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REVIEW

Prevalence and Treatment of Substance Misuse in Older Adults: Beyond Early Adulthood

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Abstract: Substance misuse, traditionally seen as a problem of early to mid-adulthood, is becoming increasingly prevalent among the older adult population (ages ≥65). Diagnosing and treating substance misuse in this vulnerable population is challenging because of multiple pre-existing medical comorbidities as well as polypharmacy. As such, it remains underdiagnosed and underrepresented in the literature. This review provides an overview of the three most commonly misused substances in older adults: alcohol, cannabis, and prescription drugs. It examines epidemiology, societal trends, and treatment options, highlighting the need for targeted research to address the unique challenges faced by older adults. This review also briefly comments on the prevalence and treatment of other illicit drugs in this population.

Keywords: older adult, elderly, alcohol use, cannabis use, prescription drug misuse, prevalence

Introduction

While substance use disorders (SUDs) are most commonly viewed as challenges faced in early to mid-adulthood (ages 18–45 years old) within the last few decades, they are also becoming more prevalent among the older adult population (ages ≥65 years old). The increasing rates of substance use in older adults are associated with poorer health outcomes, including higher rates of comorbidities and mortality. In this vulnerable population, identifying and addressing substance misuse of alcohol, cannabis, and prescription and illicit drugs presents unique challenges and remains underrepresented in the literature.

Alcohol use disorder (AUD) is common among the general American adult population, and the older adult population is no exception. Despite lower rates of utilization compared to 18–50-year-old adult populations, still more than half of all the older adult population engages in alcohol consumption.[1] The increasing prevalence of both alcohol use and misuse among the American older adult population has far-reaching consequences, such as increased morbidity and mortality rates contributing to the overall healthcare-associated burden in the United States.

Over the last few decades in the United States, sociocultural perceptions surrounding marijuana have shifted, and cannabis has become legalized for medical and recreational use in many states. As of 2024, cannabis is legal in 24 states for recreational purposes and legal in 38 states for medical use.[2] Therefore, it is critical to identify potential misuse in the older adult population to diagnose and treat cannabis use disorder (CUD) effectively. Compared to 18% of younger peers, 5% of older adults admit to using cannabis.[3] Nonetheless, the prevalence of cannabis use among adults aged 65 and older has seen a significant increase over a relatively short period.

Prescription drug misuse (PDM) can be defined as use of medication without a prescription or in ways not originally intended by the prescriber. Within the older adult population, PDM of benzodiazepines and opioids is a significant public health concern that often goes unnoticed. Unlike alcohol and cannabis use, the prevalence of prescription drug use is higher in older adults than in the general adult population, at nearly 8% compared to 4%.[4] Older adults are more likely to be prescribed these medications due to chronic pain and other age-related health issues, and this in turn increases the risk of dependency and misuse. Illicit substance use, while less common in older adults, is not absent. The downstream

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sequelae of illicit substance use are severe and can precipitate cerebrovascular accidents or myocardial infarction or exacerbate preexisting health conditions common in older adults, such as coronary artery disease, diabetes, and neurocognitive decline.

The treatment options for substance misuse in older adults are diverse, encompassing both non-pharmacological psychosocial interventions and pharmacological interventions. Unfortunately, the prescribing rate of approved medications for SUD is relatively low, and there is a notable lack of clinical trials specifically targeting the older adult population. Tailoring treatment for older adults with SUD involves considering this population's unique physical, cognitive, and psychosocial needs.

This paper aims to provide a broad overview of the most commonly misused substances among older adults: alcohol, cannabis, prescription drugs, and other illicit drugs. It delves into the epidemiology, societal trends, and treatment modalities for each misused substance. It also emphasizes the need for additional research to address the specific challenges faced by this unique population.

Materials and Methods

Relevant papers published from 2000 to 2024 were traced in PubMed/Medline. The search was performed using the keywords: geriatric and substance and cross-referenced with the terms misuse, use, and use disorder, alcohol, cannabis, benzodiazepines, opioids, illicit drugs and prescription drugs. References from identified articles were also assessed to find relevant studies. Older adults in this review are defined as individuals older than 65 years old. Only articles in English are included. The total number of relevant articles included in this review is 78.

