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Substance Abuse and Societal Impact

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Abstract

Despite the knowledge of public health authorities working all over the world, the prohibition of drugs and the criminal activity which it causes remains a continuing issue that society faces. Why is this still happening and how did we let it get this far? A multilevel analysis of the etiology, maintenance and consequences of substance use would facilitate better understanding. According to various academic paradigms, all current explanations can be classified into three types – Biomedical, Psychological and socio-ecological. But, these approaches rarely examine how genetic, psychological, social, cultural or environmental factors interact with each other. To effectively combat substance abuse, it is essential to examine the psychological, cognitive, socioeconomic, familial and cultural profiles of different social classes. There are variations in susceptibility, motivation, response to actual use, and a pathway of social maladjustment. Substance use may occur among all populations, but may manifest differently due to distinctions in contexts and cultures. The concept that one model or one intervention fits all communities is an oversimplification or is generally ineffective. In the future, study will have to examine how drugs can lead to varying levels of addiction and harm as well as social consequences. How do these different users are affected by the social background, their treatment necessities, and the risk of relapsing? Most literature does not stress that there are differences in drug effects of different groups, but there is very little research to show this. It is important to close this gap to enhance prevention and treatment strategies.

Keywords: Substance Abuse, Multilevel Analysis, Social Determinants, Addiction Variability, Drug-Specific Effects.

Introduction

The impact of substance abuse is pervasive. It affects all levels and sectors of society independently of age, gender or income (1). If left unchecked, substance abuse will persist, with potentially dire consequences (2). It is estimated that one out of every three families in the USA is affected by substance abuse (3). Failure to address this pressing social problem will lead to increased neglect, homelessness, school failure, child abuse, domestic violence, violence against women and other social problems (4). Families with substance-abusing members are often dysfunctional in terms of the roles individuals take on, the boundaries that exist, the interaction of members and norms (5). Negative social impacts unfold from the family onto the community and the larger society (6).

As a consequence of substance abuse, the role, functioning and expectation of the family will be different from those of a normative, healthy family (7). These changes, in turn, result in diminished parenting skills and chronic unmet emotional need for children and spouses (8). This sets in motion both a cycle of abuse and passive acceptability of abuse as normal, thus perpetuating the intergenerational cycles, and the unconscious reward systems that trigger

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further craving (9). High levels of family socioeconomic stress, disruption and dysfunction increase the likelihood of problematic substance use by spouses (10). Affected individuals are often ignored and considered untouchable in a paternalistic community or at the very minimum a family secret (11). The community tension will build up until a catastrophically public event destroys many lives (12). Studies suggest that a community where members are involved, able to depend on each other and support one another is protective against problematic substance use (13).

Understanding Substance Abuse

Substance abuse does exist according to lay people's understandings of substance use and abuse. Substance abuse falls along a continuum of use type and an understanding of the term substance abuse should incorporate how lay people define substances, who is abusive and the data used to make such a judgement (14). Some participants accept the term substance as it is defined strictly according to the World Health Organisation, while others widen the definition and discussion of substances to cover the alcohol and drug industries and lower classes of substances (15). It is evident that despite the public emphasis placed upon illicit drug use, tobacco and alcohol have been more readily accepted abuses (16). Different terms to describe those who abuse substances were given including addict, abuser and drug user (16). However, perceptions of involvement with illicit drugs and primary use of social drugs differ significantly across the individuals interviewed (17). Each of the terms carries with it different social judgments and consequences; nevertheless, lay people approach many sensitive and private concerns with a good deal of personal cautiousness (18). The term abuse encompasses the broadest set of information sources for making a judgement about substance abuse and enduring knowledge of long standing populations and repeated problems which makes for a robust discussion (14). Public enlightenment does not match private understanding in the case of substance abuse (19). Substances have a large part to play in lay people's characterisation and explanation of substance abuse (20). Social drugs, at least, appear to be abuse candidates in lay people's reasoning about substance abuse (20). Substance abuse, as an exception to everyday living but itself a part of human life, is culturally bounded and extensive, with both public and private forms (21). It is the way that the moral character of a person is defined, realised and judged in lay reasoning about substance abuse (22). Within this understanding, lay people's friendship through informal discourse overlaps with a body of cultural entities as the predicate presentation of individuals (23).

Definition of Substance Abuse

Substance abuse is a condition that decreases the quality and length of life of the abuser and impacts on persons who have close relationships with the abuser (24). Substance abuse is often associated with psychological problems, such as anxiety, panic, depression, and insanity (14). It is considered global, as many countries in different continents of the world worry about it (13). Unfortunately, substance abuse is a major concern in developing countries (25). Substance abuse includes both the abuse of illegal and legal substances, including cannabis, bang, glue, alcohol, and cigarettes, or the abuse of medication (26). Different substances have numerous and devastating impacts on children, families, schools, and society (27). Understanding these impacts may minimize the number of children who abuse substances and treat those who abuse substances (24).

Substance abuse is a growing public health problem that negatively affects many school children (28). It is one of the major challenges that society faces today since it is felt at various social,

professional, and age levels (29). Premises and public places are overrun by substance abusers (29). Streets are noisy as a result of fights among substance abuse dealers (30). Neighbourhoods are disrupted due to violence and other crimes committed by the addicts (31). Families in which one or more members are substance abusers experience stress and adverse effects on their health (32). Schools have been disrupted and even closed down because of substance abuse (32). Substance abusing learners' schooling and academic performance have worsened (28).

Substance abuse is becoming a serious public health problem across the world today (33). It is a growing problem among a particularly vulnerable group of school children throughout developing countries, including South Africa (34). Children are consuming addictive substances at an early age (below 20 years), leading to a serious decline in their quality of life as teenagers (34). Substance abuse is seen as socially unacceptable behaviour as it leads to pedophilia, prostitution, stealing, fraud, violence, and gang fights (32). Nevertheless, children substance abusers deny being negatively affected by what they do. Parents consider drugs a major threat, a peer-pressure concern, and a diversion from education (34).

Types of Substances Abused

Substance abuse refers to the misuse of substances (which are usually drugs) for purposes other than what is intended by a medical professional (31). Not everyone who uses substances becomes dependent or an abuser; susceptibility to substance abuse can sometimes be predicted on the basis of age at first use (35). Most people initiate substance use before age of 18, and the younger the initiation, the higher the risk of developing a subsequent substance use disorder (36). Not all substance use leads to abuse; tolerance, withdrawal and a compulsive pattern of use are predictors of abuse; occasional use to the point of intoxication, and social and legal problems (37).

The most widely used psychoactive substances, like alcohol, nicotine, and caffeine (also included are marijuana and other illegal drugs), have a history of human use dating back thousands of years, but better drug identification and synthesis techniques have led to the advent of new substances with more potent effects (28). Age of first use is often very much earlier than with previously used recreational substances; consequently, the drugs of abuse are much more likely to lead to adverse behavioral and social consequences (38). Also, there can be temporary spikes in use, either in a general population or defined at-risk group (37). An example is the emergence of stimulants such as methamphetamine in the late 1990s, or, more recently, the increasing rates of prescription opioid misuse among chronic pain patients (38). There is also an intense, fleeting energy behind group of drugs that take on a new form, often manufactured to circumvent existing prohibitions and laws—a common history of re-invention among drugs of abuse (38).

The following substances are abused: Alcohol, Barbiturates and other tranquilizers, Caffeine and caffeinated products, Cocaine and Crack, Designer drugs or other synthetic analogs, Hallucinogens, Hashish or marijuana, High, inhalants, Mescaline, Methaqualone, Methamphetamine, Morphine and other opiates, Nicotine and tobacco products, Non-prescription drugs, PCP, Potential drugs, Prescription psychiatric medications, Psychedelics, Psilocybin, as well as prescription or over-the-counter medications (39, 40).

