

Course Name	: Substance Abuse and Addictions Management
Course Code	: APBPH 3305
Course Level	: Level 6
Course Credit	: 4 CU
Contact Hour	: 60 Contact Hours

Course description

Substance abuse, also known as **drug abuse**, is a patterned use of a substance (drug) in which the user consumes the substance in amounts or with methods neither approved nor supervised by medical professionals. Substance abuse/drug abuse is not limited to mood-altering or psycho-active drugs. If an activity is performed using the objects against the rules and policies of the matter (as in steroids for performance enhancement in sports), it is also called substance abused. Therefore, mood-altering and psychoactive substances are not the only types of drug abuse. Using illicit drugs – narcotics, stimulants, depressants (sedatives), hallucinogens, cannabis, even glues and paints, are also considered to be classified as drug/substance abuse. Substance abuse often includes problems with impulse control and impulsive behaviour.

Course objectives

- To enable students know about the different diseases associated with substance abuse
- To enable students learn more about addictions associated with substance abuse
- To assist students identify the signs and symptoms of substance abuse such as gambling

Course Content

- Medical definitions
- Public health definitions
- Drug misuse
- As a value judgment
- Signs and symptoms
- Epidemiology
- History
- Society and culture
- Legal approaches
- Cost
- Europe
- Special Populations

- Etiology of Substance Abuse
- Addictions Management
- Risk factors
- Prevention
- Health care models
- Evaluation

Mode of delivery Face to face lectures

- **Assessment**
- **Coursework** 40%
- **Exams** 60%
- **Total Mark** 100%

SUBSTANCE ABUSE AND ADDICTIONS MANAGEMENT

Substance abuse, also known as **drug abuse**, is a patterned use of a substance (drug) in which the user consumes the substance in amounts or with methods neither approved nor supervised by medical professionals. Substance abuse/drug abuse is not limited to mood-altering or psycho-active drugs. If an activity is performed using the objects against the rules and policies of the matter (as in steroids for performance enhancement in sports), it is also called substance abused. Therefore, mood-altering and psychoactive substances are not the only types of drug abuse. Using illicit drugs – narcotics, stimulants, depressants (sedatives), hallucinogens, cannabis, even glues and paints, are also considered to be classified as drug/substance abuse. ^[2] Substance abuse often includes problems with impulse control and impulsive behaviour.

The term "drug abuse" does not exclude dependency, but is otherwise used in a similar manner in nonmedical contexts. The terms have a huge range of definitions related to taking a psychoactive drug or performance enhancing drug for a non-therapeutic or non-medical effect. All of these definitions imply a negative judgment of the drug use in question (compare with the term responsible drug use for alternative views). Some of the drugs most often associated with this term include alcohol, amphetamines, barbiturates, benzodiazepines (particularly temazepam, nimetazepam, and flunitrazepam), cocaine, methaqualone, and opioids. Use of these drugs may lead to criminal penalty in addition to possible physical, social, and psychological harm, both strongly depending on local jurisdiction.^[3] There are many cases in which criminal or antisocial behavior occur when the person is under the influence of a drug. Long term personality changes in individuals may occur as well.^[4] Other definitions of drug abuse fall into four main categories: public health definitions, mass communication and vernacular usage, medical definitions, and political and criminal justice definitions. Substance abuse is prevalent

with an estimated 120 million users of hard drugs such as cocaine, heroin and other synthetic drugs.

Substance abuse is a form of substance-related disorder.

Public health definitions

Public health practitioners have attempted to look at drug abuse from a broader perspective than the individual, emphasizing the role of society, culture and availability. Rather than accepting the loaded terms alcohol or drug "abuse," many public health professionals have adopted phrases such as "substance and alcohol type problems" or "harmful/problematic use" of drugs.

The Health Officers Council of British Columbia — in their 2005 policy discussion paper, *A Public Health Approach to Drug Control in Canada* — has adopted a public health model of psychoactive substance use that challenges the simplistic black-and-white construction of the binary (or complementary) antonyms "use" vs. "abuse". This model explicitly recognizes a spectrum of use, ranging from beneficial use to chronic dependence (see diagram to the right).

Medical definitions

In the modern medical profession, the three most used diagnostic tools in the world, the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM), the World Health Organization's International Statistical Classification of Diseases and ICRIS Medical organization Related Health Problems (ICD), no longer recognize 'drug abuse' as a current medical diagnosis. Instead, DSM has adopted *substance abuse*^[5] as a blanket term to include drug abuse and other things. ICD refrains from using either *substance abuse* or *drug abuse*, instead using the term "harmful use" to cover physical or psychological harm to the user from use. Physical dependence, abuse of, and withdrawal from drugs and other miscellaneous substances is outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR). Its section Substance dependence begins with:

Substance dependence When an individual persists in use of alcohol or other drugs despite problems related to use of the substance, substance dependence may be diagnosed. Compulsive and repetitive use may result in tolerance to the effect of the drug and withdrawal symptoms when use is reduced or stopped. These, along with Substance Abuse are considered Substance Use Disorders...
—^[5]

However, other definitions differ; they may entail psychological or physical *dependence*,^[5] and may focus on treatment and prevention in terms of the social consequences of substance uses.

Drug misuse

Drug misuse is a term used commonly for prescription medications with clinical efficacy but abuse potential and known adverse effects linked to improper use, such as psychiatric medications with sedative, anxiolytic, analgesic, or stimulant properties. Prescription misuse has been variably and inconsistently defined based on drug prescription status, the uses that occur without a prescription, intentional use to achieve intoxicating effects, route of administration, co-ingestion with alcohol, and the presence or absence of abuse or dependence symptoms.^{[6][7]} Tolerance relates to the pharmacological property of substances in which chronic use leads to a change in the central nervous system, meaning that more of the substance is needed in order to produce desired effects. Stopping or reducing the use of this substance would cause withdrawal symptoms to occur.^[8]

The rate of prescription drug abuse is fast overtaking illegal drug abuse in the United States. According to the National Institute of Drug Abuse, 7 million people were taking prescription drugs for nonmedical use in 2010. Among 12th graders, prescription drug misuse is now second only to cannabis.^[citation needed] "Nearly 1 in 12 high school seniors reported nonmedical use of Vicodin; 1 in 20 reported abuse of OxyContin."^[9]

Avenues of obtaining prescription drugs for misuse are varied: sharing between family and friends, illegally buying medications at school or work, and often "doctor shopping" to find multiple physicians to prescribe the same medication, without knowledge of other prescribers.

Increasingly, law enforcement is holding physicians responsible for prescribing controlled substances without fully establishing patient controls, such as a patient "drug contract." Concerned physicians are educating themselves on how to identify medication-seeking behavior in their patients, and are becoming familiar with "red flags" that would alert them to potential prescription drug abuse.^[10]

As a value judgment

Legal drugs are not necessarily safer. A study in 2010 asked drug-harm experts to rank various illegal and legal drugs. Alcohol was found to be the most dangerous by far.

Philip Jenkins points out that there are two issues with the term "drug abuse". First, what constitutes a "drug" is debatable. For instance, GHB, a naturally occurring substance in the central nervous system is considered a drug, and is illegal in many countries, while nicotine is not officially considered a drug in most countries. Second, the word "abuse" implies a recognized standard of use for any substance. Drinking an occasional glass of wine is considered

acceptable in most Western countries, while drinking several bottles is seen as an abuse. Strict temperance advocates, which may or may not be religiously motivated, would see drinking even one glass as an abuse, and some groups even condemn caffeine use in any quantity. Similarly, adopting the view that any (recreational) use of marijuana or amphetamines constitutes drug abuse implies that we have already decided that the substance is harmful, even in minute quantities.^[11]

Signs and symptoms

Depending on the actual compound, drug abuse including alcohol may lead to health problems, social problems, morbidity, injuries, unprotected sex, violence, deaths, motor vehicle accidents, homicides, suicides, physical dependence or psychological addiction.^[12]

There is a high rate of suicide in alcoholics and other drug abusers. The reasons believed to cause the increased risk of suicide include the long-term abuse of alcohol and other drugs causing physiological distortion of brain chemistry as well as the social isolation. Another factor is the acute intoxicating effects of the drugs may make suicide more likely to occur. Suicide is also very common in adolescent alcohol abusers, with 1 in 4 suicides in adolescents being related to alcohol abuse.^[13] In the USA approximately 30 percent of suicides are related to alcohol abuse. Alcohol abuse is also associated with increased risks of committing criminal offences including child abuse, domestic violence, rapes, burglaries and assaults.^[14]

Drug abuse, including alcohol and prescription drugs can induce symptomatology which resembles mental illness. This can occur both in the intoxicated state and also during the withdrawal state. In some cases these substance induced psychiatric disorders can persist long after detoxification, such as prolonged psychosis or depression after amphetamine or cocaine abuse. A protracted withdrawal syndrome can also occur with symptoms persisting for months after cessation of use. Benzodiazepines are the most notable drug for inducing prolonged withdrawal effects with symptoms sometimes persisting for years after cessation of use. Abuse of hallucinogens can trigger delusional and other psychotic phenomena long after cessation of use and cannabis may trigger panic attacks during intoxication and with use it may cause a state similar to dysthymia^[citation needed]. Severe anxiety and depression are commonly induced by sustained alcohol abuse which in most cases abates with prolonged abstinence. Even moderate alcohol sustained use may increase anxiety and depression levels in some individuals. In most cases these drug induced psychiatric disorders fade away with prolonged abstinence.^[15]

Drug abuse makes central nervous system (CNS) effects, which produce changes in mood, levels of awareness or perceptions and sensations. Most of

these drugs also alter systems other than the CNS. Some of these are often thought of as being abused. Some drugs appear to be more likely to lead to uncontrolled use than others.^[16]

Traditionally, new pharmacotherapies are quickly adopted in primary care settings, however; drugs for substance abuse treatment have faced many barriers. Naltrexone, a drug originally marketed under the name "ReVia," and now marketed in intramuscular formulation as "Vivitrol" or in oral formulation as a generic, is a medication approved for the treatment of alcohol dependence. This drug has reached very few patients. This may be due to a number of factors, including resistance by Addiction Medicine specialists and lack of resources.^[17]

The ability to recognize the signs of drug use or the symptoms of drug use in family members by parents and spouses has been affected significantly by the emergence of home drug test technology which helps identify recent use of common street and prescription drugs with near lab quality accuracy.

