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ABSTRACT

Students are often fascinated by the described experiences of others involving the use of many drugs and chemical substances. This abstract of factual information about drugs and their effects assembled by the Office of Orientation, Student Affairs Counseling Office, University of Michigan should make it possible to be informed on the subject and to discuss it without appealing to the common misconceptions, incorrect information, and emotionalism that usually pervade discussions of this topic. Also included in this booklet are information and facts about laws pertaining to the use of drugs, and a section entitled "Where to Go for Help". A glossary of slang terms may be found at the end of the booklet. (Author)

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INFORMATION ABOUT DRUGS

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INTRODUCTION

Thousands of drugs and chemicals are capable of altering an individual's perceptions and behavior. Often, students are fascinated by the described experiences and second-hand recountings of others involving the use of many of these drugs. This abstract of factual information about drugs and their effects should make it possible to be informed on the subject and to discuss it without appealing to the common misconceptions, incorrect information, and emotional attitudes that usually pervade discussions of this interesting topic.

Also included in this booklet are information and facts about laws pertaining to the use of drugs, and a section entitled "Where to Go for Help." A glossary of slang terms may be found at the end of the booklet.

BACKGROUND INFORMATION

Variables Influencing Drug Effects

Generalizations about the effects of any drug on human beings are not easy to make. Many different variables increase the complexity and difficulty that is encountered in attempting to make generalized statements.

A few of these variables can be described as follows:

1. Any drug, whether aspirin or opium, has a "no effect" dose and a lethal dose with a multitude of effects in between for any individual.
2. A single dose may have different effects than those produced by chronic repetitive administration of a drug.
3. Very few people are similar to the "average" person. People vary a great deal physically as well as psychologically.
4. Society is not the same for all Americans but is composed of many hundreds of subcultures with differences in ethical, religious, and social characteristics. These subcultures or reference groups influence the behavior of any individual to the degree he accepts their values and attitudes as being "correct" for him. These values and attitudes tend to become his standard for making decisions about correct behavior.

Dependence

Several terms, such as drug addiction or drug habituation, have been used to describe the extreme results of repeated use of many drugs. To eliminate the confusion and overlap between these terms, the World Health

Organization suggests the more general term "drug dependence." Drug dependence may result from repeated administration of any drug on a periodic or continual basis. This dependence may be psychological, physical, or both psychological and physical depending on the drug.

Individuals may become dependent upon a wide variety of chemical substances that produce central nervous system effects ranging from stimulation to depression. All of these drugs have one effect in common, that is, creating a particular state of mind that is termed "psychological dependence." In this situation, the individual learns to interpret his reactions to the drug as pleasurable and satisfying. Thus the individual requires periodic or continuous use of the drug to regain or maintain this feeling of pleasure and satisfaction. To some, the drug offers a means of escape from physical and emotional stress. These drug-induced mental states are the most powerful of all the factors involved in the chronic use of many drugs. Even in cases of intense craving and compulsive use, psychological dependence may be the only factor involved with certain types of drugs.

Some drugs also induce physical dependence. This is a state of adjustment by the individual's body to the drug. This change becomes apparent when repetitive administrations of the drug are suspended and the individual manifests a series of physical disturbances. The disturbances (withdrawal or abstinence syndrome) are composed of specific patterns of psychological and physical symptoms that are characteristic of each drug type. The withdrawal syndrome is relieved by re-administering the same drug or another drug of similar pharmacological action. A casual observer can not usually determine if an individual is physically dependent as long as adequate doses are maintained. Physical dependence is a powerful factor in continuing the use of a drug and reinforces the influence of psychological dependence.

Psychological dependence can and does develop without any evidence of physical dependence. This means that withdrawal of the drug can take place without physical symptoms developing. Also, physical dependence can be induced without notable psychological dependence. Indeed, physical dependence is an inevitable result of the pharmacological action of some drugs taken in sufficient amounts and with short time periods between administrations (e.g., morphine for pain of widespread cancer).

Many of the drugs that induce dependence, especially those that create physical dependence, also induce tolerance. Tolerance is a state of physical adjustment characterized by diminished responses to the same amount of drug or by the requirement of a larger dose to reproduce the same degree of either physical or psychological effects.

Abuse

An individual abuses the use of any drug when he becomes either psychologically or physically dependent on the drug resulting in harm either to himself or to society.

