Review Article

Forensic Aspects of Substance Use in Older Adults

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ABSTRACT

Older adults are at high risk of developing more severe consequences of substance use. Due to aging, they may also have multiple medical and psychiatric comorbidities as well as cognitive impairment. This may lead to forensic issues both in terms of civil and criminal matters. This article will review the forensic issues of substance use and their relevance to the older population in particular.

Keywords: Older adults, substance use, addiction, forensic aspects

Substance use disorders are chronic disorders that run a relapsing course. They cause significant morbidity and mortality. According to the latest Global Burden of Disease study from 2019,[1] 5.0%, 6.3%, and 2.9% of the disability-adjusted life-years (DALYs) in the age group of 10–49 years is attributed to smoking, alcohol use, and drug use, respectively. For the age group of 50–74 years, 15.5% and 5.0% of DALYs are attributable to smoking and alcohol, respectively. Smoking and alcohol use commonly feature in the risk factors for the burden of disease across all ages. Recently, a nationwide survey about the magnitude of substance use in India found a high prevalence of substance use.[2] This prevalence was 14.6% for alcohol use, 2.8% for cannabis use, and 2.1% for opioid use. Another methodologically robust study done for monitoring tobacco use found an overall prevalence of 28.6%.[3] These studies, even though systematic, have not looked at the prevalence of substance use in the elderly in particular. The elderly population accounted for around 8.6% of the total population of India, according to the Census of 2011. This number is estimated to rise to 19.5% (i.e., 319 million persons) by 2050.[4] With such a huge population and considering the various factors that make the older population more vulnerable to adverse effects and complications of the use of substances, it is important to keep in mind their impacts on various dimensions of life, including the forensic aspects. Some of the important forensic aspects of substance abuse in older adults are laws related to substance use, the relationship of substance abuse to crime, violence, suicide, and elder abuse.

Epidemiology of Substance Use in the Older Population

The majority of studies for the epidemiology of substance use in the elderly are from Western countries. Alcohol is the most common substance of abuse according to these studies.[5] Recently conducted US National Survey on Drug Use and Health showed that 14.9% of adults aged more than 65 years consumed alcohol at levels that can be considered as high-risk drinking.[6] These numbers increase to 20% if the population visiting health-care facilities are considered. These numbers for tobacco use and illicit substance use are 8.4% and 5.7%, respectively.[6] Few studies from India have looked at the epidemiology of substance use, with most studies looking at alcohol use and related disorders in older adults.[7] Also, these studies have used different definitions for substance use and use disorders, have heterogeneous populations, and have recruited samples at different settings. The National Mental Health Survey 2015–2016[8] has found the prevalence of alcohol and nicotine use disorders in the elderly population (above 60 years of age) to be 4.07% and 26.34%, respectively. The prevalence of any substance use disorder was 27.785% compared to 22.44% in all populations. The prevalence of alcohol use in the older population was around 4.5% in a community sample.[9] Among people aged 45–65 years, 39.8% and those aged 65+ years, 41.4% were found to be current tobacco

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HOW TO CITE THIS ARTICLE: Ghadigaonkar DS, Kandasamy A and Sivakumar PT. Forensic Aspects of Substance Use in Elderly. *Indian J Psychol Med*. 2021;43(5S):128S–133S.

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Submitted: 13 May. 2021
Accepted: 2 Sept. 2021
Published Online: 8 Oct. 2021

ACCESS THIS ARTICLE ONLINE
Website: journals.sagepub.com/home/szj
DOI: 10.1177/0253717621104795 7

users according to a nationwide survey.[3] Most older adults with substance abuse are likely to be those with early onset of substance abuse at a younger age. Mental health issues like depression or psychosocial problems like loneliness, stress, role/identity loss, etc., can contribute to late-onset substance abuse.[10]