Epidemiology

The initiation of drug and alcohol use is most likely to occur during adolescence, and some experimentation with substances by older adolescents is common. For example, results from 2010 Monitoring the Future survey, a nationwide study on rates of substance use in the United States, show that 48.2% of 12th graders report having used an illicit drug at some point in their lives.^[18] In the 30 days prior to the survey, 41.2% of 12th graders had consumed alcohol and 19.2% of 12th graders had smoked tobacco cigarettes.^[18] In 2009 in the United States about 21% of high school students have taken prescription drugs without a prescription.^[19] And earlier in 2002, the World Health Organization estimated that around 140 million people were alcohol dependent and another 400 million suffered alcohol-related problems.^[20]

Studies have shown that the large majority of adolescents will phase out of drug use before it becomes problematic. Thus, although rates of overall use are high, the percentage of adolescents who meet criteria for substance abuse is significantly lower (close to 5%).^[citation needed] According to BBC, "Worldwide, the UN estimates there are more than 50 million regular users of morphine diacetate (heroin), cocaine and synthetic drugs."^[21]

History

APA, AMA, and NCDA

In 1932, the American Psychiatric Association created a definition that used legality, social acceptability, and cultural familiarity as qualifying factors:

...as a general rule, we reserve the term drug abuse to apply to the illegal, nonmedical use of a limited number of substances, most of them drugs, which have properties of altering the mental state in ways that are considered by social norms and defined by statute to be inappropriate, undesirable, harmful, threatening, or, at minimum, culture-alien."

In 1966, the American Medical Association's Committee on Alcoholism and Addiction defined abuse of stimulants (amphetamines, primarily) in terms of 'medical supervision':

...'use' refers to the proper place of stimulants in medical practice; 'misuse' applies to the physician's role in initiating a potentially dangerous course of therapy; and 'abuse' refers to self-administration of these drugs without medical supervision and particularly in large doses that may lead to psychological dependency, tolerance and abnormal behavior.

In 1973, the National Commission on Marijuana and Drug Abuse stated:

...drug abuse may refer to any type of drug or chemical without regard to its pharmacologic actions. It is an eclectic concept having only one uniform connotation: societal disapproval. ... The Commission believes that the term drug abuse must be deleted from official pronouncements and public policy dialogue. The term has no functional utility and has become no more than an arbitrary codeword for that drug use which is presently considered wrong.^[24]

DSM

The first edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (published in 1952) grouped alcohol and drug abuse under Sociopathic Personality Disturbances, which were thought to be symptoms of deeper psychological disorders or moral weakness.

The third edition, published in 1980, was the first to recognize substance abuse (including drug abuse) and substance dependence as conditions separate from substance abuse alone, bringing in social and cultural factors. The definition of dependence emphasised tolerance to drugs, and withdrawal from them as key components to diagnosis, whereas abuse was defined as "problematic use with social or occupational impairment" but without withdrawal or tolerance.

In 1987, the DSM-III-R category "psychoactive substance abuse," which includes former concepts of drug abuse is defined as "a maladaptive pattern of use indicated by...continued use despite knowledge of having a persistent or recurrent social, occupational, psychological or physical problem that is caused or exacerbated by the use (or by) recurrent use in situations in which it is physically hazardous." It is a residual category, with dependence taking

precedence when applicable. It was the first definition to give equal weight to behavioural and physiological factors in diagnosis.

By 1988, the DSM-IV defines substance dependence as "a syndrome involving compulsive use, with or without tolerance and withdrawal"; whereas substance abuse is "problematic use without compulsive use, significant tolerance, or withdrawal." Substance abuse can be harmful to your health and may even be deadly in certain scenarios

By 1994, The fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) issued by the American Psychiatric Association, the DSM-IV-TR, defines substance dependence as "when an individual persists in use of alcohol or other drugs despite problems related to use of the substance, substance dependence may be diagnosed." followed by criteria for the diagnose^[5]

DSM-IV-TR defines substance abuse as:^[25]

- A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:
 1. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions or expulsions from school; neglect of children or household)
 2. Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
 3. Recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
 4. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)
- B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

The fifth edition of the DSM (DSM-5), planned for release in 2013, is likely to have this terminology revisited yet again. Under consideration is a transition from the abuse/dependence terminology. At the moment, abuse is seen as an early form or less hazardous form of the disease characterized with the dependence criteria. However, the APA's 'dependence' term, as noted above, does not mean that physiologic dependence is present but rather means that a

disease state is present, one that most would likely refer to as an addicted state. Many involved recognize that the terminology has often led to confusion, both within the medical community and with the general public. The American Psychiatric Association requests input as to how the terminology of this illness should be altered as it moves forward with DSM-5 discussion.

Society and culture

Legal approaches

Most governments have designed legislation to criminalize certain types of drug use. These drugs are often called "illegal drugs" but generally what is illegal is their unlicensed production, distribution, and possession. These drugs are also called "controlled substances". Even for simple possession, legal punishment can be quite severe (including the death penalty in some countries). Laws vary across countries, and even within them, and have fluctuated widely throughout history.

Attempts by government-sponsored drug control policy to interdict drug supply and eliminate drug abuse have been largely unsuccessful. In spite of the huge efforts by the U.S., drug supply and purity has reached an all time high, with the vast majority of resources spent on interdiction and law enforcement instead of public health.^{[26][27]} In the United States, the number of nonviolent drug offenders in prison exceeds by 100,000 the total incarcerated population in the EU, despite the fact that the EU has 100 million more citizens.^[citation needed]

Despite drug legislation (or perhaps because of it), large, organized criminal drug cartels operate worldwide. Advocates of decriminalization argue that drug prohibition makes drug dealing a lucrative business, leading to much of the associated criminal activity.

Cost

Policymakers try to understand the relative costs of drug-related interventions. An appropriate drug policy relies on the assessment of drug related public expenditure based on a classification system where costs are properly identified.

Labelled drug-related expenditures are defined as the direct planned spending that reflects the voluntary engagement of the state in the field of illicit drugs. Direct public expenditures explicitly labeled as drug-related can be easily traced back by exhaustively reviewing official accountancy documents such as national budgets and year-end reports. Unlabelled expenditure refers to unplanned spending and is estimated through modeling techniques, based on a top-down budgetary procedure. Starting from overall aggregated

expenditures, this procedure estimates the proportion causally attributable to substance abuse (Unlabelled Drug-related Expenditure = Overall Expenditure × Attributable Proportion). For example, to estimate the prison drug-related expenditures in a given country, two elements would be necessary: the overall prison expenditures in the country for a given period, and the attributable proportion of inmates due to drug-related issues. The product of the two will give a rough estimate that can be compared across different countries.^[28]

Europe

As part of the reporting exercise corresponding to 2005, the European Monitoring Centre for Drugs and Drug Addiction's network of national focal points set up in the 27 European Union (EU) Member States, Norway, and the candidates countries to the EU, were requested to identify labeled drug-related public expenditure, at the country level.^[28]

This was reported by 10 countries categorized according to the functions of government, amounting to a total of EUR 2.17 billion. Overall, the highest proportion of this total came within the government functions of Health (66%) (e.g. medical services), and Public Order and Safety (POS) (20%) (e.g. police services, law courts, prisons). By country, the average share of GDP was 0.023% for Health, and 0.013% for POS. However, these shares varied considerably across countries, ranging from 0.00033% in Slovakia, up to 0.053% of GDP in Ireland in the case of Health, and from 0.003% in Portugal, to 0.02% in the UK, in the case of POS; almost a 161-fold difference between the highest and the lowest countries for Health, and a 6-fold difference for POS. Why do Ireland and the UK spend so much in Health and POS, or Slovakia and Portugal so little, in GDP terms?

To respond to this question and to make a comprehensive assessment of drug-related public expenditure across countries, this study compared Health and POS spending and GDP in the 10 reporting countries. Results found suggest GDP to be a major determinant of the Health and POS drug-related public expenditures of a country. Labelled drug-related public expenditure showed a positive association with the GDP across the countries considered: $r = 0.81$ in the case of Health, and $r = 0.91$ for POS. The percentage change in Health and POS expenditures due to a one percent increase in GDP (the income elasticity of demand) was estimated to be 1.78% and 1.23% respectively.