A look at the abuses of psychoactive drugs in the United States reveals the following picture: from any point of view, alcohol constitutes the major

drug problem today. Approximately 4 per cent of the estimated 125–150 million users of alcohol abuse the drug to become individual or social problems. These five or six million alcoholics constitute about 3 per cent of the total population.

Also there are an unknown number of emotionally disturbed people who become dependent upon a wide variety of other drugs such as heroin, barbiturates, pep pills, marijuana, etc. Assuming that the abuse of these psychoactive drugs involves 2 per cent of the population, the total number of people dependent on drugs as a means of solving personality difficulties or just reliving an intensely pleasurable experience may be as high as four million people. Thus when considering both alcohol and these other drugs, nine or ten million people may be dependent on either one or several drugs. This is about 5 per cent of the total population.

Most harm to the individual arises from preoccupation with drug-taking. Personal neglect (i.e., lethargy, malnutrition, and infection) is frequently a consequence. Some drugs, such as the barbiturates, result in impairment of mental functioning, with confusion, poor judgment, loss of emotional control, and occasionally coma and death. Sometimes drugs produce feelings of increased capability which do not stand up to reality testing.

Harm to society is chiefly related to the preoccupation of the individual in obtaining and taking the drugs. He may become an unproductive member of society. His interpersonal relationships can be disrupted and he may attempt to withdraw from the world around him. Often there is economic loss due to the individual's inabilities to maintain a job. Further there can result a proneness to accidents.

The Joint American Medical Association and American Bar Association Narcotic Committee deplores the hysteria which sometimes dominates the approach of persons in positions of public trust to problems of drug abuse. In terms of numbers affected, and in negative effects on others in the community, drug abuse is a problem of far less magnitude than alcoholism. Crimes of violence are rarely, and sexual crimes are almost never, committed by users of certain drugs. In most instances, the abuser's sins are a result of being an ineffective person whose great desire is to withdraw from the world and its everyday frustrations. Of course, where large sums of money are needed to support a habit, the drug-dependent person may turn to illegal activities to obtain money or drugs.

If it were practical by legal or other means to limit the individual intake of any drug so that physical or psychological dependence did not occur, no drug would be abused. This is difficult, if not impossible, to do, even for one individual. There exists a range of reactions to any drug, from no effect at all to the development of psychological and/or physical dependence. It is a rare possibility that an individual will be psychologically dependent on the first administration of a drug. Many individuals will not be adversely affected by their initial drug experience but may become dependent on the drug on subsequent administrations. Anyone who is actively seeking to experiment with a drug is going to find it and try it. He should be aware of the difficulty in predicting his reaction to the drug and that there exists no way for him

to determine if he is becoming psychologically dependent on it until he is in fact dependent.

DRUG GROUPS SUBJECT TO ABUSE

I. Narcotics (Narcotic Analgesics)

Narcotics are drugs which cause depression of the central nervous system. They generally produce sleep and relief of pain, but in excessive doses may produce stupor, coma, or even death. Included in this group of drugs are opium and its derivatives (e.g., morphine, heroin, codeine, paregoric, dilaudid, metopon, patopon, and laudanum) and synthetic morphine substitutes (e.g., meperidine and methadone). Because they can induce marked degrees of dependence, both psychological and physical, and thus have a high potential for abuse, the manufacture, distribution, and use of narcotic drugs is stringently regulated by Federal and state laws.

> *Note:* Although marijuana and cocaine have been classified as narcotics under narcotic laws, they will not be discussed in this section on narcotic drugs but will be examined separately in later sections.

1. Medical Uses

Narcotic drugs are very effective in relieving almost any type of pain. They are especially valuable in treating short-term, severe pain caused by trauma, burns, and certain diseases. These drugs are also used to relieve pain in patients suffering from long-term diseases such as cancer, although repeated use leads to tolerance which makes the drugs progressively less effective. They alter the psychological reaction associated with the perception of pain and induce lethargy or sleep. The physician who prescribes narcotic drugs for a patient for a long period of time must balance the beneficial, pain-killing effects of the drug against the possibility of establishing physical dependence.

Some narcotic drugs in small dosages are also used for the suppression of cough (codeine) and for the control of diarrhea (paregoric).

