Contemporary Substances of Abuse : An Overview

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In recent years, Kenya has witnessed an increase in illicit substance abuse especially in urban settings including schools and other learning institutions. This paper discusses the contemporary substances of abuse that may be encountered. Both use reduction and harm reduction are presented as two alternatives upon which comprehensive national policy addressing drug/substance abuse should focus on.

Key Words: Drug abuse

INTRODUCTION

Drug abuse can be defined as the ingestion of a psychoactive substance that is capable of producing physical or psychological dependence, in an amount and frequency likely to result in overt intoxication, or lead to physical or psychological problems or anti-social behaviour. Put in another way, when the continued uses of a mood altering substance means more to the individual than the problems associated with such use, that person can be described as abusing drugs [1].

There are two models that seek to explain the phenomenon of drug abuse. These are the Medical (Pharmacological) Model, and the Social Deviance Model.

According to the Medical Model, a maladaptive pattern of psychoactive substance use is indicated by at least one of the following observations:

- Continued use despite knowledge of having a persistent or recurrent social, occupational, psychological, or physical problem that is caused or exacerbated by use of the psychoactive substance.
- Recurrent use in situations in which use is physically hazardous e.g. driving while intoxicated. Some symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time [2].
- According to Social Deviance Model, drug abuse refers to the use, usually by self administration, of any drug in a manner that deviates from the approved medical or social patterns within a given culture. The term conveys a notion of social disapproval, and is not necessarily descriptive of any particular pattern of drug use or its potential adverse consequences [3].

The question often raised is "When does drug use become abuse?". Drug abuse is characterised by any or all of the following:

- the use of any prohibited (illicit) substance
- the use of any therapeutic drug for any other than its intended purpose
- the intentional taking of any therapeutic drug in amounts greater than prescribed
- the self administration of any drugs by routes other than the medically approved one. Excessive use of illicit social drugs (i.e. tobacco, caffeine, alcohol)
- the taking of two or more intoxicating substances in combination in order to obtain a more pleasurable or intense "high".

SUBSTANCES OF ABUSE

Drug (or substance) of abuse is viewed as one, which when taken for non-medical reasons, through any route of administration, alters mood, level of perception, or brain functioning.

Substances of abuse fall into the following categories.

- Psychoanaleptics (stimulants)
- Psycholeptics (inhibitors)
- Psychodysleptics (hallucinogens)
- Designer drugs
- Inhalants
- Exotics

Psychoanaleptic

Stimulants are substances that predominantly stimulate brain activity. There are several types of stimulants and these include amphetamines, caffeine, cocaine, nicotine and the antidepressives.

1. Amphetamine

These are rarely encountered today. They have no rational medical indications. The look-alike substances are dangerous. These substances produce strong psychological dependence. However physical dependence is minor.

Withdrawal symptoms consist of craving and depression. In contemporary society methamphetamine is available for abuse and goes by various names such as "ice", "crystal" or "meth".

2. *Caffeine*

This is found naturally in coffee, tea and chocolates. In Western countries these OTC stimulants are abused by adolescents and college students. Such OTC preparations include Viviran, No-Doz. Jet Awake, etc.

3. *Cocaine*

Cocaine has been abused for a long time. As a sulfate, it exists as a crude paste and is usually smoked. As a hydrochloride, it is insufflated (snorted), smoked, injected, "gummed", swallowed or body packed. Cocaine is also abused as a free base. One of the dangerous derivatives of cocaine is "crack". Crack is addictive, deadly and is quite common in Western countries. Crack use has resulted in several deaths particularly in Europe and North America. Cocaine use is prevalent among adolescents because of lower prices, and availability.

Psychololeptics

These are substances that predominantly inhibit brain activity. The inhibitors include the following: the opiates (opium, morphine, heroine, methadone), the barbiturates, the benzodiazepines, and various groups of antipsychotics (neuroleptics).

In Kenya, the misuse of benzodiazepines (especially diazepam) is on the increase. This is due to several factors, e.g. irrational prescribing by clinicians, irrational use by patients for coping with social stress and insomnia, wide availability due to laxity of ethics, professionalism and control and availability of cheap affordable generics.

Narcotics Analgesics

These are defined as natural, semi synthetic, or synthetic drugs which have morphine-like properties and which, with repeated use, may result in physical and/or psychological dependence. The use of narcotic analgesics include analgesia, sedation, euphoria, mood changes and mental clouding. Overuse of these compounds results in coma, respiratory depression and miosis.

During abuse of narcotics, tolerance develops very quickly. Physical dependence is the hallmark. There is continued use behaviour to avoid withdrawal. All pharmacological effects are reversed in seconds when Naloxone (a pure narcotic antagonist) is administered. Naloxone is used widely in "Detox" centres and during rehabilitation of morphine addicts. In contemporary society, combinations of Taiwin **(T)** and Pyribenzamine **(Blue)** are abused. This combination is an inexpensive heroine substitute with opiate like effects. Its use results in seizures since often times the ratio of drugs in the combination is incorrect.