Being highly income elastic, Health and POS expenditures can be considered luxury goods; as a nation becomes wealthier it openly spends proportionately more on drug-related health and public order and safety interventions.^[28]

UK

The UK Home Office estimated that the social and economic cost of drug abuse^[29] to the UK economy in terms of crime, absenteeism and sickness is in excess of £20 billion a year.^[30] However, it^[clarification needed] does not estimate what portion of those crimes are unintended consequences of drug prohibition (crimes to sustain expensive drug consumption, risky production and dangerous distribution), nor what is the cost of enforcement. Those aspects are necessary for a full analysis of the economics of prohibition.^[31]

The Home Office has a recent history of taking a hard line on controlled drugs, including those with no known fatalities and even medical benefits,^[32] in direct opposition to the scientific community.^[33]

US

The 2004 study *The economic costs of drug abuse in the United States* by the Executive Office of the President Office of National Drug Control Policy, lists the overall costs of drug abuse for the years 1992–2002 as follows:

Year	Cost (billions of dollars)
1992	107
1993	111
1994	117
1995	125
1996	130
1997	134
1998	140
1999	151
2000	161
2001	170
2002	181

Treatment

Treatment for substance abuse is critical for many around the world. Often a formal intervention is necessary to convince the substance abuser to submit to any form of treatment. Behavioral interventions and medications exist that have helped many people reduce, or discontinue, their substance abuse. From the applied behavior analysis literature, behavioral psychology, and from randomized clinical trials, several evidenced based interventions have emerged:

- Behavioral marital therapy

- Motivational Interviewing
- Community reinforcement approach
- Exposure therapy
- Contingency management^{[34][35]}
- Pharmacological therapy - A number of medications have been approved for the treatment of substance abuse.^[citation needed] These include replacement therapies such as buprenorphine and methadone as well as antagonist medications like disulfiram and naltrexone in either short acting, or the newer long acting form (under the brand name Vivitrol). Several other medications, often ones originally used in other contexts, have also been shown to be effective including bupropion (Zyban or Wellbutrin), Modafinil (Provigil) and more.

According to some nurse practitioners, stopping substance abuse can reduce the risk of dying early and also reduce some health risks like heart disease, lung disease, and strokes.^[36]

In children and adolescents, cognitive behavioral therapy (CBT)^[37] and family therapy^[38] currently have the most research evidence for the treatment of substance abuse problems. These treatments can be administered in a variety of different formats, each of which has varying levels of research support^[39]

It has been suggested that social skills training adjunctive to inpatient treatment of alcohol dependence is probably efficacious,^[40] including managing the social environment.

Special Populations

Immigrants and Refugees

Process and Context of Migration

Governments, advocacy organizations, academics, and migrating persons often define the term "immigrant" differently, assigning unique meanings to the word, and often using the following terms somewhat interchangeably: aliens, immigrants, nonimmigrants, undocumented aliens, refugees, asylum seekers, and lawful permanent residents. The U.S. government classifies migrating persons into multiple categories based on both the type and legality of migration. "Lawful permanent residents" is the legal term used to describe immigrants who have arrived in the United States through legal channels and with appropriate documentation. "Nonimmigrants" refers to students, tourists, short-term contract workers, and any person temporarily visiting the country while intending to return to their country of origin. "Illegal alien" describes any immigrant who has entered the country illegally or who, although entering the country legally, has fallen "out of status." Illegal aliens may be deported at any time if brought to the attention of immigration authorities.^[41] The term "illegal

alien" has drawn much criticism from advocacy groups as a label that is demeaning and dehumanizing. For this Wikipedia entry, the term "immigrants" will be used to refer to both documented and undocumented migratory persons.

The United States Immigration and Nationality Act of 1952 defines a "refugee" as any person who is outside his or her "country of nationality" and who is unable or unwilling to return to that country because of persecution or a well-founded fear of persecution, which must be based on the individual's race, religion, nationality, membership in a particular social group, or political opinion. The number of refugees allowed to enter the U.S. is restricted by quantity and geographic location of origin in accordance with federal policies. After one year of residence within the U.S., refugees may be eligible to obtain Lawful Permanent Residence status.^[42]

Despite the relatively short history of the nation, patterns and outcomes of immigration to the United States have been complex. Noted historians, journalists, educators, and scholars, such as TatchoMindiola,^[43] Howard Zinn,^[44] and Samantha Power^[45] have extensively detailed the evolution of federal immigration and refugee policy within the U.S., signifying the economic, political, and social contexts and motivations shaping policy initiatives. The nation's earliest immigration legislation, such as the "Free White Persons Act" of 1790 and the Chinese Exclusion Act of 1882, reflected political manipulations of the economic incentives and social pressures of the times and provided a foundation for the codification of discriminatory practices based upon race and nationality within later policy designs. Further policy actions, including the Johnson-Reed Act of 1924, the "Bracero" guestworker program begun in 1942 and consequent Operation Wetback in 1954, and the USA Patriot Act of 2001 continued the process of selective immigration and detention according to racial and ethnic categories. Consequently, immigrant and refugee accessibility to the United States is limited according to fiscal, political, and humanitarian priorities; "numerical ceilings" for each fiscal year are determined by Congressional budget and appropriations.^[46]

Immigrant and refugee migration is often analyzed as a process consisting of three phases: 1) the pre-migration or departure phase, 2) the transit phase, and 3) the resettlement phase.^[47] Many economic, social, and psychological stressors are associated with each stage. Physical trauma and depression and anxiety due to separation from loved ones often characterize the pre-migration and transit phases. During the resettlement phase, "cultural dissonance," language barriers, racism, discrimination, economic adversity, overcrowding, social isolation, and loss of status regarding important social roles are just a few of the obstacles immigrants and refugees may encounter. For undocumented immigrants, difficulty obtaining work and fears of deportation are common. Refugees frequently experience concerns about the health and

safety of loved ones left behind and uncertainty regarding the possibility of returning to their country of origin.^{[48][49]}

Etiology of Substance Abuse

Many of the genetic, psychological, and environmental factors identified as potentially contributing to the development of substance abuse behaviors by multiple-generation by non-recent immigrants and refugees are similar for more recent immigrants and refugees. Heritable genetic, cognitive, and temperamental characteristics may signify increased risk or protective factors for biological family members. Psychological theories, such as the psychoanalytic, behavioral, cognitive, and social learning models may help to explain the role of environment in shaping substance abuse behaviors and patterns. Sociocultural models focusing on family interactions, peer influences, and social environments may describe the interpersonal mechanisms partially leading to substance abuse behaviors^[50]

However, several models have been proposed that specifically apply to the development of substance abuse behaviors and disorders among immigrants and refugees. The majority of these models relate to individual experiences of migration and assimilation, integration, and segregation upon entry into a new culture.

One theory suggests that immigrants and refugees simply continue the substance use and abuse patterns and behaviors they maintained while residing in their country of origin, regardless of the stressors and any process of cultural adaptation they may experience in their new country.^[49]

Conversely, the acculturation (or assimilation) model proposes that substance abuse behaviors may be explained by examining the process in which recent immigrants and refugees adopt the attitudes, behaviors, and norms regarding substance use and abuse that exist within the dominant culture into which they are entering. With this theory, patterns of substance abuse among immigrants and refugees will more closely resemble the patterns of the dominant society than patterns existing within the culture of origin, if there are significant differences.^[49]

Similarly, the acculturative stress model suggests that substance abuse functions as a coping mechanism to attempt to deal with the stressors that result directly from the process of immigration, such as forced migration, involuntary settlement, "cultural conflict" and alienation, role transition and loss of status, economic insecurity, and the scarcity of resources.^[49]

Finally, the intracultural diversity model argues that universal theories attempting to explain substance abuse by immigrants and refugees fail to address diversity within and between cultural groups. This model proposes

multiple pathways to addiction and recovery that cannot be generalized as applying to specific racial and ethnic populations. Proponents of this theory also point to intergenerational differences in substance abuse behaviors as evidence supporting the model and to identify potential risk and protective factors among individuals.^{[49][51]}

Empowerment Social Work and Culturally Competent Practice

The National Association of Social Workers (NASW) provides standardized guidelines regarding professional values and codes of ethical conduct for individual social workers. The NASW identifies the following core values: service, social justice, dignity and worth of the person, importance of human relationships, integrity, and competence. Furthermore, the association provides detailed guidelines related to confidentiality, informed consent, self-determination, and many other aspects of practice with clients and colleagues.^[52] All social work values and ethics are implicated in direct practice with immigrants and refugees; however, special attention must be paid to codes of conduct regarding client self-determination, informed consent, cultural competent practice, and confidentiality.

A variety of strategies have been suggested for social work practice in the field of substance abuse recovery when working with immigrants and refugees.

In a literature review of the research on immigration, acculturation, and substance abuse, Leow, Goldstein, and McGlinchy (2006) recommend tailoring intervention and treatment services and materials for specific racial and ethnic cultures by utilizing language, images, values, and norms belonging to each culture and incorporating knowledge of cultural themes, attitudes, family structures, and service access points. However, before services can be provided, they contend, social workers should recruit and consult with members of the immigrant and refugee communities they are intending to serve regarding program development and implementation. Additionally, social work staff and volunteers should demonstrate cultural competency in two significant ways: 1) by possessing the "attitudes, knowledge, and skills" necessary when working with diverse groups, and 2) by continually evaluating their personal values and beliefs and recognizing differences in perspective.^[53]

Similarly, Pumariega, Rothe, and Pumariega (2005) focus on the overall accessibility, acceptability, and relevance of programs for immigrants and refugees coming from specific cultural backgrounds. Differences in "symptom expression" between various racial and ethnic groups may bias both social workers and diagnostic tools during assessment and intervention efforts. Ignorance of the role and significance of such factors as site location, documentation, language, social stigma, and treatment methods on individual and community perceptions regarding services may render intervention and treatment efforts largely ineffective. The authors also discuss the importance of

incorporating the process of cultural transition into direct practice with immigrants and refugees by utilizing unique practices from a culture of origin into "Western-oriented" mental health services and re-evaluating characteristics and traditions within that culture that have been "negatively valued" in dominant, American culture. This includes recognizing and building on existing individual and cultural strengths to increase resilience.^[48]

When working directly with refugees, Adams, Gardiner, and Assefi (2004) emphasize the necessity of interpreters and advise the use of a preventive screening tool, such as an adaptation of the Harvard trauma questionnaire, to gather information regarding exposure to physical and psychological trauma, the presence of acute and chronic illnesses, use of alcohol and other drugs, and participation (voluntary and coerced) in specific cultural and medicinal practices, such as female genital surgery. Furthermore, they highlight the importance of contextualizing and understanding the migration process by inquiring as to an individual's country of origin and reasons for migration, experience of migration (time spent in refugee camps, circumstances surrounding travel, etc.), social roles and status prior to migrating (employment, education, etc.), and the status and location of close family members.^[54]

Addictions Management

Addiction is a chronic, progressive, and relapse-prone illness that affects a person both physically and psychologically. A person can become addicted to either substances (e.g. drugs, alcohol) or to certain activities (e.g. gambling, sex, the internet).