2. Psychological and Physiological Effects

The appeal of narcotic drugs to the user lies in their ability to reduce sensitivity to both psychological and physical stimuli. The user feels better because he does not experience physical pain or psychological pain such as fear, tension, anxiety, or guilt feelings. While under the influence of narcotic drugs, the user may experience a sense of exhilaration or well-being. The rapid intravenous injection of narcotics, especially heroin, produces an intensely pleasurable sensation localized primarily in the abdomen (pseudo orgasm). The sensation is short-lived, but experienced users seek to repeat it as often as possible. The frequency is limited only by the supply of drugs and by the accumulation of its depressant effects.

Continued use of narcotic drugs leads to tolerance, the need for ever-increasing doses to produce the desired effect, and to psychological and physical dependence. In the early stages of drug administration, the addict's breathing and body temperature are decreased. His eyes become reddened, his pupils pinpointed, and his eyelids droop. He may suddenly become very active physically and then become drowsy and inactive and may drift back to sleep, suddenly awaken, and then drift back to sleep and to dreaming. His aggressive impulses and sexual interests are usually decreased by the drug.

As the user becomes more dependent, his pupils remain constricted and he becomes constipated. Although he becomes tolerant to the drug's effects, he can always take a dose large enough to produce respiratory depression, coma, and death.

3. Withdrawal

With morphine, the abstinence syndrome appears within a few hours of the last dose, reaches peak intensity in 24 to 48 hours, and subsides spontaneously. The most severe symptoms usually disappear within a few days. The time of onset, peak intensity, and duration of abstinence phenomena vary with the degree of dependence on the drug and with the characteristics of the specific agent involved. Administration of a specific antagonist, such as nalorphine or levallorphan, during continuing administration of morphine-like drugs promptly precipitates the immediate onset of an intense abstinence syndrome.

The unique feature of the morphine abstinence syndrome is that it represents changes in all major areas of nervous activity, including alteration in behavior and excitation of both divisions of the autonomic nervous system. Symptoms and signs include anxiety, restlessness, generalized body aches, insomnia, yawning, lacrimation (tearing), rhinorrhea (runny nose), perspiration, mydriasis (dilated pupils), piloerection (goose flesh), hot flushes, nausea, vomiting, diarrhea, elevation of body temperature or respiratory rate, and of systolic blood pressure, abdominal and other muscle cramps, dehydration, anorexia, and loss of body weight (Isbell and White, 1953). Withdrawal from narcotics is seldom life-threatening unless the person has other diseases which are aggravated by the stress of withdrawal, e.g., heart trouble. It is now possible for the physician skilled in the use of drugs to minimize the discomfort associated with withdrawal from narcotic drugs.

Special Note About Heroin

Heroin is a semi-synthetic substance made from morphine found in the opium poppy. It is no more effective from the medical point of view than any other analgesic; therefore it is not used for medical purposes, not legitimately manufactured, and not legitimately available in this country. Heroin is illegally imported raw, then diluted by the wholesaler, usually by adding milk sugar and quinine. It may be diluted again by the dealer, so the final strength, composition, and purity of "street heroin" is unknown.

Its properties are the same as for the entire group of drugs discussed in this section. Heroin has always been used by the despairing, oppressed, and miserable, many of whom live in urban ghettos, not so much to obtain a "high" as to numb their abject misery. More recently, the use of heroin has spread to all parts of society as a part of the general increase in the use of illicit drugs. There now is an increasing demand and enlarging potential market for the drug. A proportion of those who try heroin will try again, and will become dependent—thus establishing an even greater demand for a highly profitable drug.

Unlike some drugs, heroin is a big business of organized crime; profits are enormous, with $35 worth of crude opium eventually being marketed for $40,000 on the street in a many-times-diluted form.

II. Barbiturates

Like the narcotic analgesics, barbiturates are drugs which exert a calming or depressing action upon the central nervous system. All of the barbiturates are synthetics derived from barbituric acid and are available in solution, capsule, or tablet form. Legally, they can be obtained only with a doctor's prescription.

There are three general classifications of barbiturate drugs: the long-acting, slow-starters such as phenobarbital; the intermediates such as amobarbital (amytal) and butabarbital (butisol); and the short-acting fast starters such as secobarbital (seconal) and pentobarbital (nembutal).

1. Medical Uses

Because of their depressant action on the central nervous system, barbiturates have numerous medical uses. The most important of these is to produce sleep. Due to the large number of barbiturate drugs available, the physician can choose from short-acting, intermediate-acting, and long-acting barbiturates, depending on the patient's symptoms.

