to substance use.

Tobacco Use

Tobacco use is a marker of vulnerability for OA, as it is likely to co-occur with almost all other substances [8]. Tobacco use among OA is associated with increased mortality, risks of coronary events and cardiac deaths, smoking-related cancers, problems with pulmonary function, osteoporosis, hip fractures, and overall poorer physical functioning and mobility [45]. Nicotine also interferes with treatments for these conditions.

Pain

Epidemiological research revealed that 53% of American OA experienced a chronic or bothersome pain in the past month [46], with studies across Europe, Asia, and

Australia demonstrating similar rates. OA experience pain from complications due to diabetes, neuropathy, osteoarthritis, and other conditions [47]. While pain wreaks its own havoc on the lives of OA, such as causing depression, anxiety, or activity avoidance, it can prompt OA to use prescribed and over-the-counter medication, alcohol, nonprescription cannabis, or opioids to cope. Opioids may be particularly lethal for even healthy OA whose aging renal system is unable to eliminate the drug efficiently from the body – thereby accumulating to toxic and/or lethal levels. A study of OA with HIV and chronic pain found a reciprocal relationship with daily alcohol consumption and daily reports of pain – each increasing the other [44], as is supported elsewhere in the literature [48].

The Unique Case of Cannabis

OA may use marijuana to cope with illness-related side effects [9] and/or recreationally [44]. A 2015 study of US medical marijuana registries in 13 states found that 35–50% of registrants were ≥ 50 years [49]. Among individuals 50–64 years old, just under 18% report medical marijuana use, and among medical marijuana users, there was a high rate (33%) of cannabis use disorder (regardless of age) [50]. Controlling for other stress risk factors, one epidemiological study of OA found that marijuana use (medicinal or otherwise) and cannabis use disorder were associated with more life stressors and lower perceived social support compared to those who did not use marijuana [51].

While there is at least preliminary evidence of medicinal benefits to marijuana use among OA, its therapeutic effects are understudied in this group, and its benefits may be overstated, as in the case of treating neuropathic pain [52]. There are also less-well-known risks related to marijuana use among OA [41]. Marijuana (with chemical compounds THC and CBD) causes impairment in short-term memory; increases heart and respiratory rates, elevates blood pressure; and contributes a fourfold increased risk for heart attack after the first hour of smoking marijuana. These effects may be pronounced in OA with compromised cognitive or cardiovascular systems. These negative effects may also be increasingly common as OA are exposed to the exponential rising potency of THC and ratio of THC to CBD [53]. While OA marijuana use (particularly edibles) is associated with increased injury, emergency department visits, and driving under the influence [54–56], OA perceive less risk from using marijuana compared to their younger counterparts, particularly among frequent users, medical marijuana users, and in states where marijuana has been legalized [57].

Life Transitions

While life events and social transitions may impact substance use across the life span, transitions common or specific to later life heighten the risk of harmful substance use. Bereavement (death of spouse/friends), poor health, loneliness, caregiving for an ill spouse, change in living arrangement (e.g., entering assisted living), and retirement can influence substance use among OA [39]. A review of the impact of retirement on OA drinking revealed that pre-retirement conditions among blue-collar workers in the US and abroad, such as high job satisfaction or workplace stress, increase the use of and problems with alcohol into retirement [58]. High job satisfaction appears to predict increased alcohol problems due to loss of an important role in the life of the retiree. Coping with workplace stress using alcohol appears to extend into retirement, even when the primary stressor is removed. It may be that the coping mechanism is too entrenched by the point of retirement for retirement to have a protective impact. Involuntary retirement or widening social networks after retirement both increase the likelihood of drinking problems for OA. Additionally, retirement communities involving high socialization may increase alcohol use [39], and alcohol use may be continued, encouraged, and/or enabled in nursing homes [59].

Risky Behaviors

Common behaviors among OA increase the risk of substance use. Many OA underreport their substance use. OA may see multiple doctors, each of whom may prescribe medications without full knowledge of other medications or substances an OA is taking [39]. OA may unintentionally misuse medication by borrowing prescribed medication from others (e.g., lorazepam for sleep), confusing pills (e.g., confusing zolpidem for a blood pressure pill), or taking more than intended (e.g., not accurately tracking they already took their recommended dose). Stockpiling medications occurs among OA, increasing the risk for overdose and suicide.