It is characterised by the following:

- The person continues the addictive behaviour despite the consequences
- The frequency or intensity of the behaviour increases over time
- When the behaviour is stopped, the person experiences unpleasant feelings and emotions

Signs and Symptoms

Signs of a possible gambling problem:

- Gambles more often
- Gamble for longer periods of time
- Gambles with larger amounts of money
- Incurs debts as a result of gambling
- Borrows money to gamble
- Gambles in spite of negative consequences, e.g. huge losses, poor job performance, relationship problems

- Gambles to escape from emotional problems, worries or frustrations
- Tells lies to hide/understate their gambling behaviour

Signs of a possible alcohol problem:

- Loses control over drinking
- Feels that drinking is getting out of hand and feels the need to cut down
- Feels annoyed when others criticise his drinking
- Has cravings to drink in the morning, or needs alcohol to steady his nerves
- Feels remorseful or guilty about drinking

Signs of a possible drug problem:

- Preoccupied with finding and consuming drugs
- Finds excuses to continue using drugs, despite promises to quit
- Conceals drug-taking behaviour, and is afraid of being discovered
- Has health and sleep problems
- Has frequent accidents and falls
- Feels exhausted and depressed because of the drug use

Specialized Programme

The National Addictions Management Service (NAMS) provides treatment for behavioural and substance addictions.

A multidisciplinary team at the Specialist Outpatient Clinic C provides comprehensive assessments, treatment planning, counselling and case management, relapse-prevention training, and psycho-education for patients and their families. Patients who require inpatient detoxification and rehabilitation are treated at the Serenity Centre at IMH.

To make an appointment to see a doctor, please call 6389 2200. You may also call the following Helplines for more information:

Combined drug intoxication

Combined drug intoxication (CDI), also known as **multiple drug intake (MDI)** or **lethal polydrug/polypharmacy intoxication**, is an unnatural cause of humandeath. It is distinct in that it is due to the simultaneous use of multiple drugs, whether the drugs are prescription, over-the-counter, recreational, or some other combination. The reasons for toxicity vary depending on the mixture of drugs.^[1]

CDI can occur with numerous drug combinations, including mixtures of over-the-counter (OTC) drugs, legally or illegally obtained prescription drugs, herbal mixtures, and home remedies. Ingestion of alcoholic beverages, in combination with other drugs, increases the risk of CDI.^[citation needed]

The CDI/MDI phenomenon seems to be becoming more common in recent years. In December 2007, according to Dr. John Mendelson, a pharmacologist at the California Pacific Medical Center Research Institute, deaths by combined drug intoxication were relatively "rare" ("one in several million"), though they appeared then to be "on the rise".^[2] In July 2008, the Associated Press and CNN reported on a medical study showing that over two decades, from 1983 to 2004, such deaths have soared.^[3] It has also become a prevalent risk for older patients.^[4]

Risk factors

People who engage in polypharmacy and other hypochondriac behaviors are at an elevated risk of death from CDI. Elderly people are at the highest risk of CDI, due to having many age-related health problems requiring many medications combined with age-impaired judgment, leading to confusion in taking medications.^{[3][4]}

Recent veterans back from war and suffering from Post Traumatic Stress Disorder (PTSD) in combat are at risk of dying from CDI/MDI.^[citation needed] Nine Veteran PTSD patients died from CDI/MDI in America in 2007.^[citation needed] There are anecdotal reports of veterans dying from combinations of antidepressants, antipsychotics, and tranquilizers used in combination with OTC medicines like diphenhydramine.^[citation needed] While still a U.S. senator from Illinois, United States President Barack Obama asked the U.S. Congress to inquire about the safety of these drugs.^[citation needed] There is an ongoing investigation of the matter.^[5]

Prevention

In general, the simultaneous use of multiple drugs should be carefully monitored by a qualified individual such as board certified and licensed medical doctor, either an M.D. or D.O.. Close association between prescribing physicians and pharmacies, along with the computerization of prescriptions and patients' medical histories, aim to avoid the occurrence of dangerous drug interactions. Lists of contraindications for a drug are usually provided with it, either in monographs, package inserts (accompanying prescribed medications), or in warning labels (for over-the-counter (OTC) drugs). CDI/MDI might also be avoided by physicians requiring their patients to return any unused prescriptions. Patients should ask their doctors and pharmacists if there are any interactions between the drugs they are taking.

Paracetamol deaths

On June 30, 2009 an FDA advisory panel recommended that Vicodin and another painkiller, Percocet, be removed from the market because they have allegedly caused over 400 deaths a year. The problem is with paracetamol (acetaminophen) overdose and liver damage. These two drugs, in combination with other drugs like Nyquil and Theraflu, can cause death by multiple drug intake and/or drug overdose. Another solution would be to not include paracetamol with Vicodin or Percocet.

Celebrity deaths due to CDI (or MDI)

Many celebrities have died from CDI/MDI, including:

- Singer Whitney Houston from drinking Alcohol beverages, Xanax, Benadryl, Cocaine, Cannabis and Flexeril.
- Writer/actor/comedian Freddy Soto from fentanyl, alprazolam and alcohol;
- Pro wrestling manager Elizabeth Ann Hulette aka Miss Elizabeth from alcohol, temazepam, oxycodone, hydrocodone and anabolic steroids;
- Child actress Anissa Jones from cocaine, PCP, methaqualone and secobarbital;
- Pro wrestler Louie Spicolli from carisoprodol, alcohol, painkillers and lorazepam;
- Hawthorne Heights guitarist Casey Calvert from citalopram, clonazepam and hydrocodone;^{[2][6]}
- Actor Nick Adams from paraldehyde and promazine;
- Guitarist Jimi Hendrix from alcohol and barbiturates;
- Singer Elvis Presley had over 10 drugs in his system^[citation needed] when he died. (The license of his physician, Dr. George C. Nichopoulos was later suspended and then revoked after press reports from then-ABC News reporter Geraldo Rivera on 20/20.);
- Lester Bangs from diazepam and propoxyphene;
- Deep Purple's Tommy Bolin from alcohol and prescription drugs and illegal drugs in combination;
- David Anthony Kennedy, son of Senator Robert Francis Kennedy, from cocaine, pethidine and thioridazine;
- Singer Johnny O'Keefe from combining several prescription drugs;
- Steve Clark of rock group DefLeppard from combining antidepressants, tranquilizers and alcohol;
- Actor Lani O'Grady of Eight is Enough from hydrocodone and fluoxetine;
- Bridgette Andersen from alcohol and multiple drugs;
- Edie Sedgwick from barbiturates and alcohol;
- Dana Plato from carisoprodol and hydrocodone;
- Actor/comedian Eric Douglas from alcohol, hydrocodone and temazepam;

- Actor Heath Ledger from toxic combination of prescribed drugs;
- Michael Jackson from propofol and two other sedatives;
- Brittany Murphy from multiple prescription drugs;
- The Rev of Avenged Sevenfold from oxycodone, oxymorphone, diazepam, nordiazepam and alcohol.
- Slipknot bassist Paul Gray from morphine and fentanyl
- New York Rangers forward Derek Boogaard from oxycodone and alcohol.

[7]

Anna Nicole Smith and Daniel Wayne Smith

In February 2007, five months after her son Daniel Wayne Smith was found dead from CDI with methadone, sertraline, and escitalopram in his system,^[8] Anna Nicole Smith also died from CDI/MDI, an autopsy detecting 11 drugs in her bloodstream. Deaths of Daniel Smith and Anna Nicole Smith were declared as an accidental drug overdose. ^{[9][10]}

Heath Ledger

Australian actor Heath Ledger was found dead on January 22, 2008, in his SoHo, New York City, apartment; the toxicology report concluded that the cause of death was "acute intoxication" resulting from "the combined effects of oxycodone, hydrocodone, diazepam, temazepam, alprazolam, and doxylamine" and "that the manner of [his] death" was "accident, resulting from the abuse of prescription medications or combine drug intoxication(CDI)."^{[3][11][12]}

Speedball deaths

Some controversially think speedball deaths are MDI/CDI when they might simply be drug overdose, which is completely different phenomena. The following list is for speedball CDI/MDI deaths only. Victims must be using cocaine and heroin in combination or amphetamine with demerol. An upper and a downer combination can be called speedball death.

Low-threshold treatment programs

Low-threshold treatment programs are harm reduction based health care centers targeted towards drug users.^[1] "Low-threshold" programs are programs that make minimal demands on the patient, offering services without attempting to control their intake of drugs, and providing counselling only if requested. Low-threshold programs may be contrasted with "high-threshold" programs, which require the user to accept a certain level of control and which demand that the patient accept counselling.^[2] Low-threshold treatment programs are not to be confused with simple needle exchange programs, and may include comprehensive healthcare and counseling services.