Barbiturates, in small doses, are also used frequently for their sedative or calming effect. This effect is particularly valuable in treating nervous tension and high blood pressure.

Certain barbiturates are used to prevent or minimize convulsive episodes in epileptic patients. They are also used in combination with other drugs (e.g., to increase the soporific effects of pain-killing drugs, to decrease the stimulant effects of amphetamines).

When properly prescribed and taken as directed, barbiturates have no lasting adverse effect upon the patient.

2. Psychological and Physiological Effects

If barbiturates are carelessly used, they may lead to psychological and physical dependence. A large, single overdose may lead to death because barbiturates are capable of depressing the brain's respiratory center to the point where breathing ceases. Because persons under the influence of bar-

biturates are befuddled, lose their sense of time, and are incapable of logical thought, accidental overdoses are common. Unlike alcohol, which has a sort of built-in safety mechanism that requires a person to remain sober enough to continue to drink, barbiturates may be taken in large doses all at once. That is, many capsules may be swallowed before the full effect is experienced. This is a result of the slow absorption of the drug from stomach and intestine and is often the underlying cause of many inaccurately labeled suicides.

Use of barbiturate drugs in excessive amounts produces confusion, slurring of speech, staggering and falling due to interference with balance mechanisms, difficulty in thinking, defective judgment, quick temper, and a quarrelsome disposition. The superficial signs of excessive barbiturate use are quite similar to the classic stages of alcohol intoxication: first relaxation and increased sociability, then gloominess and irritability, followed by staggering, incoherence, and a lapse into deep sleep and then coma and marked respiratory depression.

One would expect that the mechanism of physical dependence involving barbiturates would be set in motion by the first dose, but there is no evidence that this is the case. There is, indeed, no evidence that physical dependence develops to a detectable degree with continuation of the therapeutic doses for the production of sedation or hypnosis. The daily dose must be increased appreciably above the usual therapeutic level and intoxication must be maintained continuously before abstinence signs will appear on abrupt withdrawal. Some degree of psychological dependence facilitating continued administration may occur with therapeutic doses, but low doses of the depressants can usually be discontinued without serious psychological disturbance. Factors that may lead to increasing consumption and eventual overt physical dependence include, in addition to tolerance, gaining a pleasurable feeling, incomplete relief of emotional problems and tension, and impairment of judgment, so that larger doses are taken without regard to need. The degree of tolerance that can develop to depressants is much less than that seen with narcotic analgesics (e.g., heroin). Thus, it is relatively easy for the person to take a lethal overdose of the depressants.

3. Withdrawal

The abstinence syndrome is the most characteristic and distinguishing feature of drug dependence on barbiturates. It begins to appear within the first 24 hours after the last dose, reaches peak intensity in two or three days, and subsides slowly. At present there is no agent which is known to precipitate the barbiturate abstinence syndrome during continuation of drug administration. The complex of symptoms constituting the abstinence syndrome, in approximate order of appearance, includes: anxiety, involuntary twitching of muscles, tremor of hands and fingers, progressive weakness, dizziness, distortion in visual perception, nausea, vomiting, insomnia, with weight loss due to dehydration, a precipitous drop in blood pressure on standing, convulsions, and delirium. Generally, a patient may have one or

two convulsions during the first 48 hours of withdrawal, and then may become psychotic during the succeeding 24–48 hours. With respect to the psychotic episodes—paranoid reactions, reactions resembling schizophrenia with delusions and hallucinations, withdrawn semi-stuporous state, and disorganized panic have been seen.

Unlike the situation with narcotics, withdrawal of depressant drugs from a person physically dependent on them is always a serious, life-threatening ordeal. It requires a skillful, experienced physician to minimize the risks of convulsions and death.

III. Other Sedatives

There are numerous drugs of a chemical structure different from that of the barbiturates but able to produce very similar effects to those of the barbiturates (e.g., librium, equanil or miltown, chloral hydrate). Also the similarity extends to the medical uses, psychological and physiological effects, and withdrawal symptoms of barbiturates.