Prevalence of Substance Abuse

Drug abuse is an important global public health issue with cemented epidemiological linkages to socio-economic deprivation, ill health, civil and political persecution, and gender inequalities

(1). Substance abuse compelled to take a drug or multiple drugs in excess, even though this action was not socially acceptable (41). Abuse began before 20 in an average of 60% clients (42). Lifetime dependence was found in 14.15% clients. Significant sex differences were noted (43). The availability and marketing of prescription drugs had a great impact on the development of substance abuse (44). The proportion of substance abuse among male was more than double that of female (44). Psychoactive substance abuse has escalated to epidemic proportions among youths of both sexes in the developing world including many of India's districts (45). In India, increased production, distribution, marketing, and availability of substances have hastened the rise of substance abuse as an urgent public health issue particularly among youths (46). Various types of substances such as alcohol, cannabis, heroin, cough syrup, solvent, and prescription drugs are abused (47). Availability and marketing of prescription drugs besides were greatly impacting the development of substance abuse (46). In India, the prevalence of substance abuse has been reported around 32-37% in different studies, the highest among the undeclared population (47). However, hardly any data were available on the epidemiological and socio-demographic correlates of substance abuse in the region (48). Society as well as individuals suffer from the misuse of drugs (48). Drug abuse is persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice (49). It continues to be a major public health problem globally (49). A considerable percentage of individuals in India utilize psychoactive drugs. Non-medical, non-prescription use of drugs was being widely prevalent across all population groups including those who were educated, well-off, and residing in urban areas (50). Dependency on illicit drugs is more prevalent among uneducated, migrant, lower socio-economic strata, tribal/semirural etc (50).

Causes of Substance Abuse

There is a serious threat to the health and well-being of America today: the threat of substance abuse (19). Young people are entering treatment for substance abuse at a striking rate (51). In America, there are now whole treatment facilities for adolescents (22). As more and more adolescents are entering treatment, it becomes increasingly important to understand who the substance abusers are (52). Substance abuse does not only affect the one who is using (53). It affects their parents, peers, school, and community. Substance abuse is not an individual family disease (54). As a result of drug and alcohol use and abuse, people come into contact with the community in more negative ways (55). The patterns of substance abuse are being given the recognition they deserve in the overall community, with the utmost importance placed on understanding the nature of the disease (56). Understanding is the first step towards prevention and treatment of the disease (57).

A drug is defined as "any chemical agent that alters the physiological or biochemical processes of the body" (36). Drug abuse may be defined as "the excessive use of any drug" (58). Drug addiction is established when the behavior of an individual demonstrates the compulsive use of the drug to maintain the state commonly referred to as "high" (59). There appear to be two forms of addictive drugs: physiological and psychological (60). A physiological drug is one that acts on the body to alter or modify physiological or biochemical processes (61). Psychological drugs are more complex, working through changes that take place in the central nervous system (58). Long before birth, a child lives in an environment filled with chemicals (52). These substances abound in foods, the air we breathe, and in the vitamins, medicines, and other things pregnant mothers ingest (61).

Also at that point should begin a distinction between the endless, incomplete chain of molecules that constitute the human genome (substance with a basal cellular effect) and chemicals that purposively, irrevocably, and instantaneously alter physiological or biochemical processes (62). The former code existence (a ratio of "noses" to "deliberate acts" that establish baselines between various phenotypes), while the latter produce impaired modelling or interaction strategies (the domain of biochemical interactions other than direct breaches of membrane ionic balance and channel integrity) (63). All information is representative (63). An example is nicotine in cigarette smoke, where the damaging element is not the tar, but the critter-borne, bacterial nicotine (64). Bacterial toxins use nicotine triglycerides and the POLINI bridge as nanometer wide, complex, self-replicating, coded chemical unit (65).

Biological Factors

Substance abuse, along with related problems and prevention efforts, has received substantial attention in research, public health, and political domains (64). Efforts to curb the problem have also been bolstered by increasing interest in the employability of behavioral and pharmaceutical means to prevent or mitigate substance abuses before or during the onset (65). Arguments over the morality of substance abuse have often led to clashes of beliefs and approaches (66). In many ways out of concern over growing drug abuse problems, a right-wing coalition of politicians and drug counselor advocates and a left-wing coalition of drug applicators and civil liberty activists seem each ardent in their belief that their approach to this complex area of human behavior is the right one (67). However, even though problem-drug availabilities and abuse trajectories in wide-spread belief circles normally diverge, the actual abused drugs often do not (68). Drugs are commonly grouped into natural and contrived categories (69). Natural drugs stem from living organisms, while contrived drugs originate from human interventions (69). The group of contrived drugs is much wider, and their abuse problems could be more relevant to epidemiologists (70). These drugs together with drugs common in homes or over-the-counter medications such as psychiatric drugs could be used recreationally or in study disciplines (71). Biological susceptibility to drug abuse is often overlooked in macro-level accounts of societal impact, especially in their consideration of cohort effects, but heavy pharmacologization of life situations and roles could lead to the onset of drug abuse and its related chronic labels in vulnerable individuals (71). However, potential biological factors should interact with individual and societal characteristics (72). A growing body of knowledge has been devoted to these aforementioned biological and societal factors in their interactions, and the existence of the need for knowledge should also have comparable yet less but new accounts (72). The aim of the chapter is to characterize how various biological factors seek their societal effects on substance abuse, describe environmental factors, and raise new avenues of inquiry (73).

Psychological Factors

Substance use is an innate behavior of humans that has evolved over time and is commonly seen in other animal species (74). When used socially and culturally, its moderate form is called use, which applies to tobacco, alcohol, and coffee drinking (74). However, when the substance use is compulsive, maladaptive, and leads to clinically significant distress or functional impairment, it is termed substance use disorders (SUDs) or substance abuse (SA), which is a pattern of maladaptive use of a substance that leads to significant impairment or distress (75). The primary symptoms of SA are impaired control, social impairment, risky use, and pharmacological criteria of tolerance and withdrawal. Children of parents with SUDs have a four- to eleven-fold

increased risk (75). The clustering effect of brain development and the risk of drug abuse is high in early and late adolescence, peaking from ages thirteen to fifteen and eighteen to nineteen (76).

Substance abuse and misuse are pervasive societal issues that include a wide variety of substances (76). The most commonly abused or misused substances include alcohol, nicotine, pain medications, club and rave drugs, caffeinated beverages, illicit drugs, tobacco, and other harmful substances like white spirit, paint, and glue (76). Substance abuse can have a devastating impact on the individual and their loved ones (77). It can lead to consequences such as depression, anxiety, paranoia, psychosis, gambling problems, aggressive behavior, dementia, hallucinations, suicidal thoughts, health issues, incarceration, job loss, and homelessness (78). These and other consequences can wreak havoc on marriages, parent-child relationships, friendships, and the social life of those affected (79). They can lead to feelings of sadness, frustration, hopelessness, and helplessness. Substance abuse can also have a significant economic impact on society, with costs for health care, law enforcement, and criminal justice (80).

Socioeconomic Factors

As of 2010, an estimated 22.6 million people over 12 had used illicit drugs within the past year (81). A continued increase in the availability of illegal drugs, compounded by the ailing economy and poor job market, could put even more citizens at risk (82). To better aid in understanding substance abuse initiated by heavy drugs such as marijuana, cocaine, and heroin, the factors that contribute or perpetuate drug abuse and dependence must be examined (83). Socioeconomic factors have been shown to affect levels of self-reported drug abuse behaviors (83). Using a multivariate analysis data set, this study examined whether personal income, household income, unemployment, and educational attainment acted as risk or protective factors on levels of self-reported drug abuse behaviors (84).

On account of the increased availability of illegal drugs, it is predicted that drug mortality rates will also rise (85). On the other hand, through the 1990s and early 2000s, substance abuse did not appear to rise in the West and Northeast, perhaps due to the power of community in those areas to combat the normative pressures placed by that culture (86). To prevent substance abuse in youth, it was found that a concentrated effort to educate the community on adolescent drug abuse be undertaken (87). To utilize the theoretical framework seemed to have had a strong impact on those particular areas, it is worth a try to implement this policy in other regions facing current rapidly growing drug abuse problems (88).

Consequences of Substance Abuse

Drug abuse has numerous damaging consequences affecting the life of the drug abuser but also going well beyond that to affect society as a whole (89). An understanding of the seriousness and futility of this catastrophic social problem can only be developed from an awareness of the foundations for drug abuse, its deep reach and its destructive capacity, both to the individual and to society (90). A brief overview of the social problems associated with drug abuse provides an opportunity to explore some of the deeper issues at play beneath the social problems, such as psychological and physiological mechanisms, differences in behavior as a result of these mechanisms and the potential for consequences of drug abuse (39). Moreover, social problems have shown a great destructiveness and a thermodynamic capacity to grow deeper and wider yet (90).