Alcohol

Prevalence

Alcohol use is common among the general US population and use among the older adult population is no exception. Approximately 60% of the older adult population (≥65 years old) reported using alcohol within the last year and 45% reported using alcohol within the last month. The 2020 National Survey on Drug Use and Health (NSDUH) reported a continued year-over-year prevalence increase in this population. Of those aged 65 and up, approximately 31.4 million reported using alcohol within the last year. Within this age group, 57.7% reported using alcohol, up from 56.1% in 2019, for an absolute increase of almost 2 million older adult drinkers.[5]

The prevalence of alcohol use has been steadily increasing in the US older adult population at a much higher rate compared to their younger peers, the causes of which are diverse. Often theorized factors include the increased risk of different generational cohorts, an overall increased life expectancy and quality of life in the older adult population, changes in attitude and stigma in drinking, or any combination of the above.[6] Regarding alcohol use in older adults, it is crucial not to consider the older adult population as a homogenous group, as the 65+ year old population includes many generational cohorts. Notably, the baby boomer generation born from 1946 to 1964, known for their propensity towards substance abuse, has steadily entered this age cohort.[7]

Multiple national surveys, including the NSDUH (National Survey on Drug Use and Health), NHIS (National Health Interview Survey), NESARC (National Epidemiologic Survey on Alcohol and Related Conditions), and others have collected data on alcohol use in the US Grucza et al analyzed 5 of the most extensive national data sets and compared the year-over-year alcohol usage. The prevalence of alcohol use increased almost 10% from 2000 to 2015 in the 65+ population, with about 5% in the 50–64 population. These were notably a significant increase compared to the 18–50-year-old cohorts, whose prevalence only increased from 0 to 2% over the same period.[6] A similar analysis performed solely on the NESARC, the most specific data set on alcohol use, compared data from 2001 to 2013 and found that the older adult population faced the most significant prevalence increase in alcohol use of 22.4%.[8]

Within this increasing older adult population of alcohol users are those with increased misuse of drinking, including binge drinking, heavy drinking, and alcohol use disorder. Focus on these groups is of even greater concern due to their increased comorbid outcomes. Often-used recommendations for older adult alcohol consumption are guidelines set by the National Institute of Alcohol Abuse and Alcoholism (NIAAA). They recommend no more than 1 drink per day for older women and up to 2 drinks for older men, where each "drink" is defined as an equivalent to 14 grams of pure alcohol or

about 1.5 fl oz of hard spirits.[9] Although slightly varied between studies, binge drinking is defined as more than 4–5 drinks per occasion at least once in the past month, with more than five days of the month defined as heavy drinking.

A 2021 University of Michigan survey specific to alcohol usage among older adults reported that 17% of the older adult population drank more than the recommended amount per sitting, with 6% consuming 5+ drinks.[10] These results are comparable to a previously reported prevalence in the older adult population of approximately 9.8% binge drinkers and 3.4% heavy drinking per the NSDUH in 2020. According to a meta-analysis by Grucza, the prevalence of binge drinking has also steadily increased in all populations since the early 2000s. However, the older adult population showed the highest year-over-year binge drinking increases of 3.4% compared to 1.1% in the 30–49-year-old cohort. This is comparable with similarly disproportionate increases in heavier drinking reported in the older adult population by the NESARC, which reported a 106% increase in AUD diagnosis from 2001 to 2013.[8]

What about international data? One such study of European countries found that the majority (>80% of older adult drinkers) were within moderate older adult drinking guidelines.[11] However, there were a few exceptions relative to higher rates of heavy drinking, notably in the eastern European countries of Hungary and Slovakia. In addition, in-between countries, there had been a high variance in the distribution of alcohol consumption. Another Swedish study reported a prevalence of >30% above the moderate drinking guidelines.[12] One study of Japanese older adults noted a similar prevalence to the US of around 14% greater than moderate drinking guidelines.[13] Overall, the prevalence of within-guideline alcohol use in several international countries ranged from 70–90%, albeit with many countries experiencing a high variability in consumption levels. These results further suggest the increasing effect of cohort and cultural factors on the prevalence of older adult alcohol use.