Salient Features of Substance Use in the Older Population

The older population is at a higher risk of developing problematic substance use and having more severe adverse effects and consequences of using substances.[5] Various physiological and psychosocial factors make older adults more vulnerable. The physiological factors include a decrease in lean body mass and total body water to total body fat ratio, decreased ability to metabolize drugs by the liver, increased permeability of the blood–brain barrier, and increased sensitivity of the nervous system to the effects of the drugs. Various psychosocial factors such as loss of job, change of social roles, and social isolation make the older population more vulnerable to substance use. Older people have more medical comorbidities such as diabetes, hypertension, along with psychiatric comorbidities like anxiety, depression, or sleep difficulties. Many of these patients may get prescriptions of psychotropic agents like benzodiazepines by general practitioners because of their rapid action.[11] These patients may develop iatrogenic dependence. Many factors such as female gender, social isolation, and comorbid psychiatric illness may lead to excessive use of prescription drugs.[12]

Substance abuse can present differently in older adults compared to young adults.[13] Thus, making a diagnosis of dependence can become difficult. For example, tolerance to substances may not develop if the person develops problems even at low levels of intake of substances. A lot of time may be spent using substances, and other activities may be given up because of social reasons such as unemployment and boredom, and not necessarily because of the salience to the use of substances. It is thus important to use screening tools or questionnaires that are sensitive to these issues.

The elderly population is also at a higher risk of violation of their basic rights, abuse, and neglect.[14] Concurrent substance use can amplify these problems multifold. Other issues such as the capacity to make a valid will can be questioned when the older adult has cognitive deficits or concurrent substance use—necessitating assessment. From a psychiatrist's perspective, substance use disorders in the elderly thus become an intersection of geriatric psychiatry, addiction psychiatry, and forensic psychiatry. This article will look at the various forensic and related aspects that one should be aware of while handling elderly clients with substance use.

Also, we need to be aware of the neuropsychiatric sequelae of substance use in the elderly, especially alcohol use. Chronic alcohol use can lead to neuropsychiatric complications that may impair a person's capacity to understand the nature and consequences of their actions. These include Wernicke's encephalopathy and Korsakoff's syndrome (Amnestic syndrome). It is usually associated with nutritional deficiency and can present with vitamin deficiency syndromes like pellagra.

Wernicke's Encephalopathy[15]

Wernicke's encephalopathy is an acute neuropsychiatric syndrome caused by the deficiency of thiamine. This deficiency can be because of chronic nutritional deficiency or because of poor absorption or excess loss. It is known by a triad of ataxia, ophthalmoplegia, and global confusion. However, most patients may not show all the symptoms mentioned in the triad. Thus, a new operational criterion is used for the diagnosis. It requires the presence of any two of (a) dietary deficiencies, (b) oculomotor abnormalities, (c) cerebellar dysfunction, and (d) either an altered mental state or mild memory impairment. The treatment for this condition is parenteral supplementation of a high dose (1,500 mg per day) of Thiamine.[16]

Korsakoff Syndrome

Korsakoff syndrome is a residual syndrome in patients who had Wernicke's encephalopathy. It is characterized by anterograde with variable retrograde amnesia. It may also present with confabulations and apathy. Although other cognitive domains are generally preserved, patients may also have executive dysfunction and other cognitive and behavioral symptoms.[17] Some patients may show improvement in cognitive functions. Many continue to have irreversible cognitive impairment.

Pellagra/ Pellagrous Encephalopathy[18]

Pellagra is a syndrome characterized by dermatitis, diarrhea, dementia (3 Ds), and finally death if untreated. It is caused by deficiency of Niacin and is seen in cases of chronic alcohol use and subsequent nutritional deficiency. In the acute presentation, it can present with cognitive symptoms similar to those of Wernicke's encephalopathy.

The above cognitive impairments because of alcohol use will be increasing the vulnerable mental status in the elderly and affect the capacity to make decisions in different situations.