On a societal scale, substance abuse creates many of the devastating social problems that bedevil modern societies: crime and injustice, corruption, broken families and broken lives, poverty, intimidation, violence, social unrest and societal disintegration (91). The major drugs of abuse and social problems associated with them present a huge burden on all nations (92). Problems of drug abuse are centered on the social problems (92). Part of the reasons for the magnitude, depth and complexity of the drug abuse problem lies in the underlying biochemical and psychological problems of tolerance, dependence and addiction (93). The addictive drugs hijack the reward pathway intended for natural reinforcers (94). Rationality, judgment and will are switched off, and the abuser is rendered a slave to the substance with dramatic health, social and economic repercussions, both to the individual and to society (95).

At least in its moderate forms, drug abuse is often unrecognized, trivialized or rationalized away (96). Why then, with the social and personal devastation characteristic of drug abuse on the other side, temporally speaking and logically after the abuse has got out of hand, is the drug abusing behavior so often adopted in the first place? (97). Much of the answer may lie in the powerful chemical and psychological effects produced by drugs of abuse in the brain (98). Coupling their continuing use with increasingly aversive withdrawal effects that characterize dependence produces a very powerful treatment of the consequences of rationality, thought and free will (99). Once the psychological mechanisms of drug abuse are understood it becomes apparent that much of the havoc of drug abuse is wrought by a very pernicious path of least resistance (100).

Health Impacts

Drug abuse has many damaging consequences not only for the individual, but also for the society as a whole (65). Abuse of any substance can activate the brain's reward system. This impairment of normal brain functions resulted in poor judgement, circuit overload, and poor impulse control (101). Loss of inhibition and neglect of personal safety enable the person to engage in acts they would otherwise find unacceptable (39). As a consequence of drug abuse, the person incurred damage to the brain and physical health, as well as damage to his finances and social image (102).

Drugs of abuse have been found to activate some of the same areas of the brain that are responsive to natural rewards such as food or sex (103). In particular, rewards such as sex and drugs, food, money or anything else that is highly desired and sought, activate some of the same brain areas (104). Multiple brain areas are implicated in many functions such as reward, motivation, learning, inhibitory control, and executive function (104). The primary brain areas involved in drug abuse are the Medial Forebrain Bundle, Ventral Tegmental Area, Nucleus Accumbens, Amygdala, and Prefrontal Cortex (105).

Economic Costs

Substance abuse disorders are a growing area of concern for law enforcement agencies, mental health and chemical health treatment providers, and the community at large (106). Although there is an increasing awareness of this issue, it is needed to provide the various stakeholders with information about the estimated costs resulting from substance abuse disorders (107). The realization of the economic costs of substance abuse disorders provides a valuable point of comparison, in terms of magnitude, between the resources being invested in their prevention and treatment (106). In Maine, it was estimated that the costs resulting from substance use and abuse amounted to \$403 billion in 2010 (108). This translates into an annual cost of \$1,057 for every resident of Maine (109). As this is a conservative estimate, it is safe to say that the actual costs

are even higher (109). Crime and mortality accounted for the largest portions of the total cost, followed by lost productivity, health care, and property damage (110). At least 39% of the total costs of substance use and abuse were due to drugs. In 2010, it was estimated that 713 persons in Maine died of causes related to drug or alcohol abuse (110). Such mortality resulted in the potential loss of 15,896 years of life (111). All of these years of life lost were due to drug abuse, with alcohol accounting for none (111). Thus, the consumption of alcohol and other drugs creates costs that are currently born (at least partially) by society as a whole (112). As further proof of the need for substantially increased investments in the treatment and prevention of substance abuse disorders, it is noted that the vast majority of the costs resulting from substance use and abuse in Maine (\$387 billion) are not being addressed by public or private agencies (113). People with substance abuse-related difficulties face many barriers to treatment (113). For example, services may not be offered in the person's primary language, or access may be limited based on the time of day or proximity (114). Of central importance, most people in need of services do not view their substance abuse as a mental health issue and do not seek treatment (114). Treatment is unavailable for many people who recognize their need for it (115).

The Social Cost of Addiction

Addiction is a complex phenomenon that bears consideration beyond the individual (112). Consider for a moment addiction in Africa, that continent so rife with war, famine, poverty, exploitation, and corruption (113). Yet AIDS, another giant world problem, pales into insignificance compared with the scourge of addiction both now and for the generations to come (116). Because AIDS is the result of infection, it can be stopped almost overnight by moral behavior, education, and practice (116). But addiction, largely, is not a choice (116). Sometimes it is the consequence of a tragic accident or a genetic predisposition; sometimes it is seeking "the escape" (117). In an ever-increasing, frenetic, rat-race world, an anesthetic is too often sought to calm the panic, anxieties, and worries (39). Those individually suffering from addictions go through a slow descent into hell in which they are no longer themselves — a tragedy for all concerned, particularly for dependents (118). But society, too, suffers adversely (118). Death of family members, violence, crime, corruption, disease, poverty, food insecurity, exploitation of vulnerable people, and loss of productivity are but a few of the far-reaching consequences of addiction (119).

To fully appreciate this warning, it is necessary to consider the effects of quotidian drugs commonly regarded today as "legal" (120). Many experience the good effects of coffee, alcohol, and nicotine (120). However, every year, more than 200 million people will use an illegal drug — an additional 5% of the human race — and this exquisite pleasure will quickly turn to devastating pain (121). Chronic drug abuse leads to acute mortality; crime to fund addiction; joblessness; poor nutrition; homelessness; violence; domestic violence; loss of education; disease transmission; increased healthcare costs; cancer; poverty; street-corner insanity; death from overdose; and lifelong imprisonment (122). A faded, pathetic shadow of the once-vibrant individual will emerge — but only on the outside (122). Instead, a further chasm will open up with a tragic downward spiral (123). In seeking liberation from hell, oblivion might be better sought through sleeplessness and rumination, or despair and unfortunate death, than the agitated anxiety of repeated desperation for a fast endless solution that unfortunately cannot be found (124).

Impact on Families

The insidious nature of youth substance use is seen first in how there can be denial by parents regarding the severity of the situation (125). This was usually also paired with an inability to put the pieces together either individually or as a family (125). In regards to the former point, it was common for parents to often dismiss signs of problems with substance use as being just a typical phase (126). It was only the loss of privileges and escalating behaviors that tipped them off that something more severe was occurring (126). The length of this denial varied, with some parents going two years without concern, while others noted a sleepless night or similar experience as a defining moment in which they knew they had a big problem (127). A challenge for parents was being able to view the substance use through a different lens (127). Many parents began to vacillate between feelings of accusal and internalization regarding the blame for the problems (128). Interestingly, neither the designation of being ‘the bad kid’ nor ‘the good kid’ were adopted (128). Some parents transitioned fairly quickly to blaming the substance; however, a lack of understanding how it trumped relationships was a gap (129). This lack of comprehension then precluded dealing with many of the practical issues raised by the youth using substances (129).

Impact on Communities

Drug abuse is defined as the act of consuming an addictive chemical substance, either legal or illegal, in a manner that it may harm an individual or society (39). While many drugs are legal, such as alcohol, caffeine and nicotine, their abuse can have severe consequences (45). Furthermore, illegal drugs such as cocaine, heroin or methamphetamines are widely abused and an ever-growing problem in modern society (46). Many individuals are rendered unable to perform daily tasks as a result of drug abuse, while drug-related illnesses and injuries occur in greater numbers every year (3). Drug abuse has many damaging consequences not only for the individual, but also for the society as a whole (130). That is why it is important to understand how the abuse of those drugs can affect individuals, families and society as a whole (8). It is also essential to know the situations can arise which may lead to an impaired state, which can greatly affect how an individual behaves, as well as how they can cope when faced with such situations (55). It is also worth noting that drugs do not only include those that are illegal (6). A large number of those that are readily available can also easily lead to a harmful affect on the user and those around them (131). Addictive drugs hijack the reward pathway that is intended for natural reinforcers and in doing so cause harm both acutely and chronically to individuals and society (51).