Unfortunately, the rising prevalence in the US has notably paired with increased alcohol use-related mortality in the older adult population. Data from the CDC has shown that alcohol-induced deaths in the >65 population has increased from 12 per 100,000 to approximately 15 per 100,000 in 2017.[14] The morbidity from systemic and chronic alcohol-related diseases, such as alcohol-related major neurocognitive disorders, has also been rising. This combination of increased prevalence and increased morbidity and mortality in this population contributes to the healthcare-associated burden in the U.S.[15]

In summary, the data shows increases in both general alcohol consumption and problematic heavier alcohol use in the older adult population. The recent trends emphasize the importance of physicians not to ignore screening for alcohol use in their older adult patients.

Treatment

The three most common and FDA-approved pharmacological treatments for AUD are naltrexone, acamprosate, and disulfiram. Unfortunately, the prescribing rate of approved medications for AUD is relatively low. A study reflecting data collected by the Veterans Affairs reported that naltrexone was only prescribed to 2% of veterans diagnosed with AUD.[16] Other off-label medications like Gabapentin or Topiramate have been used to treat alcohol use disorder. However, there are minimal clinical trial data on the efficacy of these off-label drugs in the older adult population.

Naltrexone is the only approved medication in this group with age-specific RCT data for the treatment of AUD. However, these studies are weakened by small sample sizes within a limited population of older male veterans. Oslin et al showed that naltrexone in this population was effective in reducing alcohol relapse when compared to placebo, however, with limited effects on alcohol craving.[17] A follow-up study investigated its effects in older adults with adjunctive sertraline use. They reported similar relapse rates with patients taking naltrexone alone, with no statistically significant benefit from adjunctive sertraline. In the general population, the use of naltrexone for treating AUD has been well studied with positive results.[18] The Combined Behavioral Pharmacotherapies and Behavioral Interventions for Alcohol Dependence (COMBINE) study compared 4 groups of patients (n = 300) with medical management combined with naltrexone alone, behavioral intervention, or both against placebo. Conducted from 2001 to 2003, naltrexone in AUD patients alone resulted in the greatest reduction of heavy drinking, as well as a 5% increase in abstinence compared to placebo (80.6 vs 75.1).[19] A systematic review found that the number needed to treat naltrexone was as low as 20.[20] The use of naltrexone in older adults requires consideration of comorbid pain and dependence on opioids. Due to the overlapping mechanism of action, naltrexone can inadvertently reduce the pain-alleviating effects for those requiring

opioids. At higher doses, it is also known to cause hepatotoxicity; thus, necessitating lab draws before and after initiation. The most common formulations of naltrexone are a daily oral dose of 50mg and a long-acting intramuscularly injectable solution of 380 mg every four weeks.[18]

Acamprosate is an alternative shorter-acting medication with a different mechanism of action targeting GABA and NMDA receptors. However, acamprosate requires three times daily dosing, which can exacerbate the already significant pill burden in the older adult population.[18] Compared to naltrexone, acamprosate is excreted renally, necessitating more creatinine lab draws and contraindications in older adults with renal insufficiency. It has often been noted to be more effective at reducing cravings and promoting abstinence and less effective at reducing heavy usage. However, according to several meta-analyses, its efficacy is comparable to naltrexone in treating AUD.[21]

Disulfiram is an older deterrent medication that induces secondary metabolite formation in acetaldehyde, leading to many unpleasant side effects. It has poor adherence and is subsequently only a good choice when the patient has appropriate social support.[20] Notably, it has hepatic considerations and should not be started within 12 hours of abstinence. In addition, it has many contraindications, including history of strokes, seizures, and other common old-age comorbidities. As such, disulfiram is typically reserved as a second or third-line treatment and would be less preferred in older adults.[18]

In addition to FDA-approved medications for AUD, there are off-label medications such as gabapentin, baclofen, and topiramate. Gabapentin has been shown in standard adults to help with cravings and modulate anxiety. Baclofen can often be used in patients with poor liver clearance. In a 2014 meta-analysis, topiramate was associated with clinically significant effects (Hedges $g > 0.4$) on promoting abstinence and reducing heavy drinking and smaller effects (Hedges $g > 0.3$) on reducing γ-glutamyltransferase concentration and alcohol cravings.[22]

A randomized control trial of topiramate with a sample size of n = 164 (mean age was 51 and 70% of participants were male) utilized 200 mg Topiramate for 12 weeks compared to placebo and showed a reduction in heavy drinking.[23] Nonetheless, because of risk of anticholinergic side effects, cognitive impairment, and increased risk of sedation in the older adult population, all three of these medications should be offered on an individual basis only after failing first-line treatment options.