Screening, Assessment, and Intervention

Symptoms of substance use can present similarly to other illnesses common in later life, such as depression and dementia, making screening, assessment, and diagnosis difficult [60]. Several screening tools specific to OA exist and are described elsewhere in detail [5].

A Person-Centered Approach

While it may vary across cultures, person-centered care is recommended for American OA [61]. Using a supportive, nonconfrontational approach, OA are more likely to provide information about stigmatized behaviors and sensitive information if the clinician is genuinely interested in their overall well-being and asks questions as a part of overall health promotion [39]. Detailed, matter-of-fact questions about quantity and frequency of drinking, medications (prescription and over the counter), and other drugs (including marijuana and CBD) reduce stigma and may prompt more candid responses. Questions should focus on behaviors, such as whether an OA sometimes takes an extra pill to fall asleep or to cope with pain, runs out of medication early, or borrows medications from others, to provide a gateway to further discussion about high-risk use of substances [39]. While the OA may be abstinent from substances, questions about past use are critical due to associations with other psychiatric disorders or cognitive decline. A list of potential symptoms of high-risk substance use is reviewed elsewhere [5, see Box 2].

Motivation and Self-Efficacy

Motivation and self-efficacy, both critical to reducing substance use, may decline with age or are less influential on behavior than in younger counterparts. Substance use may be viewed as “one last pleasure” [59], reducing urgency among both OA and their family for potential change. A foreshortened sense of future may inhibit motivation to reduce substance use, or OA may not identify their substance use as warranting change [39]. Additionally, low self-efficacy is associated with fewer health promotion behaviors among OA due to perceiving the related consequences as normal aging. A recent study found that OA with high daily commitment and confidence to not drink heavily did not reduce their daily drinking as much as their younger counterparts [62]; in other words, high motivation and self-efficacy were not as protective for OA as for younger adults.

Intervention

Few studies on the effectiveness of substance abuse treatment for OA exist. Studies that do exist show OA who attend mainstream treatment demonstrate outcomes as good as younger cohorts [5]. Still, proportionally fewer OA attend treatment than younger adults [63], even after accounting for lower rates of SUD. OA barriers to treatment include: stigma and shame surrounding substance use and related problems; geo-

graphic isolation; inability to pay; subthreshold diagnosis; or difficulties with transportation and physical accessibility [3]. Treatment services specifically tailored to OA accessibility and needs are rare, and in the US, only an estimated 18% of substance abuse treatment programs are specifically designed to accommodate OA [39].

Available treatments, such as brief interventions, psychopharmacology and age adaptations to formal treatment, and self-help groups are reviewed elsewhere [5]. Only two intervention studies with OA who use alcohol emerged recently. One study demonstrated that OA reduce their alcohol use more when they receive normative feedback (peer comparison) versus personalized feedback (review health consequences) [64]. A second study examined motivational enhancement therapy (MET) [65]. MET is considered appropriate for OA due to its client-centered, nonjudgmental approach. MET increases motivation by assisting OA in identifying their perceived pros to changing behavior, including maintaining independence and sustaining optimal health, and cons of maintaining the status quo [5]. Until recently, no studies on MET for substance use included OA ≥ 62 years. This multinational study compared MET (4 sessions) and MET plus a community reinforcement approach (up to 8 additional sessions) to reduce alcohol use among just under 700 adults ≥ 60 years [66]. At the 26-week follow-up, half of the participants in both groups (48.9 and 52.3%, respectively) were abstinent or maintained low blood alcohol concentration.

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Conclusion

As the population ages, the global public health problem of OA using substances at high-risk levels grows. There is now widespread recognition among policy makers, health care providers, including generalists and specialists in gerontology and psychiatry [63], of the urgent need for (1) research to better understand substance use among OA, (2) assessments of substance use validated for OA across cultures and nations, (3) competent professionals who can work with OA with high-risk substance use; and (4) a wider array of treatment options tailored to OA that overtly address the barriers to treatment they experience.

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