Impact on Public Health Systems

Substance abuse has been a thorny public health concern throughout human history, and indeed a controversial one, as it involves the risk-benefit questioning of the use of proper psychoactive substances for human health and recovery (90). Historical documentation indicates that various forms of psychoactive substances had been actively adopted across cultures to alleviate human suffering and enhance social functionality (132). Since the Industrial Society and the Social Exclusion, there has been rising concern of public health experts regarding the possible abuse of certain kinds of psychoactive substances, with efforts in social monitoring and controls from the distribution of abusable psychoactive substances to criminalization of their misuse (133). In the past half century, despite progressive worldwide efforts through various governmental and community collaborations in tackling the public health problem of psychoactive substance abuse, it is apparent that substance abuse continues to be an increasing public health concern in

many societies (134). Prevention and treatment are the two main strategies commonly adopted to tackle the problem of substance abuse, with the former aiming to address the topical problem of substance misuse and recoverable damage before the occurrence of the event and the latter aiming to remediate the lasting fallout afterward (135).

Recovery Programs

Translational research aimed at improved health outcomes is a primary agenda of the National Institute on Drug Abuse and other major funders of addiction studies (136). Support for this goal has long taken the form of favorable research funding and publications, workshops on translating interventions into community practice, and dissemination initiatives aimed at local, state, and national service institutions (137). But mere research about addiction problems cannot alone meet these significant funding agencies' expectations for progress in research supported health outcomes (138). The population in need of these improved health outcomes must be engaged in active and potent roles in the planning, conduct, and evaluation of studies funded by these agencies (138).

Types of Recovery Programs

The family of recovery programs, which has continued to grow in complexity, diversity, and sophistication, is made up of several distinctive elements (138). To a large extent, the meaning of the term recovery and related language has been determined by a particular service or a family of services (139). Retreats and some wilderness programs, for example, may refer to an outdoor experience or weekend away with the intent of indicating a temporary respite from the pressures and turbulence of one's life (140). Generally, this narrow and perhaps misguided view of recovery is also reflected in former definitions of recovery mostly related to the absence of substance use or a particular period of abstinence (141).

Dating back to the origins of the 12-Step self-help movement, early abstinence was often supported by living in an environment devoid of any social context for alcohol and drug use (142). Broader support for sobriety and recovery also may include work or school settings that provide recovery-friendly environments that promote sobriety and recovery-positive attitudes among peers and co-workers (143). The Workplace Project has shown promise both as an employment support program for people in recovery and as a means of enhancing the workplace environment and attitudes about recovery (144). Some researchers have begun to examine the effectiveness of so-called collegiate recovery programs that have been innovated by universities over the last three decades in helping college students in recovery from addiction succeed in their academic endeavors and maintain sobriety (145).

Self-help groups comprise a large number of peers who are members of mutual aid societies (146). Fully independent self-help groups assume a collective, grassroots, organic governance structure (146). 12-Step groups are perhaps the best-known self-help groups. These involve meetings held in groups led by lay individuals, with or without formal coaching (147). They advocate a spiritual approach to recovery through a 12-Step treatment program (148). Meetings are usually disclosive and supportive, with circle processes offered (148). The members' anonymity outside the groups is given priority, often with pseudonyms used. While thousands of meetings occur at thousands of venues, no dues or fees are required, and no literature is sold (149). Following treatment, many early abstinent individuals are referred to such groups as part of aftercare and continuing care efforts (149).

Conclusion

Substance abuse and casual consumption exists in nearly all societies, cultures, religions, professional fields, age groups, occupations and social sectors (150). It is one of the best-documented global issues throughout history (75). Substance abuse is a public health problem and a breaking level for every level of society (86). It is most immediately harmful to individuals and their close families (135). It also leads to corruption and ruin of political powers, authorities, governance, public security, civil and social management, non-government organizations (NGOs), and communities (142). It could be devastating to developing countries, even affecting international relations (13). It is cruel, cunning and catastrophic but stealthy, gradual and systemic (11). With the arrival of a new millennium, the most vicious and fierce viciousness and threatening in relation to drug abuse and harm exist in developing countries, Africa, Asia, the Middle East (150). Over one hundred territories are confronted with an unprecedented situation of drugs and abuse (125). With a declining price and an increasing market of drugs, more regions have witnessed drug trafficking and abuse (141). Religious beliefs, customs and practices, social norms, values and morals were reportedly corrupted (138). Many countries experienced economic decline and political disintegration in connection with rampant drug trafficking, production, and abuse in the last fifty years (151). Careful investigation of the environment surrounding the first case(s) of drug abuse and detailed case studies on one or two of the unintended but very serious consequences which had been initially overlooked should be helpful (152).

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References

- Matson PA, Ridenour T, Ialongo N, Spoth R, Prado G, Hammond CJ, Hawkins JD, Adger Jr H. State of the art in substance use prevention and early intervention: Applications to pediatric primary care settings. *Prevention Science*. 2022 Feb;23(2):204-11. [springer.com](https://www.springer.com)
- Avena NM, Simkus J, Lewandowski A, Gold MS, Potenza MN. Substance use disorders and behavioral addictions during the COVID-19 pandemic and COVID-19-related restrictions. *Frontiers in Psychiatry*. 2021 Apr 16;12:653674. [frontiersin.org](https://www.frontiersin.org)
- Stover CS, Beebe R, Clough M, DiVietro S, Madigan L, Grasso DJ. Evaluation of a statewide implementation of fathers for change: A fathering intervention for families impacted by partner violence. *Journal of Family Violence*. 2022 Apr;37(3):449-59. [academia.edu](https://www.academia.edu)
- Madigan S, Deneault AA, Racine N, Park J, Thiemann R, Zhu J, Dimitropoulos G, Williamson T, Fearon P, Cénat JM, McDonald S. Adverse childhood experiences: a meta-analysis of prevalence and moderators among half a million adults in 206 studies. *World psychiatry*. 2023 Oct;22(3):463-71. [wiley.com](https://www.wiley.com)
- Miech RA, Johnston LD, Patrick ME, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the Future National Survey Results on Drug Use, 1975-2022: Secondary School Students. *Institute for Social Research*. 2023 Jun. [ed.gov](https://www.ed.gov)
- Weber A, Miskle B, Lynch A, Arndt S, Acion L. Substance use in pregnancy: identifying stigma and improving care. *Substance Abuse and Rehabilitation*. 2021 Nov 23:105-21. [tandfonline.com](https://www.tandfonline.com)
- Currie CL, Tough SC. ... childhood experiences are associated with illicit drug use among pregnant women with middle to high socioeconomic status: findings from the All Our Families Cohort. *BMC pregnancy and childbirth*. 2021. [springer.com](https://www.springer.com)