Background

Injection drug users (IDUs) are at risk of a wide range of health problems arising from non-sterile injecting practices, complications of the drug itself or of the lifestyle associated with drug use and dependence.^[4] Furthermore, unrelated health problems, such as diabetes, may be neglected because of drug dependence. However, despite their increased health care needs, IDUs do not have the required access to care or may be reluctant to use conventional services.^[5] Consequently, their health may deteriorate to a point at which emergency treatment is required,^[6] with considerable costs to both the IDUs and the health system. Accordingly harm reduction based health care centers, also known as *targeted health care outlet* or *low-threshold health care outlet* for IDUs have been established across a range of settings utilising a variety of models.^[1] These targeted outlets provide integrated, low-threshold services within a harm-reduction framework targeting IDUs, and sometimes include social and/or other services. Where a particular service is not provided, referral and assistance with access is available. In 2007, for example, 33% of all US needle-syringe programs (NSPs) provided on-site medical care, and 7% provided buprenorphine treatment.^[7] Similarly, in many European countries NSP outlets serve as low-threshold primary health care centers targeting primarily IDUs.^[8]

Health care models

These targeted outlets vary widely and may be either "distributive", providing basic harm reduction services and simple healthcare with facilitated referrals to specialist services, or "one-stop-shops" where a range of services including specialist services are provided onsite. The services being offered by these outlets range from simple needle and syringe provision, to expanded services including basic and preventive primary healthcare, hepatitis B and A vaccinations, hepatitis C testing, counselling, tuberculosis screening and sometimes opioid maintenance therapy. Some centers offer hepatitis, HIV treatment and dental care.^[9] The goal of these outlets is to provide: (1) opportunistic health care,^[10] (2) increased temporal and spatial availability of health care, (3) trustworthy services of health care, (4) cost-effective mode of health care, (5) targeted and tailored services.^[11]

In the United States as of 2011, 211 NSPs were known to be operating in 32 states, the District of Columbia, Puerto Rico and the Indian Nations.^[12] The bulk of funding has come from state and local governments,^[9] since for most of the last several decades, federal funding for needle exchange programs has been specifically banned.^[13]

Globally, as of 2008, at least 77 countries and territories offer NSPs with varying structures, aims and goals. Some countries use needle exchange services as part of integrated programs to contain drug use, while others aim simply to contain HIV infection as their top priority, considering reduction in

incidence of drug use as a much lower priority.^[14] Acceptance of NSPs vary widely from country to country. On the one hand, in Australia and New Zealand, electronic dispensing machines are available at selected locations such as the Auckland needle exchange and the Christchurch needle exchange, allowing needle exchange service 24 hours to registered users.^[15] On the other hand, over half of the countries in Asia, the Middle East, and North Africa retain the death penalty for drug offenses, although some have not carried out executions in recent years.^[16]

Evaluation

Low-threshold programs offering needle exchange have faced much opposition on political and moral grounds.^[17] Concerns are often expressed that NSPs may encourage drug use, or may actually increase the number of dirty needles in the community.^[18] Another fear is that NSPs may draw drug activity into the communities in which they operate.^[19] It has also been argued that in fighting disease, needle exchanges take attention away from bigger drug problems, and that, contrary to saving lives, they actually contribute to drug-related deaths.^[20] Even in Australia, which is considered a leading country in harm reduction,^[11] a survey showed that a third of the public believed that NSPs encouraged drug use, and 20% believed that NSPs dispensed drugs.^[21] In the United States, the ambivalent public attitude towards NSPs is often reflected in police interference, with 43% of NSP program managers reporting frequent (at least monthly) client harassment, 31% reporting frequent confiscation of clients' syringes, 12% reporting frequent client arrest, and 26% reporting uninvited police appearances at program sites.^[22] A single 1997 study which showed a correlation between frequent program use and elevated rates of HIV infection among IDUs in Vancouver, Canada,^[23] has become widely cited by opponents of NSPs as demonstrating their counter-productiveness

Authors from the 1997 Vancouver study have, in multiple publications, issued disclaimers against the misuse of their work by opponents of NSPs. They point out that frequent attendees of the program tended to be young and often indulged in extreme high-risk behaviors. The 1997 results were hence of a statistically biased sampling. They have emphasized that the correct message to be derived from their 1997 study can be read in the title of their work: "Needle exchange is not enough".^[23] This is the same message presented by many other articles since.

Comprehensive, systematic surveys of the costs and effectiveness of low-threshold primary healthcare programs are not available due to the heterogeneity of these programs and the study designs. Narrower focus studies dealing solely with the needle exchange issue are abundant, however, and generally support the thesis that NSPs reduce the risk of prevalence of HIV, hepatitis and other blood-borne diseases. These studies suggest that such outlets improve the overall health status of IDUs and save on the health budget

by reducing episodes in emergency departments and tertiary hospitals. In Australia, monitoring of drug users participating in NSPs showed the incidence of HIV among NSP clients to be essentially identical to that of the general population. Fears that NSPs may draw drug activity into the communities in which they operate are contradicted by a study that showed that by far the greatest number of clients of an NSP in Chicago came to the area to buy drugs (60%) rather than to exchange needles (3.8%).^[34]

Internationally, support for the effectiveness of low-threshold programs including needle exchange have come from studies conducted in Afghanistan, China, Spain, Taiwan, Estonia, Canada, Iran and many other countries. However, in many countries, there is strong opposition to such programs.

Despite the lack of definitive scientific evidence on the effectiveness of IDU-targeted low-threshold services, the available evidence, revealing barriers to service access and the late presentation of seriously ill IDUs to hospital, suggests the ongoing need for targeted and low-threshold services. Because of this, organizations ranging from the National Institutes of Health,^[45] the Centers for Disease Control,^[46] the American Bar Association,^[47] the American Medical Association,^[48] the American Psychological Association,^[49] the World Health Organization,^[50] and many others have endorsed low-threshold programs including needle exchange.

Polysubstance dependence

A person with **polysubstance dependence** is psychologically addicted to being in an intoxicated state without a preference for one particular substance.^[1] Although any combination of three drugs can be used, studies have shown that alcohol is commonly used with another substance.^[2] This is supported by one study on polysubstance use that separated participants who used multiple substances into groups based on their preferred drug. The three substances were cocaine, alcohol, and heroin, which implies that those three are very popular.^[3] Other studies have found that opiates, cannabis, amphetamines, hallucinogens, inhalants and benzodiazepines are often used in combination as well.^[4] The results of a long-term or longitudinal study on substance use led the researchers to observe that excessively using or relying on one drug increased the probability of excessively using or relying on another drug.^[5]

Epidemiology

There are not very many studies that have examined how often polysubstance dependence occurs or how many people are dependent on multiple substances. However, according to a study that analyzed the results from the National Epidemiological Survey on Alcohol and Related Conditions, approximately 215.5 out of a total of 43,093 individuals in the United States (0.5%) met the requirements for polysubstance abuse/dependence.^[6] Another study suggested

that the number of new cases of polysubstance dependence has been going up.^[7] This idea was supported by a study that took place in Munich, Germany. A group of researchers chose to look at responses to a survey using the M-Composite International Diagnostic Interview (M-CIDI). The M-CIDI is a version of the Composite International Diagnostic Interview (CIDI).^[8] The researchers collected data from 3,021 participants, all between the ages of 14 and 24, to estimate the prevalence, or total number of cases, of drug abuse/dependence and of polysubstance abuse/dependence.^[9] The results of this study indicated that of the 17.3% who said that they regularly used drugs, 40% said that they used more than one substance, but 3.9% specifically reported using three or more substances, indicating that there is a lot of overlap in the use of different substances.^[9] The researchers compared their results to earlier German studies and found that substance dependence seems to be increasing, at least in Germany.^[9]

Diagnosis

According to the DSM-IV, a diagnosis of polysubstance dependence must include a person who has used at least three different substances (not including caffeine or nicotine) indiscriminately, but does not have a preference to any specific one. In addition they must show a minimum of three of the following symptoms listed below, all within the past twelve months.^[10] There is a distinct difference between a person having three separate dependence issues and having Polysubstance dependence the main difference is polysubstance dependence means that they are not specifically addicted to one particular substance. This is often confused with multiple specific dependences present at the same time. To elaborate, if a person is addicted to three separate substance such as cocaine, methamphetamines and alcohol and is dependent on all three then they would be diagnosed with three separate dependence disorders existing together (cocaine dependence, methamphetamine dependence and alcohol dependence,) not polysubstance dependence.^[10] In addition to using three different substances without a preference to one, there has to be a certain level of dysfunction in a person's life to qualify for a diagnosis of polysubstance dependence.^[11] One of the bigger challenges that often occurs when trying to diagnose is the fact that people don't always report what they are taking because they are afraid of getting into legal trouble.^[12] When coding polysubstance Dependence in a DSM-IV it would be a multiaxial diagnosis 304.80- Polysubstance Dependence", next to the classification, it is accompanied by a list of other types of Substance dependence (e.g. "305.00 Alcohol Abuse" or "305.60 Cocaine Abuse").^[13]

The DSM-IV requires at least three of the following symptoms present during a 12 month period for a diagnoses of polysubstance dependence.^[14]

- Tolerance: Use of increasingly high amounts of a substance or they find the same amount less and less effective (the amount has to be at least 50% more of the original amount needed.)
- Withdrawal: Either withdrawal symptoms when drug stops being used or the drug is used to prevent withdrawal symptoms.
- Loss of control: Repeated use of more drugs than planned or use of the drugs over longer periods of time than planned.
- Inability to stop using: Either unsuccessfully attempted to cut down or stop using the drugs or a persistent desire to stop using.
- Time: Spending a lot of time obtaining drugs, using drugs, being under the influence of drugs, and recovering from the effects of drugs.
- Interference with activities: Give up or reduce the amount of time involved in recreational activities, social activities, and/or occupational activities because of the use of drugs.
- Harm to self: Continuous use of drugs despite having a physical or psychological problem caused by or made worse by the use of drugs.^[14]