A distinction should be made between the above noted barbiturate-like sedatives and the specific group of drugs referred to as tranquilizers (e.g., thorazine, compazine, reserpine). Although tranquilizers produce calmness, sedation, etc., as do the barbiturates, they also produce numerous undesirable side effects, especially as the dosage is increased. These side effects are almost never interpreted by the user as pleasurable so that psychological dependence seldom results. It is generally agreed that the tranquilizers do not cause physical dependence and have little potential for abuse.

IV. Stimulants

Drugs in this group stimulate the central nervous system causing wakefulness, excitation, alertness, some increased physical activity, a temporary rise in blood pressure and respiration and, in moderate doses, euphoria. The amphetamines, benzedrine and dexedrine for example, are the best-known and most widely used of the stimulant drugs. However, phenmetrazine, benzphetamine, diethylpropion, mephentermine, pipradrol, ephedrine, and methylphenidate are also included in this group as is the strong stimulant, cocaine.

1. Medical Uses

The only legitimate medical use of cocaine is to produce local anesthesia, and even for this purpose there are many synthetic drugs which are equally as effective and which do not possess the dependence-inducing potential of cocaine. Amphetamines and other stimulant drugs have few legitimate medical uses although they are widely used and misused in current medical practice. Because they often improve mood disturbances, these drugs have been used for many years by physicians in treating mild forms of mental depression. They are used effectively in treating certain relatively rare diseases of the nervous system such as narcolepsy, a disease characterized by

an almost overwhelming compulsion for sleep. These drugs are used to counteract the excessive depressant effects of large doses of antiepileptic and other types of depressant drugs. Although it appears to be paradoxical, the amphetamines, which are stimulants, have been used effectively in calming the exaggerated behavior of hyperkinetic children.

Physicians frequently prescribe stimulant drugs, especially the amphetamines, for patients who are overweight. These drugs appear to facilitate dieting by exerting an effect on the appetite center in the brain, and also, by improving the patient's mood, lessen his psychological dependence on food. However, even with continued daily administration, the appetite-suppressing effects disappear within a few weeks. Some physicians and patients have been unaware of this tolerance to the anorexic effects of amphetamines and have continued to use the drug for prolonged periods. Not infrequently, marked psychological dependence on these drugs has been a consequence of such medical misuse.

2. Psychological and Physiological Effects

Because of their very nature, stimulant drugs tend to produce a feeling of alertness in tired people and an elevation of mood in depressed people. Unfortunately, this ability to make tired people feel alert and depressed people feel "alive" seems to have a special appeal to some people and is the major factor underlying the abuse of these drugs.

Dependence on stimulant drugs can occur without the awareness of the user. Someone might use one of the drugs to increase his capacity for work. As he develops a dependence on and tolerance to the drug, he may increase the dosage. The individual who is using one of these drugs under a physician's supervision may pay no attention to his doctor's direction and use larger amounts than prescribed. He, too, is likely to develop a psychological dependence on the drug.

Still other cases of stimulant drug abuse arise among college students looking for "pleasurable experiences" or those who use the drugs for increased performance for athletic events, to stay awake while studying for exams or the like. Here again, continued use results in dependence on the drug for a "normal" feeling and a need to use increasing amounts to produce the desired effect.

Amphetamines and other stimulant drugs may increase alertness and efficiency for a short time, but this effect is often followed by headache, dizziness, agitation, irritability, decreased ability to concentrate, and marked fatigue. The most important fact in considering the use of stimulant drugs is that excessive, unsupervised use interferes with the body's normal protective symptoms of drowsiness and fatigue. The feeling of exhaustion is short-circuited, causing a person to use up reserves of body energy until a sudden and total collapse may occur.

The stimulant drug user, taking large doses, is usually active and excited and the pupils of his eyes are dilated. He may have bad breath and have gone for long periods of time without sleep and with little food. Daily use

in excessive amounts can cause tremor, insomnia, mental confusion, assaultiveness, panic, and convulsions. Hallucinations, both visual and auditory, and other signs and symptoms of psychoses can occur. Especially frequent are the appearance of paranoid delusions and panic states. These symptoms usually disappear upon dosage reduction or upon withdrawal of the drug.

Like the narcotic "mainliner," the stimulant abuser derives a unique, intensely pleasurable sensation (pseudo-orgasm) from rapid injection of the drug intravenously. It is with repeated intravenous use of large doses that the more serious side effects (hallucinations, phychoses, convulsions) are most frequently experienced. Indeed, the intravenous route is employed by some for the express purpose of obtaining bizarre mental effects, often associated with sexual functions, even to the point of orgasm.