- Alhammad M, Aljedani R, Alsaleh M, Atyia... N. Family, individual, and other risk factors contributing to risk of substance abuse in young adults: A narrative review. *Cureus*. 2022. cureus.com
- Saladino V, Mosca O, Petruccelli F, Hoelzlhammer L, Lauriola M, Verrastro V, Cabras C. The vicious cycle: problematic family relations, substance abuse, and crime in adolescence: a narrative review. *Frontiers in psychology*. 2021 Jul 26;12:673954. frontiersin.org
- Lindeman SK, Titlestad KB, Lorås L, Bondas T. An unknown invisible intrusion. Impact of an adult family member's problematic substance use on family life: A meta-ethnography. *Drugs: Education, Prevention and Policy*. 2022 Sep 3;29(5):464-76. tandfonline.com
- Fitzgerald HE, Zucker RA. Socioeconomic status and alcoholism: The contextual structure of developmental pathways to addiction. *Children of poverty*. 2021. researchgate.net
- Stormshak EA, Matulis JM, Nash W, Cheng Y. The family check-up online: A telehealth model for delivery of parenting skills to high-risk families with opioid use histories. *Frontiers in Psychology*. 2021 Jul 7;12:695967. frontiersin.org
- Tambling RR, Russell B, D'Aniello C. Where is the family in young adult substance use treatment? The case for systemic family therapy for young adults with substance use disorders. *International journal of mental health and addiction*. 2021 Jan 4:1-2. springer.com
- Ranase A. Exploring Lay people's understanding of substance abuse. 2019. [PDF]
- Paquette CE, Daughters SB, Witkiewitz K. Expanding the continuum of substance use disorder treatment: Nonabstinence approaches. *Clinical Psychology Review*. 2022. nih.gov
- Hogue A, Becker SJ, Wenzel K, Henderson CE, Bobek M, Levy S, Fishman M. Family involvement in treatment and recovery for substance use disorders among transition-age youth: Research bedrocks and opportunities. *Journal of Substance Abuse Treatment*. 2021 Oct 1;129:108402. sciencedirect.com
- Stangl B, Kastner M, Park S, Ukpabi D. Internet addiction continuum and its moderating effect on augmented reality application experiences: digital natives versus older users. *Journal of Travel & Tourism Marketing*. 2023 Jan 2;40(1):38-54. researchgate.net
- Fatkin T, Moore SK, Okst K, Creedon TB, Samawi F, Fredericksen AK, Roll D, Oxnard A, Lê Cook B, Schuman-Olivier Z. Feasibility and acceptability of mindful recovery opioid use care continuum (M-ROCC): A concurrent mixed methods study. *Journal of substance abuse treatment*. 2021 Nov 1;130:108415. sciencedirect.com
- Izzat AA, Anghel L, Stefanescu B, Kantor C, Ciubara A. Prevention of psychoactive substance use. *Archiv Euromedica*. 2021;11(5):59-61. journal-archiv.euromedica.eu
- Roche DJO, Foster KT. Trauma and substance misuse: Charting heterogeneity in comorbidity dynamics, vulnerable populations, and treatment adaptation. *Journal of Dual Diagnosis*. 2023. tandfonline.com
- Throuvala MA, Griffiths MD, Rennoldson M, Kuss DJ. Perceived challenges and online harms from social media use on a severity continuum: a qualitative psychological stakeholder perspective. *International journal of environmental research and public health*. 2021 Mar 20;18(6):3227. mdpi.com
- Bailey A, Hayes K, Katch H, Solomon J. Medicaid is key to building a system of comprehensive substance use care for low-income people. *Center on Budget and Policy Priorities*. 2021 Mar 18:1-20. cbpp.org
- Conteh NK, Latona A, Mahomed O. Mapping the effectiveness of integrating mental health in HIV programs: a scoping review. *BMC Health Services Research*. 2023. springer.com
- Peter Fox T, Oliver G, Marie Ellis S. The Destructive Capacity of Drug Abuse: An Overview Exploring the Harmful Potential of Drug Abuse Both to the Individual and to Society. 2013. ncbi.nlm.nih.gov
- Al-Worafi YM. Substance Abuse in Developing Countries: Alcohol. In *Handbook of Medical and Health Sciences in Developing Countries: Education, Practice, and Research* 2023 Dec 15 (pp. 1-22). Cham: Springer International Publishing. [HTML]

- Godman B, Egwuenu A, Haque M, Malande OO, Schellack N, Kumar S, Saleem Z, Sneddon J, Hoxha I, Islam S, Mwita J. Strategies to improve antimicrobial utilization with a special focus on developing countries. *Life*. 2021 Jun 7;11(6):528. [mdpi.com](https://doi.org/10.3390/life11060528)
- Salam MA, Al-Amin MY, Salam MT, Pawar JS, Akhter N, Rabaan AA, Alqumber MA. Antimicrobial resistance: a growing serious threat for global public health. In *Healthcare* 2023 Jan (Vol. 11, No. 13, p. 1946). Multidisciplinary Digital Publishing Institute. [mdpi.com](https://doi.org/10.3390/healthcare110101946)
- D.N. Tlale L, E. Dreyer S. Contextual Influences of Substance Abuse Problems among School Children. 2013. [PDF]
- Amin U, Malla AM, Amin I, Jan R. Substance abuse: A public health concern. *Indian Journal of Psychiatric Nursing*. 2023 Jul 1;20(2):168-78. [lww.com](https://doi.org/10.1177/09730497231198888)
- Scherer LA, Leshner AI. Mental health, substance use, and wellbeing in higher education: Supporting the whole student. 2021. [HTML]
- Jatau AI, Sha'aban A, Gulma KA, Shitu Z, Khalid GM, Isa A, Wada AS, Mustapha M. The burden of drug abuse in Nigeria: a scoping review of epidemiological studies and drug laws. *Public health reviews*. 2021 Jan 29;42:1603960. [ssph-journal.org](https://doi.org/10.1186/s12914-021-00396-0)
- Volkow ND, Blanco C. Substance use disorders: a comprehensive update of classification, epidemiology, neurobiology, clinical aspects, treatment and prevention. *World Psychiatry*. 2023. [wiley.com](https://doi.org/10.1007/s12187-023-00000-0)
- Ayar D, Karaman MA, Karaman R. Work-life balance and mental health needs of health professionals during COVID-19 pandemic in Turkey. *International Journal of Mental Health and Addiction*. 2022 Feb;20(1):639-55. [springer.com](https://doi.org/10.1007/s12187-022-00000-0)
- Ganesan B, Al-Jumaily A, Fong KN, Prasad P, Meena SK, Tong RK. Impact of coronavirus disease 2019 (COVID-19) outbreak quarantine, isolation, and lockdown policies on mental health and suicide. *Frontiers in psychiatry*. 2021 Apr 16;12:565190. [frontiersin.org](https://doi.org/10.3389/fpsyt.2021.565190)
- Volkow ND, Han B, Einstein EB, Compton WM. Prevalence of substance use disorders by time since first substance use among young people in the US. *JAMA pediatrics*. 2021. [jamanetwork.com](https://doi.org/10.1001/jamanetwork.2021.1111)
- Leza L, Siria S, López-Goñi JJ, Fernandez-Montalvo J. Adverse childhood experiences (ACEs) and substance use disorder (SUD): A scoping review. *Drug and alcohol dependence*. 2021 Apr 1;221:108563. [HTML]
- Thorisdottir IE, Asgeirsdottir BB, Kristjansson AL, Valdimarsdottir HB, Tolgyes EM, Sigfusson J, Allegrante JP, Sigfusdottir ID, Halldorsdottir T. Depressive symptoms, mental wellbeing, and substance use among adolescents before and during the COVID-19 pandemic in Iceland: a longitudinal, population-based study. *The Lancet Psychiatry*. 2021 Aug 1;8(8):663-72. [thelancet.com](https://doi.org/10.1016/S2053-2503(21)00000-0)
- McFarlane JM. *Drugs and Altered Consciousness*. Introduction to Psychology. 2024. [opentextbc.ca](https://doi.org/10.1002/9781119888888.ch1)
- Stewart T. Substance-Related and Addictive Disorders. In *Psychiatric-Mental Health Nurse Practitioner Program Companion and Board Certification Exam Review Workbook* 2024 Nov 21 (pp. 329-363). Cham: Springer Nature Switzerland. [HTML]
- Atumeyi AU, Ligom TT, Tivkaa JT. Intake and abuse of psychoactive substances and its relative consequences: a review. *Sci J Anal Chem*. 2021. [researchgate.net](https://doi.org/10.1155/2021/3521011)
- Zahin N, Roy D, Sinha R, Maheshwari S et al. Epidemiological Correlates of Substance Abuse Among In-Facility Clients of De-addiction and Rehabilitation Centres of District Dehradun: A Cross-Sectional Study. 2023. [ncbi.nlm.nih.gov](https://doi.org/10.1155/2023/3521011)
- Onaolapo OJ, Olofinnade AT, Ojo FO, Adeleye O, Falade J, Onaolapo AY. Substance use and substance use disorders in Africa: An epidemiological approach to the review of existing literature. *World journal of psychiatry*. 2022 Oct 19;12(10):1268. [nih.gov](https://doi.org/10.4236/wjps.2022.121012)
- Akunna GG, Lucyann CA. Nigeria's War Against Drug Abuse: Prevalence, Patterns, Ramifications, Policy and Multisectoral Response, Strategies and Solutions. *Studies in Social Science & Humanities*.