Non-pharmacological treatment options for AUD range from shorter motivational interviewing or brief intervention to more comprehensive CBT and 12-step programs. A brief intervention is a short conversation provided by the physician to help with patient self-awareness and to develop a consumption management plan. These nonpharmacological treatments provide insight and education on the detrimental effects of alcohol abuse. Specific to the older adult population, Ray et al analyzed the literature for AUD, comparing the combined effects of pharmacotherapy and CBT to usual care or other behavioral modalities. Compared to pharmacotherapy and usual care alone, CBT in combination with pharmacotherapy had a small but significant effect. There were no significant differences in effect compared to other behavioral modalities, such as motivational interviewing or 12-step programs.[24] This contrasted with a recent 2020 Cochrane review which found that 12-step programs were more effective than CBT for AUD.[25] Therefore, we recommend tailoring the behavioral modality choice to suit individual patient characteristics in the older adult population.

In addition, when considering medication choice for AUD in the older adult population, the clinician should always consider the unique challenges this population faces, such as comorbid medical problems, pharmacokinetics, and social support barriers. Based on the level of patient autonomy and severity of alcohol abuse, clinicians should consider more intensive rehabilitation programs, as well as involving family members in treatment. Overall, a combination of pharmacotherapy and behavioral modalities has shown to be the best treatment practice for AUD. Specifically in the older adult population, behavioral modalities should be tailored to individual preferences and social factors, and naltrexone remains the most efficacious and well-studied drug with a favorable safety profile.

Cannabis

Prevalence

With more lenient attitudes towards cannabis and increased legalization of cannabis for recreational or medical use in the US, the prevalence of cannabis use in older adults has increased significantly. Data from the NSDUH found that cannabis

use among American adults aged 65 and older increased from 0.4% in 2006–2007 to 4.2% in 2018–2019 and to 7% in 2021.[26] A previous study using nationally representative data, from 2006 to 2013, found a 250% relative increase in the past year cannabis use for adults aged 65 and older[27]. According to the 2022 NSDUH, 8% of adults 65 and older reported having used marijuana in the past year, which is nearly double compared to seven years prior.[27] A cross-sectional analysis from 2015 to 2016 of national data found that for American older adults (≥65 years old), past-year marijuana users were more likely to be male than female (68.8% vs 44.1%, $p < 0.001$), have an income <$20,000 (25.3% vs 17.3%, $p < 0.04$); less likely to be married (46.4% vs 60.2, $p < 0.001$), and more likely to have AUD, nicotine dependence, use cocaine, and misuse prescription opioids compared to older adults who do not use cannabis.[26]

Some of the most commonly cited reasons for using medical cannabis among older adults are to aid in sleep and pain. A 2021 survey (N = 586) conducted at an older adult outpatient clinic in La Jolla, CA, of older adults aged 65 years and older found that 15% of all clinic patients reported using cannabis in the last 3 years. Of those 15%, near half reported using cannabis on a daily or weekly basis, and 46% reported using cannabidiol (CBD)-only products. The vast majority of the older adults in their clinic (78%) said they used cannabis for medical purposes only with the most commonly cited reasons being pain/arthritis (73%), sleep disturbance (29%), anxiety (24%) and depression (17%[28]). Notably, from the results from their survey, it appears as if older adults began using cannabis after the age of 60 years to self- treat medical conditions. Another survey from 2019 of older adults at an outpatient clinic (n = 568) found that 82 of those patients reported using cannabis within the last 3 years. Nearly one-third of the cannabis users reported they used it for sleep disturbances. Of cannabis users targeting sleep disturbances, 83% also used cannabis for pain, and 50% reported also using it for mental health conditions including anxiety and depression.[29]

Cannabis Use Disorder (CUD) can be defined by recurrent use of cannabis that causes significant clinical and functional impairment. In addition to increased usage among older adults, the prevalence of *DSM-IV* classified CUD has also increased; from 2001–2002 to 2012–2013 for those aged 45 to 64 years rates increased from 0.4% to 1.3%. For older adults ≥65 years old, the prevalence of CUD increased from 0.0% in 2001–2002 to 0.3% in 2012–2013.[30]