Alcohol-Related Dementia

Chronic use of excessive alcohol has increased the risk for dementia either due to neurotoxic effects of alcohol or due to the effects of associated nutritional deficiency. There is evidence for neuroprotective benefits of low or moderate use of alcohol. But this evidence has methodological limitations. The recent evidence has strongly supported the possibility of neurotoxic effects of heavy alcohol use. It will be challenging to recognize the cognitive deficits early in patients with heavy alcohol use as the effects of intoxication will confound the neurocognitive impairment.[19]

Forensic Aspects of Substance Use and Their Relevance to the Geriatric Population

Dealing with forensic aspects of substance use requires sufficient awareness of the legislations: acts and laws that protect patients' rights, laws controlling the availability and use of licit and illicit drugs, or laws regarding criminal responsibility, capacity to stand trial, or

testamentary capacity. This section will have a brief overview of these aspects and their relevance to the elderly population.

Laws Regarding the Patients Seeking Treatment for Substance Use

The Mental Healthcare Act 2017[20]

The Mental Healthcare Act 2017 (MHCA 2017) came into effect on April 7, 2017, replacing the previous Mental Health Act, 1987. This Act was prepared "to provide for mental healthcare and services for persons with mental illness and to protect, promote and fulfill the rights of such persons during delivery of mental healthcare and services." In this act, mental illness is defined as "a substantial disorder of thinking, mood, perception, orientation or memory that grossly impairs judgment, behavior, capacity to recognize reality or ability to meet the ordinary demands of life, mental conditions associated with the abuse of alcohol and drugs." This act, therefore, provides a framework and guidelines for the treatment of patients with substance use disorders.

MHCA 2017 has emphasized the rights of persons with mental illness while undergoing treatment. It also has provisions for making mental health-care and treatment decisions based on capacity to make decisions and preparing advance directives and appointment of a nominated representative.

There are, however, multiple issues that need consideration while implementing the MHCA in the context of substance use disorders.[21] These issues include understanding and applying the concept of informed consent in the context of substance use such as (a) the patients and their family may be in a desperate state while seeking the treatment, (b) defining the "harm to self and others" in patients who are unwilling for treatment, and (c) position of coerced treatment under MHCA.

The Mental Healthcare Act (MHCA), 2017, does not have specific provisions for assessing and treating elderly patients. However, it mandates the development of old-age mental health services. In MHCA, the capacity to make mental health-care and treatment decisions is based on the ability to understand the information or appreciate the reasonable consequences of their decisions or to communicate such decisions. However, the inability in any of these three; that is to understand the information, appreciate the consequences of decisions, or communicate such decisions can lead to impaired capacity to take such decisions.[22] Older adults are at risk for neurodegenerative disorders like dementia, which can permanently reduce their capacity to make decisions or develop short-term problems like delirium due to various underlying causes. The elderly with substance abuse have an increased risk for delirium, dementia, and other mental health conditions like psychosis. Understanding the provisions of MHCA, 2017, would ensure appropriate management of elderly with substance abuse without violating the rights of these individuals.

Laws Governing Availability and Use of Licit Drugs

Tobacco, alcohol, and bhang are considered legal substances in India. The laws governing the availability and use of these substances are as follows.

Cigarettes and other Tobacco Products Act (COTPA), 2003[23]

The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) Act was enacted in 2003. Its provisions include the prohibition of use of tobacco products in public places, prohibition of the sale of tobacco products to minors, prohibition of advertising of tobacco products, pictorial warning on the packets of cigarettes/tobacco products, and the punishments for violation.

Alcohol Laws of India

Laws governing alcohol differ from state to state. The legal drinking age in India is 18–25 years based on the state.