More generally, the symptoms of stimulant drug abuse are milder than those mentioned above. They include excitability, talkativeness, restlessness irritability, tremor of hands, enlarged pupils, sleeplessness, and profuse perspiration.

A unique feature of the amphetamines is their capacity to induce tolerance, a quality possessed by few central nervous system stimulants. (Repeated use of cocaine does not produce tolerance to its effects.) Although tolerance develops slowly, a progressive increase in dosage permits the eventual ingestion of amounts that are several hundred fold greater than the original therapeutic dose. Apparently, all parts of the central nervous system do not become tolerant at the same rate, so that the user will continue to experience increased nervousness and insomnia as the dose is increased. Although an individual may survive the oral administration of very large quantities, such ingestion may produce profound behavioral changes that are often psychological in nature, such as hallucinations, delusions, etc. As noted above, the latter effects are much more likely to occur after intravenous injections than after ingestion.

3. Withdrawal

Although the amphetamines do not induce physical dependence, as measured by the criterion of a characteristic and reproducible abstinence syndrome, the withdrawal of the stimulant drug leaves the individual in a state of chronic fatigue and the need for sleep. Thus, the withdrawal period is characteristically a state of depression, both psychological and physical, which probably reinforces the drive to resume the drug. Although stimulant withdrawal does not compare in the magnitude of its physical effects with that seen during withdrawal from morphine, barbiturates, alcohol, and other drugs that create physical dependence, withdrawal of drugs of the amphetamine type can nevertheless be serious. The withdrawal of stimulants may lead to profound psychological depression even to the point of suicidal intent. Obviously such persons require proper psychological therapy.

V. Hallucinogens

Hallucinogens are drugs which have the ability to produce hallucinations. They may also be known by other names such as psychedelics (mind-manifes-

ters) and consciousness expanders. Included in this group of drugs are lysergic acid diethylamide (LSD-25) mescaline, peyote, psilocybin, and various forms of the *cannabis* plant, discussed in section VI. In large doses, the hallucinogens produce a temporary psychological state which is similar in many respects to schizophrenia or psychoses—a separation from reality. Hence, these drugs are also called psychotomimetics.

1. Medical Uses

Some of these drugs (e.g., LSD) may be useful in treating certain types of mental disorders and in treating alcoholism, but there is not yet enough evidence to substantiate this. Legally, the hallucinogens are available only for bona fide experimental purposes and not for routine medical practice or for personal use.

2. Psychological and Physiological Effects

The drugs are taken for thrills, to partake in an intensely pleasurable feeling, to change and clarify perception, and to obtain "psychological insight" into the personality problems of the user. Generally, the drugs are taken orally and in the company of other users. Ingestion of a single dose or of several doses over a period of two or three days is the customary pattern; prolonged or continuous use is unusual. Periodic, rather than continuous, use is favoured by difficulty in obtaining the drugs, rapid development and disappearance of tolerance, and a lack of physical dependence on the drugs.

Drugs of the LSD type induce a state of excitation of the central nervous system and central autonomic hyperactivity manifested by changes in mood (usually euphoric, sometimes depressive), anxiety, distortion in sensory perception (chiefly visual), visual hallucinations, delusions, depersonalization, dilation of the pupils, and increases in body temperature and blood pressure. There may be nausea, chills, as well as flushes, irregular breathing, sweating of the hands, and trembling of the extremities. Sleep is virtually impossible until the drug-experience is over. The major physical dangers related to the hallucinogenic experience are physical and emotional trauma resulting from impulsive acts (e.g., leaping from a window) and from panic reactions.

A high degree of tolerance to LSD (Isbell, et al., 1956) and to psilocybin (Wolbach, Isbell, and Miner, 1962, develops rapidly and disappears rapidly. Tolerance to mescaline develops more slowly. People who are tolerant to any of these three drugs are cross tolerant to the other two (Wolbach, Isbell, and Miner, 1962).

There is increasing concern about the mental and physical side effects of the hallucinogens, especially with regard to their long-term effects. Mental side effects include the acute panic reaction during the drug experience, a prolonged continuing psychotic state, and the periodic recurrences ("flashbacks") of the drug experience without taking the drug. It is still not certain that these drugs induce brain damage, although a number of users and

physicians report apparently permanent changes in the behavior of persons who have used one or more of these drugs repeatedly. The occurrence of mental side effects is unpredictable; they have been observed with the first dose as well as with the next dose following many previous pleasurable drug experiences. Serious mental side effects are most frequently encountered by emotionally disturbed persons.