Since the legalization of non-medical cannabis in Canada in 2018, the proportion of older adults (≥65 years old) who reported using increased significantly over pre-legalization estimates from 4.1 to 5.9%.[31] In addition, the proportion of older Canadian adults who reported daily use of cannabis also rose significantly, from 1.6 to 2.6%, which was the greatest increase in any age group. In 2019, over half of all Canadian adults over 65 years old reported using cannabis strictly for medical reasons, and one quarter of Canadian adults over 65 years old reported trying cannabis for the first time within the past three months.[32] Similarly in Europe, although data on Cannabis Use in adults over 65 are limited, the percent increase of cannabis usage has been noted to be highest in older age cohorts, with an 80% prevalence increase in the 55–64 rage group, compared to just 20% in younger age groups.

Health Risks

While medical cannabis may have some therapeutic benefits for certain conditions in older adults, there remain concerns about health risks and side effects. A prospective observational study in Israel from 2015 to 2017 that included all patients above 65 years of age (n = 2736) who received medical cannabis found that at 6 months, the most common side effects were dizziness (n = 87, 9.7%), somnolence (n = 35, 3.9%), confusion/disorientation (n = 17, 1.9%), and hallucinations (n = 7, 0.8[9] %).[33] Another prospective observational study from 2018 of 2970 cancer patients receiving medical cannabis found that the most common side effects were dizziness (n = 96, 8.0%), sleepiness (n = 40, 3.3%), and psychoactive effects (34, 2.8%).[34] For the older adult population who may already have a high pill burden, these side-effect risks should be carefully considered and discussed when considering whether to use cannabis. It is also essential for healthcare providers to regularly screen older adults for cannabis use and provide appropriate interventions for those experiencing adverse health impacts.

Treatment

Despite the growing concern surrounding CUD among older adults, there is a notable lack of effective pharmacologic treatments or randomized controlled trials (RCTs) for this population. Most available research and treatment guidelines, such as SAMHSA's Treatment Improvement Protocol (TIP) and the Canadian Guidelines on Cannabis Use Disorder

Among Older Adults, focus on general adult populations or provide recommendations for tailoring treatments to older adults.[35,36] Drug trials in the literature are usually limited by small sample size, short study duration, and high dropout rates. One systematic review of 26 trials failed to show that medication increased abstinence or reduced cannabis use, including those with selective serotonin reuptake inhibitors (SSRIs) and cannabinoids[37]. Several RCTs also failed to show a primary treatment effect of drug versus placebo. These trials included one study each for bupropion sustained-release, nefazodone, fluoxetine, buspirone,[38] and atomoxetine.[39] Only a single gabapentin study, where gabapentin was dosed at 1200 mg/day, showed meaningful improvements in cannabis use and withdrawal symptoms; however, the sample size was small (n = 50).[40] A systematic review from 2019 demonstrates that using cannabinoid agonists like dronabinol, nabilone, or nabiximols, either alone or in combination with other drugs, may show promise in reducing cannabis withdrawal symptoms, warranting future clinical trials [16].[41]

Given the limited data for effective pharmacological interventions in treating CUD, behavioral and psychosocial interventions are the mainstay of treatment. Other clinical trials have focused on psychotherapeutic interventions, specifically motivational enhancement therapy (MET), CBT, and contingency management.[42] Their findings suggest that the combination of these three modalities produces the best abstinence outcomes, even though abstinence rates remain modest and decline after treatment ends.

When tailoring these interventions for older adults, clinicians should consider age-related cognitive changes, such as memory decline or slower processing speed, and adjust the pace and complexity of the therapy accordingly. This may include adjusting therapy pace and content, carefully monitoring medication use and interactions, and facilitating participation in age-appropriate support groups. Additionally, incorporating support for age-specific stressors, such as retirement, loss of loved ones, or health issues, can enhance the relevance and effectiveness of the treatment. Further research and clinical trials targeting older adults with CUD are necessary to improve our understanding of the unique challenges faced by this population and to develop more effective treatment approaches.

Prescription Drug Misuse

Prescription drug misuse (PDM) can be defined as use of medications without a prescription or in ways not originally intended by the prescriber. This can mean use beyond the prescribed time frame, use at a higher dose than originally prescribed, or use for effects other than the indication for which it was prescribed.[43] The factors that contribute to PDM in the older adult population are multifactorial, including but not limited to chronic pain, social isolation, financial concerns, psychiatric comorbidities, medical comorbidities, and hospital admissions.[44,45] For brevity, this paper will focus on benzodiazepines/sedative-hypnotics and opioids/narcotic analgesic use/misuse.