Psychodysleptics

These are substances that neither inhibit nor stimulate the nervous system, but change the balance of brain activity. There are several types of hallucinogenic drugs. These include; Phenylethylamine (mescaline); Arylcycloalkylamine (PCP/Ketamine) derivatives and cannabinols.

1. *Indolealkylamine*

These substances are similar to 5-hydroxytryptamine. Lysergic acid is derived from ergot fungus. LSD is found in morning glory seeds. DMT is found in psilocybe and Conocybe mushrooms. All these compounds produce varying degrees of psychedelic effects. Abuse of these compounds results in rapidly developing but short-lived tolerance. With the LSD, psychological dependence liability is low and there is no physical dependence.

2. *Phenylethylamines (mescaline)*

These have a close structural relationship to amphetamines. Mescaline is extracted from Peyote cactus flowers. MDA (3,4-methylenedioxyamphetamine) is a synthetic derivative of phenylethylamine.

The psychoactive effects are similar to the LSD family. MDA abuse results in rapidly developing but short lived tolerance.

3. *Arylcycloalkylamines (PCP/Ketamine)*

These substances frequently cause hallucinogenic episodes with relatively low dosage levels. The effects of these substances vary widely with some substances causing stimulation, depression, analgesia, anaesthesia and hallucination. The effects depend on the dosage, the user and the situation. Historically, PCP initially marketed by Parke Davis was withdrawn during clinical trials due to extreme side effects which included seizures, delirium, confusion, visual disorientation and hallucination.

4. *Cannabinols*

These substances include marijuana and hashish. Marijuana (1-5% THC) is prepared from flowers and leaf parts of *Cannabis sativa.* Hashish (4-10% THC) is a combination of dried resinous exudate and the compressed flowers obtained from the female plant. Hashish oil (10-60% THC) is extracted from hashish through solvation, boiling and filtration. The hallucinogenic effects of these compounds are dose related and relatively mild. Tolerance develops on heavy use. Psychological dependence can develop. In heavy users, physical dependence may also develop.

DESIGNER DRUGS

These are defined as substances other than controlled substances that have a chemical structure substantially similar to a controlled substance, or that was

specifically designed to produce an effect similar to that of a controlled substance.

These substances are deliberately manufactured in illegal laboratories. They are dangerous substances whose use is totally illegal and with no medical basis. They should not exist in society. These substances include;

1. **Fentanyl Analogues:** These include alpha-methyl fentanyl which is 1000-3000 times more potent than morphine. In contemporary society, it is sold as "china white".
2. **Meperidine Analogues:** These include; MPP which is 1-methyl-4-propionoxypiperidine which is "synthetic heroine". This compound is easily manufactured. Careless manufacture yield MPTP which is 1 -methyl-4-phenyl *1,2,5,6*-tetrahydropyridine. MPTP is devoid of narcotic analgesic properties but has highly damaging effects.
3. MDMA (Ecstasy): This hallucinogenic substance is related to amphetamine. It is abused in Europe and North America. In low doses it produces effects similar to MDA.

Inhalants

In Kenya, just like other contemporary societies, drug abuse frequently involves the use of inhalation substances. These substances are usually compounds which are freely available cheap, and include the following: Gasoline; toluene; trichioroethylene; carbon tetrachloride; nitrous oxide; acetone; amyl/isobutyl/nitrate.

The use of inhalation compounds is quite common in Kenya. In particular, glue, used in the shoe industry is particularly targeted for abuse by street children since it is freely available and cheap.

Exotics

This category represents a fairly new phenomenon and includes compounds which are referred to as "Toad licking" and "Space Base"

TOWARDS A FIRM POLICY ON DRUG ABUSE

Any meaningful and comprehensive policy dealing with drug abuse should focus on both use reduction and harm reduction.

For harm reduction, policy and any interventions are geared towards mitigating the harmful consequences of substance use, rather than the actual elimination of such use altogether.

In reducing harm to drug users, the policy generally should aim at treatment instead of enforcement over treatment. Treatment programs should aim at helping users break the cycle of addiction. In contrast, enforcement reduces the availability of substances to the abuser and also imposes sanctions to users.

For use reduction, policy and interventions should aim at:

a) Reducing the number of substance users focusing on light users. Preventive program should be instituted for these.

b) Reducing the quantity of substances consumed by treating heavy users and increasing enforcement.

c) Reducing money spent by users.

Both use reduction and harm reduction approaches to policy on substance use and abuse should be:

a) Objectively defensible - harm reduction has intrinsic appeal since it is seen as having positive value on societal welfare.

b) Integrative

c) Politically feasible

d) Inspirational - i.e. can result in public motivation

e) Seen as encompassing multifaceted interventions since the relation between drug use and harmful outcomes is also a complex phenomenon

Other policy approaches may involve community self help programs or NGOs. Community based approach to drug abuse is quite feasible and has social and political appeal in this country since the country has a strong community spirit. It is thus possible to sell drug abuse problem as a community or national problem as opposed to a distinctly personal problem.

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