Advertising of alcoholic beverages is prohibited under the "Cable Television Network (Regulation) Amendment Bill."[24]

The Motor Vehicles Act, 1988 (its latest amendment Indian Motor Vehicles (Amendment) Act, 2019),[25] prohibits driving under the influence of alcohol or drugs. It sets a limit of blood alcohol of 30 mg per 100 ml of blood, above which driving is punishable. The punishment has been recently increased to a fine of rupees 10,000 or imprisonment, which may extend to a term of 6 months or both for the first offense and a fine of rupees 15,000 or imprisonment which may extend to a term of 2 years or both for a repeat offense. The permissible limit of blood alcohol level for driving is not different for the elderly. However, given higher sensitivity, the elderly driving capacity can be impaired even when the blood alcohol level is within the permissible limit. They also have a higher chance of drug interactions.

The relevance of the above statutes in the elderly needs to be reevaluated. Alcohol and tobacco are the major contributors to general medical disorders, especially noncommunicable diseases, and motoric and cognitive disabilities in the elderly population. Elderly individuals with cognitive impairment may have an increased risk of violating these legal provisions when they have substance abuse. Sensitization of the caregivers about this risk will be helpful in the timely recognition of these problems to prevent legal issues in the elderly with substance abuse.

Laws Governing the Prescription of Pharmaceutical and Psychotropics Drugs

Drugs and Cosmetics Act 1940[26]

Drugs Act was originally passed in 1940 and has undergone several amendments and is currently known as the Drugs and Cosmetic Act. The last amendment to the Act was made in 2017. It is an Act to regulate the import, manufacture, distribution, and sale of drugs (and cosmetics). All the prescribed drugs are divided into various schedules. Almost all psychotropic drugs, including

benzodiazepines and pharmaceutical opioids, are included under Schedule H, which means that they cannot be purchased over the counter without the prescription of a qualified doctor. These prescriptions must be written in duplicate, and the pharmacist should retain one copy for two years. Details like the name and address of the prescriber, the patient's name, the drug issued, and the quantity supplied need to be preserved for three years.

Furthermore, the psychotropics packages come with a warning stating, "To be sold by retail on the prescription of a Registered Medical practitioner only." This helps in reducing the over-the-counter dispensing of psychotropic drugs, which can be habit-forming. But unfortunately, in our country, the OTC dispensing of psychotropic drugs remains unregulated at the ground level. This is important for the older population as this factor will become an enabler of the abuse of sedatives and hypnotics. Patients with early stages of cognitive decline and personality change as part of frontotemporal dementia have increased vulnerability to the abuse of sedatives and hypnotics. Some of them may develop increased usage of these drugs due to memory impairment or compulsive behavior.

Laws Governing Availability and Use of Illicit Drugs

Narcotic Drugs and Psychotropic Substances Act (NDPS Act), 1985[27]

The Narcotic Drugs and Psychotropic Substances Act, 1985, came into effect on November 14, 1985, and has been amended thrice till now, the latest amendment being in 2014. This Act "prohibits a person from the production/ manufacturing/ cultivation, possession, sale, purchasing, transport, storage, and/ or consumption of any narcotic drug or psychotropic substance." This Act has defined the penalty based on the quantity of the substance involved. It also has provisions for immunity to persons charged with drug consumption if they are willing for deaddiction. The 2014 amendment relaxed the restrictions on the essential narcotic drugs making them more accessible. It also removed the death penalty for a repeat offense involving the trafficking of large quantities of substances. It also increased the punishment for offenses involving small quantities of substances to imprisonment that can extend up to 1 year from 6 months previously. Now, many of the psychotropics and pharmaceutical drugs abused by the elderly are under the purview of this Act. The law doesn't focus on the specific aspects regarding elderly abusers.

Laws Dealing with Criminal Responsibility (Including Insanity Defense)

In India, the Indian Penal Code (IPC)[28] Section 84 deals with the act of a person of unsound mind. It says, "Nothing is an offense which is done by a person who, at the time of doing it, by the reason of unsoundness of mind, is incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to law." A person is held responsible for his criminal act only if it is proven beyond doubt that he/she has committed the act (*actus rea*) and that he/she acted on his own free will and intentionally (*mens rea*).