Benzodiazepines

Prevalence

Benzodiazepines and sedative hypnotics are widely prescribed in the older adult population because they can treat panic attacks, acute episodes of insomnia, and manage some symptoms of dementia.[46] A retrospective analysis from 2001 to 2010 of primary care office visits and ED visits in the US found that benzodiazepines were used in 16.6 million of 133.3 million primary care visits and 1.9 million of 18.1 million ED visits. They also found that benzodiazepine use for adults aged 85 and older increased from 8.9% to 19.3% in primary care clinics and from 10.1% to 17.2% in EDs.[47] Data obtained from the 2015–2016 NSDUH showed that 21.9% of older adults reported sedative/tranquilizer use within the past year. It also showed that the prevalence of lifetime misuse by older adult age 65 and older was estimated to be 2.2% of the US population.[48] When looking at the most commonly cited reasons for benzodiazepine and sedative/tranquilizer misuse, they were either to sleep (63.9%) or relax (32.5%).[49]

Worldwide, inappropriate benzodiazepine use is a major concern in the outpatient setting and in nursing home populations. In Spain, a cross-sectional study of 225 outpatients 65+ and older found that 22.7% of the sample had been prescribed at least one potentially inappropriate psychotropic drug with the majority being long intermediate, and short-acting benzodiazepines.[50] In France, a retrospective cohort study of 3905 nursing home residents, where the average patient age was 87.1 ± 8.1 years old, found that the prevalence of exposure to anxiolytics was overall 25.8% among residents, with inappropriate doses of alprazolam accounting for 37.9% and bromazepam accounting for 16% of total

anxiolytics.[51] In Italy, a retrospective cross-sectional cohort study of 2555 nursing home residents 65+ and older found that 63.2% of the total residents received at least one psychotropic drug considered potentially inappropriate, with most being benzodiazepines.[52]

Half life, drug potency, duration of use, and individual considerations are factors that determine the misuse potential of benzodiazepines. There are four important determinants of misuse potential of sedative-hypnotics:[53] Strong euphoric or mood altering effects; tolerance to main therapeutic effects; rapid onset and termination of action; and presence of withdrawal symptoms upon reduction of dose of or discontinuation of the drug. With continued use, benzodiazepines carry the risk of dependence as well as other more controversial risks, such as cognitive deterioration in the older adult populations.[54] In addition, benzodiazepines have been associated with negative outcomes in older adults, such as increased risk of falls[55] fractures,[56] and motor vehicle accidents.[57]

Treatment

Several pharmacologic and nonpharmacologic interventions have been developed for the cessation of benzodiazepine use among the older adult population. An important nonpharmacologic intervention is regular screening for use and misuse. In the outpatient primary care setting, helpful screening tools include the Severity of Dependence Scale which is a brief five-item questionnaire, the Benzodiazepine Withdrawal Symptom Questionnaire comprised 20 self-reported items, and the Benzodiazepine Dependence Self-Report Questionnaire which is the longest comprised of 30 items. Other psychosocial interventions include CBT and taper, motivational interviewing, relaxation techniques, and counseling.[58] Among them, CBT with taper appears to show promising results over the initial 3-month period.[59]

When considering pharmacologic treatment, the mainstays of treatment address withdrawal symptoms as well as continued avoidance of misuse. Abrupt discontinuation of benzodiazepines in a patient who has been taking them for longer than 1 month can lead to serious withdrawal symptoms including seizures or even death. As a result, the recommended treatment is to gradually taper the medication over 8–12 weeks, with an initial reduction the first week between 5% and 25% of the starting dose, with further reductions of 5% to 25% every one to four weeks as tolerated by the patient.[60] Supra-therapeutic doses can initially be decreased by 25% to 30%, and then further decreased by 5% to 10% daily, weekly, or monthly, as tolerated.[60] To reduce discomfort from withdrawal, some studies indicate that adjunctive medications, carbamazepine (Tegretol), imipramine, divalproex (Depakote), and trazodone can be used during the taper.[61] Because some of the most commonly cited reasons for benzodiazepine misuse are to aid sleep and relaxation, other agents such as trazodone and mirtazapine which are two agents that are relatively low in anticholinergic side effects and provide a better safety profile for older adults can be used instead. Additionally, the use of SNRIs, such as venlafaxine or duloxetine (Cymbalta), may help patients who suffer from chronic pain.