Causes

Biological

There is data to support that some genes contribute to substance dependence.^[15] Some studies have focused on finding genes that predispose the person to be dependent on marijuana, cocaine, or heroin by studying genes that control a person's dopamine and opioid receptors, but no conclusive findings were reported.^[16] Other researchers found a connection between dopamine receptor genes and dependency on a substance.^[16] A potential problem with this study was that alcohol is commonly used with another substance, so the results of the study may not have been caused by dependency on a single substance. This means that multiple substances may have been contributing to the results, but the researchers suggested that further research should be done.^[16]

However, there are studies that have found evidence of the influence of genes on vulnerability to substance dependence.^[17] These studies often use genotype, or the genetic information found on a person's chromosomes, and phenotype, which consists of the visible features of a person, to look at genetic patterns.^[18] One study examined the phenotype and genotype of 1,858 participants from 893 families to look at differences in three nicotinic acetylcholine receptor genes found within these individuals.^[17] The experimenters found significant

connections between receptor genes for nicotine and polysubstance dependence, which indicated that differences in these genes can create the risk of being dependent on multiple substances.^[17]

Psychological

A 1989 study conducted by Khantzian and Treece found that nearly 60% of their opioid-dependent sample met criteria for an Axis II diagnosis. In the same study, 93% of the sample had a comorbid disorder, implying that the comorbid disorder plays some role in the addiction.^[19] It has also been shown that depression and polysubstance dependence are often both present at the same time. If a person is genetically predisposed to be depressed then they are at a higher risk of having polysubstance dependence.^[20]

Possibly the most widely accepted cause of addictions is the self-medication hypothesis, that views drug addiction as a form of coping with stress through negative reinforcement, by temporarily alleviating awareness of or concerns over the stressor. Substance users learn that the effects of each type of drug work to relieve or better painful states. They use drugs as a form of self-medication to deal with difficulties of self-esteem, relationships, and self-care. Individuals with substance use disorders often are overwhelmed with emotions and painful situations and turn to substances as a coping method.^[21]

Sociocultural

The sociocultural causes are areas in a person's life that might have influenced their decision to start and continue using multiple substances. Sociocultural causes can be divided into social causes and cultural causes.

- **Social Causes:** Some studies have shown that adolescents have one of the highest rates of polysubstance dependence. According to one study this population, ages 12–25, represents about half of the nation's illicit drug users. Of these illicit drug users, half of them have started using substances by the end of 12th grade. This could be attributed to social expectations of peers, peer pressure to fit in, or a way of numbing their emotions. Some of these young kids start trying different drugs initially to fit in, but then after a while they start to develop a tolerance for these substances and experience withdrawal if they don't have enough substances in their system and eventually become dependent on having the effects of substance dependence. With tolerance comes the craving for additional drugs to get high, this constant need for that feeling is polysubstance dependence.^[12]
- **Cultural Causes:** Another factor that influences the adolescent age group in our culture today is the media. There are so many "role models" who have major drug problems, promoting a lifestyle of partying and abusing

drugs. This gives our youth the idea that taking many different substances won't have any repercussions, leading to a large number of youth using substances.

In the older generations, polysubstance dependence had been linked to additional considerations such as personality disorder, homelessness, bipolar disorder, major depressive disorder and so on. Medical care being so expensive and difficult to get long term has been linked to polysubstance dependence. Those who need psychological help sometimes use multiple substances as a type of self medication to help manage their mental illnesses.^[12]

Associated cognitive impairments

Cognition refers to what happens in the mind, such as mental functions like "perception, attention, memory, language, problem solving, reasoning, and decision making."^[22] Although many studies have looked at cognitive impairments of individuals who are dependent on one drug, there are few researchers who have tried to determine the problems with cognitive functioning that are caused by dependence on multiple substances.^[23] Therefore, what is known about the effects of polysubstance dependence on mental abilities is based on the results of a few studies.

Learning ability

The effect of polysubstance dependence on learning ability is one area of interest to researchers. A study involving 63 polysubstance dependent women and 46 controls (participants who were not using drugs) used the Benton Visual Retention Test(BVRT) and the California Verbal Learning Test(CVLT) to look at visual memory and verbal ability.^[23] This study showed that in polysubstance dependent women, verbal learning ability was significantly decreased, though visual memory was not affected. In addition, alcohol and cocaine use led to more severe issues with verbal learning, recall, and recognition.^[23]

Memory, reasoning and decision making

Sometimes studies about specific groups in the general population can be informative. One study decided to test the cognitive abilities of participants in rave parties who used multiple substances. To do this, they compared 25 rave party attenders with 27 control participants who were not using drugs. The results of this study indicated that in general, the rave attender group did not perform as well on tasks that tested speed of information processing, working memory, knowledge of similarities between words, ability to attend to a task with interference in the background, and decision making.^[3] Certain drugs were associated with particular mental functions, but the researchers

suggested that the impairments for working memory and reasoning were caused by the misuse of multiple substances.^[3]

Another study that tried to find differences between the effects of particular drugs focused on polysubstance users who were seeking treatment for addictions to cannabis, cocaine, and heroin. They studied a group of polysubstance users and a group that was not dependent on any drugs. Because alcohol was a common co-substance for nearly all of the polysubstance user group, it was difficult to tell exactly which drugs were affecting certain cognitive functions. The researchers found that the difference in the two groups' performance levels on executive function, or higher-level cognitive processing tasks were consistently showing that the polysubstance group scored lower than the control group.^[24] In general, this meant that multiple substances negatively affected the polysubstance group's cognitive functioning. More specifically, the researchers found that the amount of cannabis and cocaine affected the verbal part of working memory, the reasoning task, and decision making, while cocaine and heroin had a similar negative effect on visual and spatial tasks, but cannabis particularly affected visual and spatial working memory.^[24] These results suggest that the combined use of cannabis, cocaine, and heroin impair more cognitive functions more severely than if used separately.^[24]

Alcohol's negative effects on learning, spatial abilities and memory has been shown in many studies.^[25] This raises a question: does using alcohol in combination with other substances impair cognitive functioning even more? One study decided to try to determine if polysubstance users who also abused alcohol would display poorer performance on a verbal learning and memory test in comparison to those who abused alcohol specifically.^[26] The California Verbal Learning Test (CVLT) was used due to its ability to "quantify small changes in verbal learning and memory" by evaluating errors made during the test and the strategies used to make those errors.^[26] The results of this study showed that the group of polysubstance and alcohol abusers did perform poorly on the CVLT recall and recognition tests in comparison to the group of alcohol abusers only, which implies that alcohol and drug abuse combined impaired the memory and learning of the group of polysubstance and alcohol abusers in a different way than the effects of alcohol alone can explain.^[26]

Does length of abstinence matter?

Does abstinence for long periods of time help polysubstance dependent individuals to recover cognitive functioning? To examine this question, a group of researchers tested 207 polysubstance dependent men, of whom 73.4% were dependent on three or more drugs.^[23] The researchers were interested in 6 areas of cognitive functioning, which included visual memory, verbal memory, knowledge of words, abstract reasoning, inhibition (interference), and attention.^[23] The study used the Benton Visual Retention Test (BVRT) for

testing visual memory, the California Verbal Learning Test (CVLT) for verbal memory, the Wechsler Adult Intelligence Scale vocabulary portion for knowledge of words, the Booklet Category Test for abstract reasoning, the Stroop Neuropsychological Screening task for inhibition, and the Trail Making Test for attention.^[23] The results showed that neuropsychological ability did not improve with increases in the length of time abstinent. This suggests that polysubstance dependence leads to serious impairment which cannot be recovered much over the span of a year.^[23]

Gender differences

Women and men differ in various ways when it comes to addictions. Research has shown that women are more likely to be polysubstant dependent. It has been noted that a larger percentage of women abuse licit (legal) drugs such as tranquilizers, sedatives, and stimulants. On the other hand, men are more likely to abuse illicit (illegal) drugs such as cocaine, meth, and other street drugs. It is also interesting to note, as research suggests, that women addicts more frequently have a family history of drug abuse. When asked to describe their onset of addictions, women more frequently describe their addiction as sudden where as men describe them as gradual. Females have a higher percentage of fatty tissues and a lower percentage of body water than men. Therefore, women have slower absorption rates of drug substances. This means these substances are at a higher concentration in a women's bloodstream. Women addicts are known to be at greater risk for fatty liver disease, hypertension, anemia, and other disorders.^[27]

Comorbidity of mental disorders

For most of these disorders, in relation to polysubstance dependence, there is a vicious cycle that those with a dependence go through. First, Ingesting the drug creates a need for more, which creates a dopamine surge, which then creates pleasure. As the dopamine subsides, the pleasure adds to the emotional and physical pain and triggers stress transmitters, which in turn creates a craving, which must then be medicated, and thus the cycle begins again. However, the next time more drugs are needed to feel as good as they did before .^[28]

Depression

Scientists have hypothesized that the use of a drug either causes a mood disorder such as depression or at least attributes to a pre-existing one. Additionally, the substances that sufferers of depression use can be a misguided method of self medication in order to manage their depression.^[29] This is the classic chicken or egg hypothesis, does the pre-existing condition cause dependence or does dependence cause the condition? The underlying mental illness needs to be identified and treated in conjunction with treating the polysubstance dependence in order to increase the success rate of

treatment and decrease the probability of relapse.^[30] One specific study focused on alcohol and depression, because they are so commonly inter-related. Researchers have discovered that depression continues for several weeks after a patient had been rehabilitated and those who relapsed developed depression again. This means that the onset of depression happens after alcohol dependence occurs, which means that alcohol is a major contributor to depression.^[30]