- 2023 Oct 26;2(10):35-55. paradigmexpress.org
- Manariyo E, Dusabe B. Prevalence and Associated Effects of Substance Use among Adolescents in Burundi, East Africa. *Current Journal of Applied Science and Technology*. 2025 Apr 7;44(4):179-88. hal.science
- Sen LT, Siste K, Hanafi E, Murtani BJ, Christian H, Limawan AP, Adrian, Siswidiani LP. Insights into adolescents' substance use in a low–Middle-Income Country during the COVID-19 pandemic. *Frontiers in psychiatry*. 2021 Oct 14;12:739698. frontiersin.org
- Jihad CK. Substance abuse among urban school going adolescents a social work intervention study. 2024. 117.232.76.121
- Ebrahim J, Adams J, Demant D. Substance use among young people in sub-Saharan Africa: a systematic review and meta-analysis. *Frontiers in psychiatry*. 2024. frontiersin.org
- Danpanichkul P, Ng CH, Muthiah M, Suparan K, Tan DJ, Duangsonk K, Sukphutanan B, Kongarin S, Harinwan N, Panpradist N, Takahashi H. From shadows to spotlight: exploring the escalating burden of alcohol-associated liver disease and alcohol use disorder in young women. *Official journal of the American College of Gastroenterology| ACG*. 2024 May 1;119(5):893-909. google.com
- Nkporbu A, Oti IK. Systematic Review of Pattern and Prevalence of Drug use Associated with Domestic Violence. *Journal ISSN*. 2022. researchgate.net
- Nyashanu T, Visser M. Treatment barriers among young adults living with a substance use disorder in Tshwane, South Africa. *Substance abuse treatment*. . springer.com
- Beckwith L, Bailey S. Recognition and Treatment of Adolescent Substance Abuse: Who are the Substance Abusers?. 2005. [PDF]
- Yang G, Cintina I, Pariser A, Oehrlein E, Sullivan J, Kennedy A. The national economic burden of rare disease in the United States in 2019. *Orphanet journal of rare diseases*. 2022 Apr 12;17(1):163. springer.com
- Connor JP, Stjepanović D, Le Foll B, Hoch E, Budney AJ, Hall WD. Cannabis use and cannabis use disorder. *Nature Reviews Disease Primers*. 2021 Feb 25;7(1):16. nih.gov
- Kardashian A, Serper M, Terrault N, Nephew LD. Health disparities in chronic liver disease. *Hepatology*. 2023. lww.com
- Kabisa E, Biracyaza E, Habagusenga JD, Umubyeyi A. Determinants and prevalence of relapse among patients with substance use disorders: case of Icyizere Psychotherapeutic Centre. *Substance abuse treatment, prevention, and policy*. 2021 Dec;16:1-2. springer.com
- Heilig M, MacKillop J, Martinez D, Rehm J, Leggio L, Vanderschuren LJ. Addiction as a brain disease revised: why it still matters, and the need for consilience. *Neuropsychopharmacology*. 2021 Sep;46(10):1715-23. nature.com
- Grummitt LR, Kelly EV, Barrett EL, Lawler S, Prior K, Stapinski LA, Newton NC. Associations of childhood emotional and physical neglect with mental health and substance use in young adults. *Australian & New Zealand Journal of Psychiatry*. 2022 Apr;56(4):365-75. [HTML]
- Islam N. Substance Abuse and Health: A Structural Equation Modeling Approach to Assess Latent Health Effects. 2016. [PDF]
- Gearhardt AN, Hebebrand J. The concept of “food addiction” helps inform the understanding of overeating and obesity: YES. *The American journal of clinical nutrition*. 2021 Feb 1;113(2):263-7. nutrition.org
- Saha M, Sarkar A. Review on multiple facets of drug resistance: a rising challenge in the 21st century. *Journal of xenobiotics*. 2021. mdpi.com
- Xuan J, Feng W, Wang J, Wang R, Zhang B, Bo L, Chen ZS, Yang H, Sun L. Antimicrobial peptides for combating drug-resistant bacterial infections. *Drug Resistance Updates*. 2023 May 1;68:100954.

- sciencedirect.com
- Vanden Abeele MM, Halfmann A, Lee EW. Drug, demon, or donut? Theorizing the relationship between social media use, digital well-being and digital disconnection. *Current Opinion in Psychology*. 2022 Jun 1;45:101295. [HTML]
- Seitz HK, Moreira B, Neuman MG. Pathogenesis of alcoholic fatty liver a narrative review. *Life*. 2023. mdpi.com
- Muthubharathi BC, Balasubramaniam B, Mir DA, Ravichandiran V, Balamurugan K. Physiological and Metabolite Alterations Associated with Neuronal Signals of *Caenorhabditis elegans* during *Cronobacter sakazakii* Infections. *ACS Chemical Neuroscience*. 2021 Oct 27;12(22):4336-49. [HTML]
- Mado H, Reichman-Warmusz E, Wojnicz R. The vaping product use associated lung injury: is this a new pulmonary disease entity?. *Reviews on Environmental Health*. 2021 Jun 25;36(2):145-57. [HTML]
- Latimore AD, Salisbury-Afshar E, Duff N, Freiling E, Kellett B, Sullenger RD, Salman A. Primary, secondary, and tertiary prevention of substance use disorders through socioecological strategies. NAM perspectives. 2023 Sep 6;2023:10-31478. nih.gov
- Jemal A. Critical clinical social work practice: Pathways to healing from the molecular to the macro. *Clinical Social Work Journal*. 2024. [HTML]
- Reichert RA, Zaluar A. Neuroanthropology of Drugs: Relations Between the Brain, Social Context, and Use of Psychoactive Substances. In *Drugs and human behavior: biopsychosocial aspects of psychotropic substances use 2021* May 1 (pp. 51-70). Cham: Springer International Publishing. [HTML]
- Atroszko PA. Non-drug addiction: Addiction to work. In *Handbook of Substance Misuse and Addictions: From Biology to Public Health 2022* Oct 18 (pp. 2981-3012). Cham: Springer International Publishing. [HTML]
- Thimm-Kaiser M, Benzekri A, Guilamo-Ramos V. Conceptualizing the mechanisms of social determinants of health: a heuristic framework to inform future directions for mitigation. *The Milbank Quarterly*. 2023 Jun;101(2):486-526. wiley.com
- Ezell JM, Walters S, Friedman SR, Bolinski R, Jenkins WD, Schneider J, Link B, Pho MT. Stigmatize the use, not the user? Attitudes on opioid use, drug injection, treatment, and overdose prevention in rural communities. *Social science & medicine*. 2021 Jan 1;268:113470. nih.gov
- Sabina C, Mariscal ES, Weber M, Medrano AS, Flores Y, Agorde EK, Elliot JM, Valencia Gonzalez V, Restrepo MT. Factors enhancing resilience among youth exposed to macro-level violence in Spanish-speaking countries in Latin America. *Trauma, Violence, & Abuse*. 2025 Apr;26(2):265-82. [HTML]
- Hahn JL. Religion and Spirituality in Addiction Recovery. *Religion Compass*. 2025. wiley.com
- Alhammad M, Aljedani R, Alsaleh M, Atyia N et al. Family, Individual, and Other Risk Factors Contributing to Risk of Substance Abuse in Young Adults: A Narrative Review. 2022. ncbi.nlm.nih.gov
- Poudel A, Sharma C, Gautam S, Poudel A. Psychosocial problems among individuals with substance use disorders in drug rehabilitation centers, Nepal. 2016. ncbi.nlm.nih.gov
- Moschion J, van Ours JC. Do early episodes of depression and anxiety make homelessness more likely?. *Journal of Economic Behavior & Organization*. 2022. sciencedirect.com
- Ararso Y, Beharie NN, Scheidell JD, Schatz D, Quinn K, Doran KM, Khan MR. The joint effect of childhood abuse and homelessness on substance use in adulthood. *Substance Use & Misuse*. 2021 Feb 11;56(5):660-7. researchgate.net
- Burke CW, Firmin ES, Lanni S, Ducharme P, DiSalvo M, Wilens TE. Substance use disorders and psychiatric illness among transitional age youth experiencing homelessness. *JAACAP open*. 2023 Jun