Opioids and Narcotic Analgesics

Prevalence

In examining Opioid Use Disorder (OUD) among older adults, it is important to differentiate between two primary types of opioids: prescription opioids and illicit opioids such as heroin. In the older adult population, opioids are typically acquired through medications prescribed for them or for others.[62] Opioids, when prescribed, are used for their potent analgesic properties. However, their properties of activating the reward pathways within the brain increase the likelihood of dependency and subsequent misuse. While the causes are complex, it has been postulated that increased misuse among older adults is due to age-related emotional and physical changes, such as isolation, loneliness, anxiety, mobility issues, and chronic pain due to diseases more commonly affecting older adults (ie, arthritis, nerve damage, cancers).[51] Recent US demographic trends show an increasing proportion of older adults, with close to 1 million Americans older than 65 years old, living with OUD.[63] Data obtained from 1996 to 2012 from New York Department of Health show that there was an increase in prevalence of opioid use for those aged 60–69 from 1.5% to 12%, and for Americans older than 70 years old prevalence increased from 0.2% to 1.1%.[64,65] A cross-sectional analysis of Medicare and Medicaid data from 2013 to 2018 found that the prevalence of OUD among older adults ≥65 years was found to have tripled over the three-year time span with the highest prevalence of OUD. From 2016 to 2017, the largest relative change among age groups regarding opioids involved overdose deaths for persons aged ≥65 years with a 17.2% increase; during this same time

period, heroin-involved overdose death rates also increased among the ≥65 years age group; they experienced the largest relative rate increase at 16.7%.[66]

Treatment

While psychosocial interventions can help patients to accept a new diagnosis, and the approach should be tailored to the individual, the mainstay of Treatment for OUD is pharmacotherapy. Abstinence alone from opioids has been shown to be ineffective. The three main medications approved for the treatment of OUD in the general population are buprenorphine (with or without naloxone), methadone, and naltrexone.[67] The recommended treatment for OUD in older adults is the same regimen used in other populations as age-specific data is scarce.

Among these, buprenorphine-naloxone or buprenorphine maintenance are widely considered the first-line therapy for opioid use disorder among older adults.[68] Buprenorphine is a mu-receptor partial agonist and kappa- receptor antagonist, and there are several formulations approved for pain management and OUD. They are available as sublingual or buccal buprenorphine (2 mg or 8 mg) tablets or films, with or without naloxone; the products without naloxone are available for patients who cannot tolerate the buprenorphine-naloxone combination.[69,70] Another formulation of buprenorphine available for treating OUD is available as an extended release monthly injection (100–300 mg; Sublocade); a 2020 study found that it led to overall positive patient-centered outcomes, high satisfaction with treatment, and promoted recovery.[71] Because of its better safety profiles, lower risk of QTc prolongation, and fewer clinically significant drug interactions, buprenorphine is the safer option among the other choices of medication for OUD.[72]

Methadone is a mu-receptor agonist that can only be dispensed through a federally licensed opioid treatment program, and it is administered once a day. During the induction phase, the initial dose should not exceed 30 mg, and subsequent daily doses can range from 60 to 120 mg.[73] Methadone is metabolized by the cytochrome P450 system, so there will likely be drug–drug interactions among older adults on multiple medications, and it is also known to have QTC prolongation effects, so semi-annual or annual EKG are recommended.[74] Another major clinical consideration for methadone, is some studies have shown there is a risk of overdosing on it within the first 4 weeks of treatment.[75]