In cases of intoxication with substances, IPC Section 85 says, "Nothing is an offense which is done by a person who, at the time of doing it, is, by the reason of intoxication, incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to law; provided that the thing which intoxicated him was administered to him without his knowledge or against his will." However, an intoxicated person (voluntary drunkenness) is criminally responsible if he has the knowledge or intention of committing a crime, according to Section 86 of IPC.

In cases of withdrawal state like delirium tremens, which is a complicated and severe form of withdrawal from chronic heavy alcohol use, there is clouding of consciousness, hallucinations, agitation, and marked tremulousness. The person is confused and is unaware of his surroundings. Such a person is not aware of his actions and consequences and is not considered criminally responsible.

Cognitive deficits resulting from a neurodegenerative process like dementia during old age and those resulting from chronic substance use, for example, alcohol-related dementia, result in impairment in cognitive capacity resulting in failure to understand the nature of one's act and its consequences.

Competency to Stand Trial

Competency to stand a trial at the court of law is brought into question when the accused: (a) Was of unsound mind when the alleged crime was conducted, (b) Is of unsound mind and cannot plead, (c) In the case of capital punishment, when the condemned person is of unsound mind. The competency is assessed for the time of trial. Following components are assessed: (a) Ability to understand the nature and object of the proceedings, (b) Ability to consult with a lawyer with a reasonable degree of rational and factual understanding of the proceedings, (c) Ability to follow proceedings of the trial, (d) Ability to assist in the preparation of the defense.

The capacity to stand trial may get affected during intoxication with substances, during withdrawal, or in case of cognitive deficits.

Civil Responsibility

Civil responsibility is discussed when preparing a will, distributing property, and making a valid contract, also called testamentary capacity.

Testamentary Capacity

Testamentary capacity is the ability to make a valid will. Capacity is present if a person has an intact understanding of the nature of will-making, knowledge of one's assets, knowledge of persons who have reasonable claim to be the beneficiaries, understanding of the impact of distribution, ability to express wishes clearly and consistently. The person making the will should be free from any delusions that may influence the distribution of the asset. The above issues are equally relevant to the elderly population, too, if not more.

Elder Abuse and Substance Abuse

Elder abuse can be physical, psychological, financial, sexual, or neglect. The prevalence of elder abuse is around

15%.[29] A study evaluating the role of substance abuse in elder abuse has shown that substance abuse is more common in the perpetrators of elder abuse than the victims of elder abuse.[30] The elderly with substance abuse had an increased risk for neglect. Many elderly individuals live alone or with their spouses. The elderly with substance abuse have an increased risk of being violent and physically aggressive towards the spouse and other family members. They are also more vulnerable to psychological and financial abuse.

Suicide and Substance Abuse

The elderly population has an increased risk for suicide. Elderly with depression and substance abuse have a higher risk for suicide attempts as well as completed suicide.[31] Recognizing the risk for suicide in elderly with substance abuse living alone or those with depressive symptoms can help in early intervention and prevention of suicide.

Other Challenges in the Older Population

Older adults have a higher risk of other comorbidities, including noncommunicable diseases. Neurodegenerative disorders such as dementia, Parkinson's disease, and frontal lobe syndromes may predispose older adults to a higher risk of substance use. Drugs like those used in Parkinsonism are known to cause disinhibition and may lead to late-onset substance use and behavioral changes. Late-onset substance use in the absence of any such prior history should be evaluated for such causes.

Summary and Future Directions

The older population is noted to be at a higher risk for substance use related consequences. Systematic studies for the estimates of substance use in the elderly are lacking. A nationwide study on the profile and patterns of substance use in the elderly will help us reframe the legal and policy aspects according to the magnitude of the problem in this population keeping their needs in mind. Current laws governing the availability and use of legal and illegal substances and the ones for treatment-related procedures and decisions do not have any specific provisions for the elderly population. There is a need for such provisions considering the additional risk of abuse, institutionalization, and neglect in this population.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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