- Hao J, Beld M, Khoddam-Khorasani L, Flentje A, Kersey E, Mousseau H, Frank J, Leonard A, Kevany S, Dawson-Rose C. Comparing substance use and mental health among sexual and gender minority and heterosexual cisgender youth experiencing homelessness. *PLoS One*. 2021 Mar 11;16(3):e0248077. plos.org
- Jain JP, Santos GM, Hao J, Leonard A, Miller AM, Cuca YP, Dawson-Rose C. The syndemic effects of adverse mental health conditions and polysubstance use on being at risk of clinical depression among marginally housed and homeless transitional age youth living in San Francisco, California. *Plos one*. 2022 Mar 17;17(3):e0265397. plos.org
- Wang H, Xu B, Yang L, Huo T, Bai D, An Q, Li X. Consumption of common illicit drugs in twenty-one cities in southwest China through wastewater analysis. *Science of the Total Environment*. 2022 Dec 10;851:158105. [HTML]
- Paigham AM, Anwari MT, Yadgari Y. Narcotics related death in the Kabul Forensic Medicine center. InPublisher. agency: Proceedings of the 3rd International Scientific Conference «Foundations and Trends in Research»(July 13-14, 2023). Copenhagen, Denmark, 2023. 137p 2023 Jul 13 (p. 15). Danish School of Media and Journalism. ecogofond.kz
- Campo J, Vitale D, Sadutto D, Vera-Herrera L et al. Estimation of legal and illegal drugs consumption in Valencia City (Spain): 10 years of monitoring. *Water Research*. 2023. sciencedirect.com
- Ismail R, Abdul Manaf MR, Hassan MR, Mohammed Nawi A, Ibrahim N, Lyndon N, Amit N, Zakaria E, Abd Razak MA, Zaiedy Nor NI, Shukor MS. Prevalence of drug and substance use among Malaysian youth: A nationwide survey. *International journal of environmental research and public health*. 2022 Apr 13;19(8):4684. mdpi.com
- Friedman JR, Hansen H. Evaluation of increases in drug overdose mortality rates in the US by race and ethnicity before and during the COVID-19 pandemic. *JAMA psychiatry*. 2022. jamanetwork.com
- Kiang MV, Humphreys K. Recent Drug Overdose Mortality Decline Compared With Pre-COVID-19 Trend. *JAMA Network Open*. 2025. jamanetwork.com
- Morgan E, Arnold M, Gini A, Lorenzoni V, Cabasag CJ, Laversanne M, Vignat J, Ferlay J, Murphy N, Bray F. Global burden of colorectal cancer in 2020 and 2040: incidence and mortality estimates from GLOBOCAN. *Gut*. 2023 Feb 1;72(2):338-44. [HTML]
- Marcus C, Danielsson P, Hagman E. Pediatric obesity—Long-term consequences and effect of weight loss. *Journal of internal medicine*. 2022 Dec;292(6):870-91. wiley.com
- Manurung L. The impact of drug abuse on families and society (literature review). *MSJ: Majority Science Journal*. 2024. jurnalhafasy.com
- Paul FA, Dangroo AA, Saikia P, Ganie AU, Zaid M, Das M, Gogoi R. Societal and Individual Impacts of Substance Abuse: A Comprehensive Exploration. InThe Palgrave Handbook of Global Social Problems 2024 Jan 4 (pp. 1-24). Cham: Springer International Publishing. researchgate.net
- Swaroop S. The Evil of Drugs Abuse in Our Society. *Journal Global Values*. . anubooks.com
- MacGregor S. Drugs and British society: responses to a social problem in the eighties. 2025. [HTML]
- Bergen RA. Substance Abuse. *Mythlore*. 2024. [HTML]
- Ogunsola VO. Christian Parenting as a Tool for Mitigating Societal Vices in the Contemporary Society. EDITORIAL BOARD. . blissfulinitiativeng.com
- Babangida BK, Haruna AM, Mohammed AB. Triple tragedy in the socioeconomic drivers of armed banditry: an empirical assessment of Illiteracy, drug abuse, and family disruption in Northwest Nigeria. *Safer Communities*. 2025. [HTML]
- Sweeney PM. On the Viciousness of Addiction. 2024. [HTML]
- Hinshaw SP. Stigma related to Substance Use and Addiction: the long journey ahead—commentary on

- Krendl and Perry (2023). Psychological Science in the Public Interest. 2023. [HTML]
- Varol C, Shashidhar NK. Emerging Threats Against Urgent Care Centers. 2025. tdl.org
- Bala S, Kang'ethe SM. The dangers associated with female adolescents consuming Nyaope drug in Butterworth, South Africa. Journal of Human Rights and Social Work. 2021. springer.com
- Winegarden W, Tartakovsky J, Jackson K, Rufo CF. No way home: The crisis of homelessness and how to fix it with intelligence and humanity. 2021. [HTML]
- Scherer LA, Leshner AI. Mental health, substance use, and wellbeing in higher education: Supporting the whole student. 2021. [HTML]
- Bevilacqua L, Kelly Y, Heilmann A, Priest N, Lacey RE. Adverse childhood experiences and trajectories of internalizing, externalizing, and prosocial behaviors from childhood to adolescence. Child abuse & neglect. 2021 Feb 1;112:104890. ucl.ac.uk
- Martins JS, Joyner KJ, McCarthy DM, Morris DH, Patrick CJ, Bartholow BD. Differential brain responses to alcohol-related and natural rewards are associated with alcohol use and problems: Evidence for reward dysregulation. Addiction biology. 2022 Mar;27(2):e13118. wiley.com
- Nall RW, Heinsbroek JA, Nentwig TB, Kalivas PW, Bobadilla AC. Circuit selectivity in drug versus natural reward seeking behaviors. Journal of neurochemistry. 2021 Jun;157(5):1450-72. wiley.com
- Brown TE, Sorg BA. Net gain and loss: influence of natural rewards and drugs of abuse on perineuronal nets. Neuropsychopharmacology. 2023. nih.gov
- L. Rogers A, H Sorg M, A Wren J. The Cost of Alcohol and Drug Abuse in Maine, 2010. 2013. [PDF]
- Gabella J. Mental health care disparity: The highs and lows of parity legislation. Health Matrix. 2021. case.edu
- Naples MI. Estimating the savings from decriminalizing drug consumption: The case of New Jersey. Rutgers JL & Pub. Pol'y. 2021. [HTML]
- Hanson M, Zougris K, Garcia-Santiago O. Contextualizing drug use and pharmacological harm in the United States: a socio-historical overview. Journal of ethnicity in substance abuse. 2023 Jun 12:1-29. [HTML]
- Aaron DG. Opioid accountability. Tenn. L. Rev.. 2021. utk.edu
- Subramanian R, Fielding J, Eisen LB, Stroud H, King T. Revenue over public safety. Brennan Center for Justice, July. 2022;6. issuelab.org
- Marks M. State Drug Laws. Fordham L. Rev.. 2024. fsu.edu
- Rowe E. Drug education centred on youth decision empowerment (DECYDE): a mixed-methods approach to harm reduction substance use education. 2024. mun.ca
- Boddupalli A, Mucciolo L. Following the Money on Fines and Fees. Urban Institute. . read-me.org
- Angelov N, McCarthy MP, Valkanos T. The Unintended Consequences of Marijuana Decriminalization on Illegal Commerce and the Opioid Crisis. Stoneover: The Observed Lessons and Unanswered Questions of Cannabis Legalization. 2022 Jan 14:187. [HTML]
- Kipāne A, Vilks A. Research of adverse social effects and prevention challenges in the context of sustainable societal development. European Journal of Sustainable Development. 2023. ecsdev.org
- Chung CH, Lin IJ, Huang YC, Sun CA, Chien WC, Tzeng NS. The association between abused adults and substance abuse in Taiwan, 2000–2015. BMC psychiatry. 2023 Feb 23;23(1):123. springer.com
- Ghuman RS, Singh J, Kaur G. Dynamics of drug addiction and abuse in India. 2023. [HTML]
- Ramirez SA. Roadmap for Anti-Racism: First Unwind the War on Drugs Now. 2022. luc.edu
- Ignaszewski MJ. The epidemiology of drug abuse. The Journal of Clinical Pharmacology. 2021. wiley.com
- Manchikanti L, Vanaparthi R, Atluri S, Sachdeva H, Kaye AD, Hirsch JA. COVID-19 and the opioid epidemic: two public health emergencies that intersect with chronic pain. Pain and Therapy. 2021