Naltrexone is a mu-receptor antagonist that can be initiated only after the patient has detoxified from opioids and been free from using opioids for at least 7 to 10 days. Naltrexone comes in two formulations: oral and intramuscular extended release naltrexone (XR-NTX). However, the oral formulation of naltrexone has a high rate of patient nonadherence, as there is the need to go through opioid withdrawal prior to initiating treatment.[76] Some studies have tried to compare the efficacy of XR-NTX to buprenorphine, and the current evidence suggests that it is more challenging to initiate XR-NTX treatment because it usually requires medical management of opioid withdrawal first. Nonetheless, once started, XR-NTX and buprenorphine were equally safe and effective.[77] One of these studies showed that when patients were randomly assigned to each treatment arm, the patients in the XR-NTX group had a higher rate of relapsing at 65% in XR-NTX group compared to 57% in buprenorphine-naloxone group.[78] Most current guidelines for adults with OUD do not recommend naltrexone as a first-line option; instead, it can be used in cases where buprenorphine or methadone are contraindicated, where agonist treatment is not accessible, or in cases where they have already abstained from opioids for a sufficient period of time.[69,79] All medications should be used with caution, keeping in mind that older adults often have more medical comorbidities, including chronic pain, and are usually on multiple medications that can lead to drug–drug interactions.

Illicit Drugs

The current literature offers limited data concerning illicit drug use among older adults. When researching this demographic's engagement in illicit drug misuse, it is important to discern whether the behavior represents a recurrence of past drug habits or the introduction of previously unencountered substances. This distinction holds significant implications for understanding this age group's pattern and potential risks of drug misuse. It was observed that individuals in the "baby boomer" generation had more exposure to illicit drugs when younger and were more open to substance abuse as older adults. The drugs commonly used when an individual was a young adult often influenced that individual's drug use in old age.

Cocaine

A prospective blinded observational study of n = 5677 older adults (60 years+) over a six-month period at a large urban ED in Michigan found that nearly 2.0% of older adults tested positive for cocaine during urine drug screenings. The cocaine users were more likely to be younger (66.4 ± 7.2 vs 76.0 ± 8.7 years), more likely to be male than female (88.9% vs 46.6%), and more likely to be diagnosed with drug or alcohol abuse as compared with the cocaine-negative patients.[80] Given these findings, it becomes evident that further research is necessary to better understand the extent of cocaine use among older adults. Current data does not support any singular pharmacologic protocol for treating cocaine use disorder. Nonetheless, there is substantial evidence supporting the efficacy of psychosocial interventions, including individual and group therapy sessions.

Amphetamines/Methamphetamines

There are limited data regarding amphetamine and methamphetamine misuse in older adults. A study comparing positive methamphetamine screens in individuals 55 and older showed an increase from 2009 to 2018, from 2% to 8%. In 2017, 10.6% of individuals who presented to the hospital for overdose of amphetamine-like substances were 55 and older.[81] Much like treatment for cocaine use disorder, the mainstay of treatment for amphetamine/methamphetamine use disorder is through psychosocial methods such as individual and group therapy.

Hallucinogens

Hallucinogens, drugs that alter sensory perception, include psilocybin and D-lysergic acid diethylamide (LSD). A 2010 study examining hallucinogen use showed a prevalence of 1.3% in older adults, and a later study using data from 2012 to 2013 showed a prevalence of 1.74% for lifetime hallucinogen use in older adults.[82] There is no established protocol for treating hallucinogen misuse. Current treatment is typically limited to symptomatic treatment in cases of intoxication.

Conclusion

Substance misuse in older adults is a major public health concern that is often underdiagnosed. The prevalence of alcohol use disorder (AUD) and cannabis use disorder (CUD) in this demographic is increasing, with a substantial portion of older adults reporting use of these substances. The legalization of cannabis in the US has also increased the percentage of older adults using medical marijuana to target conditions like sleep disturbances and chronic pain. This trend, coupled with the unique health implications and challenges it presents, underscores the need for comprehensive and tailored approaches to prevention, screening, and treatment.

The treatment of substance misuse in older adults requires a multifaceted approach that considers the unique needs of this population. Polypharmacy and multiple chronic medical comorbidities prevalent in this unique population make tailoring pharmacotherapy for substance use more challenging. Treatment includes pharmacological interventions, as well as non-pharmacological interventions, such as cognitive-behavioral therapy, motivational interviewing, and 12-step programs as well as medication-assisted treatment for AUD and OUD. However, the availability and accessibility of age-appropriate treatment services are often limited, underscoring the need for increased attention and resources in this area. Overall, substance misuse in older adults is a complex issue that requires a comprehensive and nuanced approach. As our understanding of this issue continues to evolve, it is crucial to continue to conduct research and develop interventions that are tailored to the unique needs and challenges of the older adult population.

Disclosure

The authors report no conflicts of interest in this work.

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