Eating disorders

One study showed that patients who are recovering from an addiction, who have had an eating disorder in the past, use food to try and replace the substance that they are no longer getting. Or they obsess over controlling their weight and appearance. Some rehabilitation centers have licensed nutritionist to help patients develop healthy eating habits to help them cope while recovering from their addiction. It is important that those who have a former eating disorder be taught how to eat healthfully, so they don't continuously switch from one addiction back to another.^[31]

Treatment

Treatment for polysubstance dependence has many critical aspects. Drug rehabilitation is a lengthy and difficult process. Treatment must be individualized and last a sufficient amount of time to ensure the patient has kicked the addictions and to ensure the prevention of relapse. The most common forms of treatment for polysubstance dependence include: in and outpatient treatment centers, counseling and behavioral treatments, and medications. It is important that treatments be carried on throughout the patient's life in order to prevent relapse. It is a good idea that recovering addicts continue to attend social support groups or meet with counselors to ensure they do not relapse.^[32]

Inpatient treatment center

Inpatient treatment centers are treatment centers where addicts move to the facility while they are undergoing treatment. Inpatient treatment centers offer a safe environment where patients will not be exposed to potentially harmful situations during their treatments as they would on the outside. Inpatient treatment centers see much higher success rates than the alternative outpatient treatments. Inpatients usually undergo the process of detoxification. Detox involves the removal (usually medically) of all drug substances from the body. Once detox is complete, the withdrawal symptoms kick in (2–3 days later). These symptoms include, but are not limited to: nausea, depression, anxiety, panic attacks, restlessness, and drug cravings. During their stay in the treatment facility, patients are learning to manage and identify their drug

addictions and to find alternate ways to cope with whatever is the cause of their addiction.^[33]

Outpatient treatments

Outpatient treatments include many of the same activities offered in an inpatient treatment facility, but the patient is not protected by the secure and safe environment of an inpatient treatment center. For this reason, they are significantly less effective. The patient usually continues to hold a job and goes to treatment nightly.^[33]

Twelve-step programs

Both in-patient and out-patient treatments can offer introductions to 12-step programs. Suggested 12-step programs are Alcoholics Anonymous (AA) and Narcotics Anonymous (NA). They offer regular meetings where members can discuss their experiences in a non-judgmental and supportive place. In one study, conducted on 12-step outpatients, 1 in 5 reported abstinence from drug abuse 1 year post treatment. Twelve Step programs and other social support groups are a good way to prevent relapse.^[34]

Cognitive behavioral therapy

Also offered to patients are one-on-one counseling sessions and cognitive behavioral therapy(CBT).^[33] When looked at through a cognitive-behavioral perspective, addictions are the result of learned behaviors developed through positive experiences. In other words, when an individual uses a drug and receives desired results (happiness, reduced stress, etc.) it may become the preferred way of attaining those results, leading to addictions. The goal of CBT is to identify the needs that the addictions are being used to meet and to develop skills and alternative ways of meeting those needs. The therapist will work with the patient to educate them on their addictions and give them the skills they need to change their cognition's and behaviors. Addicts will learn to identify and correct problematic behavior. They will be taught how to identify harmful thoughts and drug cravings. CBT is an effective treatment for addictions.^[35]

Medications

Medications can be very helpful in the long term treatment of polysubstance dependence. Medications are a useful aid in helping to prevent or reducing drug cravings. Another benefit of Medications is helping to preventing relapse. Since drug addictions effect brain functioning, medications assist in returning to normal brain functioning. Polysubstance abusers require medications for each substance they are addicted to, as the current medications do not treat all

addictions simultaneously. Medications are a useful aid in treatments, but are not effective when they are the sole treatment method.

Medications that aid in curing addictions

- **Methadone:** treatment for heroin addiction.^[36]
- **Naltrexone:** Reduces opiates and alcohol cravings.
- **Disulfiram:** induces intense nausea after drinking alcohol.
- **Acamprosate:** decreases the pleasurable effects of alcohol.
- **Buprenorphine/naloxone:** The two drugs together reduce cravings and block the pleasure from opiates.^[37]

Risk factors in pregnancy

Factors increasing the risk (to either the woman, the fetus/es, or both) of pregnancy beyond the normal level of risk may be present in a woman's medical profile either before she becomes pregnant or during the pregnancy.^[1] These pre-existing factors may relate to physical and/or mental health, and/or to social issues, or a combination. ^[MMHE 1]

Common risk factors

Some common factors include:

- **Age** of either parent
 - Adolescent parents

Further information: [Teenage_pregnancy#Medical_outcomes](#)

- Older parents

Further information: [Paternal age, Maternal age effect, and Pregnancy over age 50](#)

- **Teratogens**

Main article: [Teratology](#)

- Drug use or addiction
 - [Alcohol Fetal alcohol syndrome, Fetal alcohol spectrum disorder](#)
 - [Tobacco Smoking and pregnancy](#)
 - See also [Prenatal cocaine exposure](#), [Prenatal methamphetamine exposure](#), [Long-term effects of cannabis#Pregnancy](#)

- Medication(s).^[MMHE 2]Anti-depressants, for example, may increase risks of such outcomes as preterm delivery.^[2]

Further information: Pregnancy category

- Ionizing radiation
- **Risks arising from previous pregnancies:**
 - Complications experienced during a previous pregnancy are more likely to recur.
 - Many previous pregnancies. Women who have had five previous pregnancies face increased risks of very rapid labor and excessive bleeding after delivery.
 - Multiple previous fetuses. Women who have had more than one fetus in a previous pregnancy face increased risk of mislocated placenta.^[MMHE 3]

Further information: multiple births

- **Social and socioeconomic factors.** Generally speaking, unmarried women and those in lower socioeconomic groups experience an increased level of risk in pregnancy, due at least in part to lack of access to appropriate prenatal care.^[MMHE 4]
- Unintended pregnancy. Unintended pregnancies preclude preconception care and delays prenatal care. They preclude other preventive care, may disrupt life plans and on average have worse health and psychological outcomes for the mother and, if birth occurs, the child.^{[3][4]}
- **Height.** Pregnancy in women whose height is less than 1.5 meters (5 feet) correlates with higher incidences of preterm birth and underweight babies. Also, these women are more likely to have a small pelvis, which can result in such complications during childbirth as shoulder dystocia.^[MMHE 5]
- **Weight**
 - Low weight: Women whose pre-pregnancy weight is less than 45.5 kilograms (100 pounds) are more likely to have underweight babies.
 - Obese women are more likely to have very large babies, potentially increasing difficulties in childbirth. Obesity also increases the chances of developing gestational diabetes, high blood pressure, preeclampsia, experiencing postterm pregnancy and/or requiring a cesarean delivery.^[MMHE 6]

Disorders and diseases

Pre-existing disorders and/or congenital defects can increase the usual risks involved in pregnancy. In such circumstances, women who wish to continue with a pregnancy require extra medical care, often from an interdisciplinary

team. Such a team might include (besides an obstetrician) a specialist in the disorder and other practitioners (for example, maternal-fetal specialists, nutritionists, etc.).^[MMHE 7]

These conditions include:

- Cancer^[MMHE 8]
- Chronic hypertension^[MMHE 9]
- Cirrhosis^[MMHE 10]
- Congenital disorders that may be passed on to offspring
- Diabetes^[MMHE 11]
- Heart defects, especially primary pulmonary hypertension and Eisenmenger's syndrome^[MMHE 12]
- Hyperthyroidism^[MMHE 13]
- Hypothyroidism^[MMHE 14]
- Kidney disorders^[MMHE 15]
- Lupus^[MMHE 16]
- Mental health.
 - Depression has been linked to higher rates of preterm delivery.^[5]
- Respiratory disorders and diseases (associated, for example, with placental abruption)^[6]
 - Asthma^{[7][8]}
- Seizure disorders^[MMHE 17]
- Structural abnormalities in the cervix
- Structural abnormalities in the uterus
- Valvular heart disease
- Viral hepatitis^[MMHE 18]

High-risk pregnancy

Some disorders and conditions can mean that pregnancy is considered high-risk (about 6-8% of pregnancies in the USA) and in extreme cases may be contraindicated. High-risk pregnancies are the main focus of doctors specialising in maternal-fetal medicine.

Serious pre-existing disorders which can reduce a woman's physical ability to survive pregnancy include a range of congenital defects (that is, conditions with which the woman herself was born, for example, those of the heart or reproductive organs, some of which are listed above) and diseases acquired at any time during the woman's life.

Low-risk pregnancy

A Dutch 2010 research showed that "low-risk" pregnancy in the Netherlands may actually carry a higher risk of perinatal death than a "high-risk" pregnancy.^[9] A medical news report observed, "Under the Dutch system of

obstetric care, women with low-risk pregnancies are supervised by a midwife in primary care, with the choice of a home or hospital delivery, whereas those with potential complicating factors are supervised by an obstetrician throughout their pregnancy and given a hospital delivery".^[10]

Self-medication

Self-medication is a human behavior in which an individual uses unprescribed drugs to treat untreated and often undiagnosed medical ailments.

The psychology of such behavior within the specific context of using recreational drugs, psychoactive drugs, alcohol, and other self-soothing forms of behavior to alleviate symptoms of mental distress, stress and anxiety,^[1] including mental illnesses and/or psychological trauma,^{[2][3]} is particularly unique and can serve as a serious detriment to physical and mental health if motivated by addictive mechanisms.