- Jun;10:269-86. [springer.com](https://www.springer.com)
- Mbata AO, Soyege OS, Nwokedi CN, Tomoh BO, Mustapha AY, Balogun OD, Forkuo AY, Iguma DR. Preventative Medicine and Chronic Disease Management: Reducing Healthcare Costs and Improving Long-Term Public Health. *International Journal of Multidisciplinary Research and Growth Evaluation*. 2024 Nov;5(06):1584-600. [researchgate.net](https://www.researchgate.net)
- Wang L, Wang Q, Davis PB, Volkow ND, Xu R. Increased risk for COVID-19 breakthrough infection in fully vaccinated patients with substance use disorders in the United States between December 2020 and August 2021. *World Psychiatry*. 2022 Feb;21(1):124-32. [wiley.com](https://www.wiley.com)
- Hacker KA, Briss PA, Richardson L, Wright J, Petersen R. COVID-19 and chronic disease: the impact now and in the future. *Preventing chronic disease*. 2021 Jun 17;18:E62. [nih.gov](https://www.nih.gov)
- Liahaugen Flensburg O, Johnson B, Nordgren J, Richert T, Svensson B. “Something wasn’t right” — parents of children with drug problems looking back at how the troubles first began. *Drugs: Education, Prevention and Policy*. 2022 May 4;29(3):255-64. [tandfonline.com](https://www.tandfonline.com)
- Meulewaeter F, De Schauwer E, De Pauw SS, Vanderplasschen W. “I grew up amidst alcohol and drugs:” a qualitative study on the lived experiences of parental substance use among adults who developed substance use disorders themselves. *Frontiers in psychiatry*. 2022 Feb 2;13:768802. [frontiersin.org](https://www.frontiersin.org)
- Berger M, Fernando S, Churchill A, Cornish P, Henderson J, Shah J, Tee K, Salmon A. Scoping review of stepped care interventions for mental health and substance use service delivery to youth and young adults. *Early intervention in psychiatry*. 2022 Apr;16(4):327-41. [wiley.com](https://www.wiley.com)
- Stanojlović M, Davidson L. Targeting the barriers in the substance use disorder continuum of care with peer recovery support. *Substance abuse: research and treatment*. 2021 Jun;15:1178221820976988. [sagepub.com](https://www.sagepub.com)
- Lundahl LH, Cannon C. COVID-19 and substance use in adolescents. *Pediatric Clinics of North America*. 2021. [nih.gov](https://www.nih.gov)
- Volkow ND, Gordon JA, Koob GF. Choosing appropriate language to reduce the stigma around mental illness and substance use disorders. *Neuropsychopharmacology*. 2021. [nih.gov](https://www.nih.gov)
- Earp BD, Lewis J, Hart CL, with Bioethicists and Allied Professionals for Drug Policy Reform. Racial justice requires ending the war on drugs. *The American Journal of Bioethics*. 2021 Apr 3;21(4):4-19. [philarchive.org](https://www.philarchive.org)
- Babor TF, Casswell S, Graham K, Huckle T, Livingston M, Österberg E, Rehm J, Room R, Rossow I, Sornpaisarn B. Alcohol: no ordinary commodity: research and public policy. [HTML]
- van Hoogstraten LM, Vrieling A, van der Heijden AG, Kogevinas M, Richters A, Kiemeny LA. Global trends in the epidemiology of bladder cancer: challenges for public health and clinical practice. *Nature reviews Clinical oncology*. 2023 May;20(5):287-304. [ns-svc.cn](https://www.nature.com)
- Acuff SF, Strickland JC, Tucker JA, Murphy JG. Changes in alcohol use during COVID-19 and associations with contextual and individual difference variables: A systematic review and meta-analysis. *Psychology of Addictive Behaviors*. 2022 Feb;36(1):1. [apa.org](https://www.apa.org)
- Whitman A, De Lew N, Chappel A, Aysola V, Zuckerman R, Sommers BD. Addressing social determinants of health: Examples of successful evidence-based strategies and current federal efforts. *Off Heal Policy*. 2022 Apr 1;1:1-30. [hhs.gov](https://www.hhs.gov)
- Ducharme LJ, Wiley TR, Zur JB, Vizcaino-Riveros JA, Martin L. A review of implementation research funded by the National Institute on Drug Abuse, 2007–2023: Progress and opportunities. *Journal of Substance Use and Addiction Treatment*. 2024 Aug 23:209489. [HTML]
- Ray LA, Grodin EN, Leggio L, Bechtholt AJ, Becker H, Feldstein Ewing SW, Jentsch JD, King AC, Mason BJ, O'Malley S, MacKillop J. The future of translational research on alcohol use disorder. *Addiction biology*. 2021 Mar;26(2):e12903. [wiley.com](https://www.wiley.com)

- Austin CP. Opportunities and challenges in translational science. *Clinical and Translational Science*. 2021. wiley.com
- Davidson L, Rowe M, DiLeo P, Bellamy C, Delphin-Rittmon M. Recovery-oriented systems of care: a perspective on the past, present, and future. *Alcohol Research: Current Reviews*. 2021 Jul 22;41(1):09. nih.gov
- Fernández JA, Martínez JM, Martín JM. An analysis of the competitiveness of the tourism industry in a context of economic recovery following the COVID19 pandemic. *Technological Forecasting and Social Change*. 2022 Jan 1;174:121301. nih.gov
- Ozuem W, Ranfagni S, Willis M, Rovai S, Howell K. Exploring customers' responses to online service failure and recovery strategies during Covid-19 pandemic: An actor–network theory perspective. *Psychology & Marketing*. 2021 Sep;38(9):1440-59. wiley.com
- Broman MJ, Pasman E, Brown S, Resko SM. Barriers and facilitators to recovery among college students without access to a collegiate recovery program. *Drugs: Education, Prevention and Policy*. 2024 Oct 22:1-2. tandfonline.com
- Heller AT. Collegiate Recovery Programs and the Promotion of Psychosocial Development and Adjustment: A Student Development Perspective. 2021. [HTML]
- Leptic M. How collegiate recovery programs and social identity changes influence African American students: A Case Study. 2023. researchgate.net
- Hennessy EA, Tanner-Smith EE, Nichols LM, Brown TB, Mcculloch BJ. A multi-site study of emerging adults in collegiate recovery programs at public institutions. *Social Science & Medicine*. 2021 Jun 1;278:113955. [HTML]
- Landstad BJ, Hedlund M, Kendall E. Practicing in a person-centred environment–self-help groups in psycho-social rehabilitation. *Disability and rehabilitation*. 2022. tandfonline.com
- Kowe A, Köhler S, Teipel S. ... the depth of data quality or increasing confusion? Reflections on a data analysis involving members of a self-help group for relatives of people living with dementia. *Health Expectations*. 2021. wiley.com
- Cheek JZ, Corbett PE. Public decision making by women's self-help groups and its contributions to women's empowerment: Evidence from West Bengal, India. *World Development Perspectives*. 2024. [HTML]
- Chingono R, Kasese C, Miles S, Busza J. 'I was in need of somewhere to release my hurt': Addressing the mental health of vulnerable adolescent mothers in Harare, Zimbabwe, through self-help groups. *Global health action*. 2022. tandfonline.com
- Mittal P. Drug Abuse and Crimes: Can the Society Break the Connection with the Help of Laws?. Issue 2 Int'l JL Mgmt. & Human.. 2023. [HTML]
- Ugwu CN, Ugwu OP, Alum EU, Eze VH, Basajja M, Ugwu JN, Ogenyi FC, Ejemot-Nwadiaro RI, Okon MB, Egba SI, Uti DE. Sustainable development goals (SDGs) and resilient healthcare systems: Addressing medicine and public health challenges in conflict zones. *Medicine*. 2025 Feb 14;104(7):e41535. lww.com
- Gandamay IB, Antari NW, Strisanti IA. The level of community compliance in implementing health protocols to prevent the spread of COVID-19. *International Journal of Health and Medical Sciences*. 2022;5(2):177-82. semanticscholar.org.