Much less is known about the long-term physical effects of the hallucinogens. To date there is no concrete evidence that use of these drugs leads to the production of defective offspring in humans. But concern is raised by observations of the occurrence of abnormal chromosomes in the blood cells of humans taking LSD (or a variety of other drugs) and by studies in animals of the incidence of fetal resorption and birth defects following the administration of LSD. As is often true in the early phases of experimentation, the relevance of studies of animals to the human situation remains to be evaluated. However, society is generally advised to take a cautious or conservative approach in such situations, especially when the benefits of drug usage remain uncertain.

3. Withdrawal

No evidence of physical dependence can be detected when the drugs are withdrawn abruptly.

VI. Marijuana

Marijuana comes from the dried flowering tops of the hemp plant *cannabis sativa*. This plant grows as a weed throughout most of the world and can be grown in all parts of the United States. The most potent plants are grown in a hot, moist climate such as found in India. The most potent forms of *cannabis* contain the greatest quantities of tetrahydrocannabinol, one of the pharmacologically active substances in the *cannabis* plant. Although marijuana is classified as a narcotic under federal laws, it is different from the narcotic drugs in that it does not create physical dependence and it is not a potent analgesic.

1. Medical Uses

The drug is not used currently in medical practice, and the growth, distribution, or sale of it in the United States is illegal.

2. Psychological and Physiological Effects

Among the more prominent of marijuana-induced psychological effects for which it is taken occasionally, periodically, or chronically, are: hilarity, often without apparent motivation; carelessness; feelings of happiness and satisfaction with increased sociability as a result; distortion of sensation and perception, especially of space and time. The intensity of the effects produced by marijuana are dependent on the dosage taken, and large doses can cause

impairment of judgment and memory; distortion of emotional responsiveness; irritability; and confusion. Other effects which appear especially after repeated administration and as more experience is acquired by the user include: lowering of the sensory threshold, especially for optical and acoustical stimuli, thereby resulting in an intensified appreciation of works of art, paintings, and music; hallucinations, illusions, and delusions often of a paranoid type which may pre-dispose to aggressive and antisocial behavior; anxiety as a result of the various intellectual and sensory derangements; and sleep disturbances.

Whereas marijuana often attracts the mentally unstable and may precipitate temporary phychoses and lead to changes in behavior patterns in predisposed individuals, no unequivocal evidence is available that lasting mental changes are produced.

In the psychomotor sphere, increased motor activity occurs without obvious impairment of coordination. The effects of marijuana intoxication on driving skills remains to be determined, but distortions of time and space sense suggest that it may be unsafe to operate complex machinery under the influence of marijuana. Among somatic effects are injection of conjunctival vessels (red eyes), oropharyngitis (sore throat), and bronchitis. These conditions are symptoms of intoxication and exposure to irritants in marijuana smoke. Not infrequently, there is an increase in appetite and sleepiness following the use of marijuana. No long-term physical effects have been demonstrated to result from use of the drug.

3. Withdrawal

Typically, the abuse of marijuana is periodic, but, even during long and continuous administration, no evidence of the development of physical dependence can be detected. That is, no characteristic abstinence syndrome appears when use of the drug is discontinued.

Whether administration of the drug is periodic or continuous, tolerance to its psychological and psychomotor effects has not been demonstrated in humans.

Frequently repeated use of the drug in this country and in others (e.g., Africa, India), has demonstrated that psychological dependence can occur to marijuana as well as to the stronger forms of the *cannabis* plant.

VII. Alcohol

Abuse of alcohol may be said to occur when the consumption of alcohol by an individual exceeds the limits that are accepted by his culture, when he consumes alcohol at times that are deemed inappropriate within that culture, or when his intake of alcohol becomes so great as to injure his health or impair his social relationships. Since the use of alcoholic beverages is a normal, or almost normal, part of the cultures of many countries, dependence on alcohol is usually apparent as an exaggeration of culturally accepted drinking patterns, and the manifestations of dependence vary according to the cultural mode of alcohol use. Thus, in the USA, alcohol is frequently

taken in concentrated forms for brief periods as an aid to social intercourse. Dependence on alcohol in the USA is usually characterized by heavy consumption of strong spirits, by a tendency to drink regularly or continuously throughout the day, and by overt drunkenness. In some countries, on the other hand, alcohol is customarily consumed as wine, usually with meals. In these countries, dependence on alcohol is characterized by the drinking of wine throughout the day often with relatively little overt drunkenness. A similar pattern applies where beer is the common beverage.

