

Self-medication

This article is about drug use without supervision of a physician. For the operant conditioning concept, see [Self-administration](#). For other uses, see [Self-medication \(disambiguation\)](#).

Self-medication is a human behavior in which an individual uses a substance or any exogenous influence to self-administer treatment for physical or psychological ailments.

The most widely self-medicated substances are over-the-counter drugs and dietary supplements. The psychology of self-medicating with psychoactive drugs is typically within the specific context of using recreational drugs, alcohol, comfort food, and other 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] and it can be seen as a human right, implicit in, or closely related to the right to refuse professional medical treatment.^[5]

1 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”^{[6][7]}

2 Psychology and psychiatry

2.1 Self-medication hypothesis

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.^{[8][9]}

The self-medication hypothesis (SMH) originated in papers by Edward Khantzian, Mack and Schatzberg,^[10] David F. Duncan,^[11] and a response to Khantzian by Duncan.^[12] The SMH initially focused on heroin use, but a follow-up paper added cocaine.^[13] The SMH was later expanded to include alcohol,^[14] and finally all drugs of addiction.^{[8][15]}

According to Khantzian's view of addiction, drug users compensate for deficient ego function^[10] by using a drug as an “ego solvent”, which acts on parts of the self that are cut off from consciousness by defense mechanisms.^[8] According to Khantzian,^[13] 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.^[11] 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.^{[11][16]}

Khantzian revisited the SMH, suggesting there is more evidence that psychiatric symptoms, rather than personality styles, lie at the heart of drug use disorders.^[8] 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 prefer-

ence for a particular drug is based on its psychopharmacological properties.^[8] 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.^[8]

Meanwhile, Duncan's work focuses on the difference between recreational and problematic drug use.^[17] 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.^[18] 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.^[19] 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.^[11]

2.2 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.^[20] 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,^[21] and may lead to addiction/dependence, among other side effects of long-term use of the drug.

Sufferers of posttraumatic stress disorder have been known to self-medicate, as well as many individuals without this diagnosis who have suffered from (mental) trauma.^[22]

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.^[8]

2.2.1 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.^{[8][9]} 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.^{[9][15]} People with social anxiety disorder commonly use these drugs to overcome their highly set inhibitions.^[23]

2.2.2 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^[9] and increase self-esteem.^[14] The SMH also hypothesizes that hyperactive and hypomanic individuals use stimulants to maintain their restlessness and heighten euphoria.^{[9][13][14]} Additionally, stimulants are useful to individuals with social anxiety by helping individuals break through their inhibitions.^[9]

2.2.3 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.^{[13][15]} 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.^[9]

2.2.4 Cannabis

Cannabis is paradoxical in that it simultaneously produces stimulating, sedating and mildly psychedelic properties and both 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.^[9]

2.3 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

der 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]

3 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%.^[7] 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”.^[7]

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

4 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 physicians in Karnataka, India reported self-administration of antibiotics.^[34]

5 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]

6 Regulation

Main article: Regulation of therapeutic goods

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.

7 See also

- Biodiversity and drugs
- Cognitive liberty
- Comfort food
- Dual diagnosis
- Psychological trauma
- Zoopharmacognosy

8 References

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9 Further reading

- Jain, Sonam; Reetesh Malvi; Jeetendra Kumar Purviya (2011). “Concept of Self Medication: A Review” (PDF). *International Journal of Pharmaceutical & Biological Archives* **2** (3): 831–836.

10 External links

- Comprehensive Drug Self-administration and Discrimination Bibliographic Databases

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