Self-medication is often seen as gaining personal independence from established medicine.^[4]

Definition

Generally speaking, self-medication is defined as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms"^{[5][6]}

Psychology and psychiatry

As different drugs have different effects, they may be used for different reasons. According to the self-medication hypothesis (SMH), the individuals' choice of a particular drug is not accidental or coincidental, but instead, a result of the individuals' psychological condition, as the drug of choice provides relief to the user specific to his or her condition. Specifically, addiction is hypothesized to function as a compensatory means to modulate effects and treat distressful psychological states, whereby individuals choose the drug that will most appropriately manage their specific type of psychiatric distress and help them achieve emotional stability.^{[7][8]}

The self-medication hypothesis (SMH) originated in papers by Edward Khantzian, Mack and Schatzberg,^[9] David F. Duncan,^[10] and a response to Khantzian by Duncan.^[11] The SMH initially focused on heroin use, but a follow-up paper added cocaine.^[12] The SMH was later expanded to include alcohol,^[13] and finally all drugs of addiction.^{[7][14]}

According to Khantzian's view of addiction, drug users compensate for deficient ego function^[9] by using a drug as an "ego solvent", which acts on parts of the

self that are cut off from consciousness by defense mechanisms.^[7] According to Khantzian,^[12] drug dependent individuals generally experience more psychiatric distress than non-drug dependent individuals, and the development of drug dependence involves the gradual incorporation of the drug effects and the need to sustain these effects into the defensive structure-building activity of the ego itself. The addict's choice of drug is a result of the interaction between the psychopharmacologic properties of the drug and the affective states from which the addict was seeking relief. The drug's effects substitute for defective or non-existent ego mechanisms of defense. The addict's drug of choice, therefore, is not random.

While Khantzian takes a psychodynamic approach to self-medication, Duncan's model focuses on behavioral factors. Duncan described the nature of positive reinforcement (e.g., the "high feeling", approval from peers), negative reinforcement (e.g. reduction of negative affect) and avoidance of withdrawal symptoms, all of which are seen in those who develop problematic drug use, but are not all found in all recreational drug users.^[10] While earlier behavioral formulations of drug dependence using operant conditioning maintained that positive and negative reinforcement were necessary for drug dependence, Duncan maintained that drug dependence was not maintained by positive reinforcement, but rather by negative reinforcement. Duncan applied a public health model to drug dependence, where the agent (the drug of choice) infects the host (the drug user) through a vector (e.g., peers), while the environment supports the disease process, through stressors and lack of support.^{[10][15]}

Khantzian revisited the SMH, suggesting there is more evidence that psychiatric symptoms, rather than personality styles, lie at the heart of drug use disorders.^[7] Khantzian specified that the two crucial aspects of the SMH were that (1) drugs of abuse produce a relief from psychological suffering and (2) the individual's preference for a particular drug is based on its psychopharmacological properties.^[7] The individual's drug of choice is determined through experimentation, whereby the interaction of the main effects of the drug, the individual's inner psychological turmoil, and underlying personality traits identify the drug that produces the desired effects.^[7]

Meanwhile, Duncan's work focuses on the difference between recreational and problematic drug use.^[16] Data obtained in the Epidemiologic Catchment Area Study demonstrated that only 20% of drug users ever experience an episode of drug abuse (Anthony & Helzer, 1991), while data obtained from the National Comorbidity Study demonstrated that only 15% of alcohol users and 15% of illicit drug users ever become dependent.^[17] A crucial determinant of whether a drug user develops drug abuse is the presence or absence of negative reinforcement, which is experienced by problematic users, but not by recreational users.^[18] According to Duncan, drug dependence is an avoidance behavior, where an individual finds a drug that produces a temporary escape from a problem, and taking the drug is reinforced as an operant behavior.^[10]

Specific mechanisms

Some mental illness sufferers attempt to correct their illnesses by use of certain drugs. Depression is often self medicated with alcohol, tobacco, cannabis, or other mind-altering drug use.^[19] While this may provide immediate relief of some symptoms such as anxiety, it may evoke and/or exacerbate some symptoms of several kinds of mental illnesses that are already latently present,^[20] and may lead to addiction/dependence, among other side effects of long-term use of the drug.

Sufferers of post-traumatic stress disorder have been known to self-medicate, as well as many individuals without this diagnosis who have suffered from (mental) trauma.^[21]

Due to the different effects of the different classes of drugs, the SMH postulates that the appeal of a specific class of drugs differs from person to person. In fact, some drugs may be aversive for individuals for whom the effects could worsen affective deficits.^[7]

CNS depressants

Alcohol and sedative/hypnotic drugs, such as barbiturates and benzodiazepines, are central nervous system (CNS) depressants that lower inhibitions via anxiolysis. Depressants produce feelings of relaxation and sedation, while relieving feelings of depression and anxiety. Though they are generally ineffective antidepressants, as most are short-acting, the rapid onset of alcohol and sedative/hypnotics softens rigid defenses and, in low to moderate doses, provides relief from depressive affect and anxiety.^{[7][8]} As alcohol also lowers inhibitions, alcohol is also hypothesized to be used by those who normally constrain emotions by attenuating intense emotions in high or obliterating doses, which allows them to express feelings of affection, aggression and closeness.^{[8][14]} People with social anxiety disorder commonly use these drugs to overcome their highly set inhibitions.^[22]

Psychostimulants

Psychostimulants, such as cocaine, amphetamines, methylphenidate, caffeine, and nicotine, produce improvements in physical and mental functioning, including increased energy and feelings of euphoria. Stimulants tend to be used by individuals who experience depression, to reduce anhedonia^[8] and increase self-esteem.^[13] The SMH also hypothesizes that hyperactive and hypomanic individuals use stimulants to maintain their restlessness and heighten euphoria.^{[8][12][13]} Additionally, stimulants are useful to individuals with social anxiety by helping individuals break through their inhibitions.^[8]

Opiates

Opiates, such as heroin and morphine, function as an analgesic by binding to opioid receptors in the brain and gastrointestinal tract. This binding reduces the perception of and reaction to pain, while also increasing pain tolerance. Opiates are hypothesized to be used as self-medication for aggression and rage.^{[12][14]} Opiates are effective anxiolytics, mood-stabilizers, and anti-depressants, however, people tend to self-medicate anxiety and depression with depressants and stimulants respectively, though this is by no means an absolute analysis.^[8]

Cannabis

Cannabis is not a depressant like alcohol is. It's considered to have both stimulating and sedating properties and anxiolytic or anxiogenic properties, depending on the individual and circumstances of use. Depressant properties are more obvious in occasional users, and stimulating properties are more common in chronic users. Khantzian noted that research had not sufficiently addressed a theoretical mechanism for cannabis, and therefore did not include it in the SMH.^[8] Cannabis is commonly used to self-medicate individuals with attention deficit hyperactivity disorder, which has shown to improve symptoms for individuals with ADHD in studies.^[23]

Effectiveness

Self medicating excessively for prolonged periods of time with benzodiazepines or alcohol often makes the symptoms of anxiety or depression worse. This is believed to occur as a result of the changes in brain chemistry from long-term use.^{[24][25][26][27][28]} Of those who seek help from mental health services for conditions including anxiety disorders such as panic disorder or social phobia, approximately half have alcohol or benzodiazepine dependence issues.^[29]

Sometimes anxiety precedes alcohol or benzodiazepine dependence but the alcohol or benzodiazepine dependence acts to keep the anxiety disorders going, often progressively making them worse. However, some people addicted to alcohol or benzodiazepines, when it is explained to them that they have a choice between ongoing poor mental health or quitting and recovering from their symptoms, decide on quitting alcohol or benzodiazepines or both. It has been noted that every individual has an individual sensitivity level to alcohol or sedative hypnotic drugs, and what one person can tolerate without ill health, may cause another to suffer very ill health, and even moderate drinking can cause rebound anxiety syndrome and sleep disorders. A person suffering the toxic effects of alcohol will not benefit from other therapies or medications, as these do not address the root cause of the symptoms.^[29]

Infectious disease

Self-medication with antibiotics is commonplace in some countries, such as Greece.^[30] Such use is cited as a potential factor in the incidence of certain antibiotic resistant bacterial infections in places like Nigeria.^[31]

In a questionnaire designed to evaluate self-medication rates amongst the population of Khartoum, Sudan, 48.1% of respondents reported self-medicating with antibiotics within the past 30 days, 43.4% reported self-medicating with antimalarials, and 17.5% reported self-medicating with both. Overall, the total prevalence of reported self-medication with one or both classes of anti-infective agents within the past month was 73.9%.^[6] Furthermore, according to the associated study, data indicated that self-medication "varies significantly with a number of socio-economic characteristics" and the "main reason that was indicated for the self-medication was financial constraints".^[6]

Similarly, in a survey of university students in Southern China, 47.8% of respondents reported self-medicating with antibiotics.^[32]

Physicians and medical students

In a survey of West Bengal, India undergraduate medical school students, 57% reported self-medicating. The type of drugs most frequently used for self-medication were antibiotics (31%), analgesics (23%), antipyretics (18%), antiulcerics (9%), cough suppressants (8%), multivitamins (6%), and anthelmintics (4%).^[33]

Another study indicated that 53% of allopathic physicians in Karnataka, India reported self-administration of antibiotics.^[34]

Children

A study of Luo children in western Kenya found that 19% reported engaging in self-treatment with either herbal or pharmaceutical medicine. Proportionally, boys were much more likely to self-medicate using conventional medicine than herbal medicine as compared with girls, a phenomenon which was theorized to be influenced by their relative earning potential.^[35]

Regulation

Self-medication is highly regulated in much of the world and many classes of drugs are available for administration only upon prescription by licensed medical personnel. Safety, social order, commercialization, and religion have historically been among the prevailing factors that lead to such prohibition.

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