1. Medical Uses

Alcohol is used as an antiseptic and is sometimes prescribed as a sedative or appetite stimulant. If nothing else is available, alcohol may be used as an analgesic.

2. Psychological and Physiological Effects

Psychological dependence on alcohol occurs in all degrees. In the mildest grade, alcohol is missed or desired if not available at meals or at social functions. A moderate degree of psychic dependence exists when the individual feels compelled to drink in order to work or to participate socially and takes steps to ensure a supply of alcohol for these purposes. Strong dependence is present if the individual uses alcohol in amounts far exceeding the cultural norm, drinks in situations that culturally do not call for drinking, or is obsessed with maintaining a supply of alcohol even to the extent of drinking unusual or poisonous mixtures.

As with other drugs, psychic dependence on alcohol results from an interplay between the pharmacodynamic effects of the drug and the personality problems of the user. The consciously verbalized reasons for the use of alcohol cover a wide gamut and may include a need to stimulate the appetite, to alleviate anxiety or fatigue, to remove boredom, or to induce sleep. For some people, alcohol provides a temporary escape from a hostile, threatening world, or it releases them from their mental and moral inhibitions and allows them to express their aggressive impulses toward that world.

Tolerance to alcohol does develop. During continuous drinking there is slight but definite increase in the amount of ingested alcohol required to maintain a given blood level. In addition, physiological and psychological adaptation occurs so that the alcoholic appears less intoxicated and is less impaired in performance tests at a given alcohol concentration in the blood than is a nonalcoholic. But, as is true for other depressant drugs, the person tolerant to alcohol can still ingest a lethal dose.

There is no question that long-term, continuous use of alcohol is associated with detrimental physical and mental changes, some of which are permanent. Some of the changes may be related to the poor nutritional and health practices followed by the alcoholic. The detrimental effects include low resistance to infectious disease, cirrhosis of the liver, and a variety of neurological and mental syndromes. There is a very definite association of alcohol

intoxication with serious detrimental effects on society, such as accidental injury and death, property damage, absence from work and school, and disruption of family life.

3. Withdrawal

Physical dependence on alcohol definitely occurs and the abstinence syndrome resulting when the intake of alcohol is reduced below a critical level is manifested by tremors, sweating, nausea, tachycardia, rise in temperature, hyper-reflexia, postural hypotension, and, in severe grades, convulsions and delirium. The last mentioned condition is characterized by confusion, disorientation, delusions, and vivid visual hallucinations. The symptoms of alcohol withdrawal are very similar to those seen after barbiturate withdrawal. The intensity of alcohol abstinence syndrome probably varies with the duration and amount of alcohol intake, but as yet little quantitative information on this point is available. The mortality rate, when the alcohol abstinence syndrome is severe, averages at least 8 per cent.

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LEGAL ASPECTS OF DRUG USE*

The purpose of this section is to make clear the legal implications of conviction for violation of drug laws in the State of Michigan. The law is actively enforced in the City of Ann Arbor by the local police and in Washtenaw County by the Sheriff. Both agencies have vice squads.

There is a significant difference between conviction for being a minor in possession of alcohol (misdemeanor) and possession of marijuana (felony). A felony conviction, in addition to the legal penalties, may prevent one from entering certain professions such as law or medicine, or from obtaining responsible government positions.

Felony and *misdemeanor* are legal terms which classify many types of law violations. We are concerned here with how they apply to the use, possession, or sale of narcotics (which legally includes marijuana)), barbiturates, amphetamines, and hallucinogens such as LSD.

The Ann Arbor Police Department advises that you may call them if you have questions concerning penalties or enforcement, or just general questions concerning drugs. Telephone 761-2400, and your questions will be answered over the telephone without requirement for identification of the caller.

Drug Statutes

The legal regulations regarding drug traffic and use in this state are found in three Michigan statutes. It should be emphasized, however, that the State Legislature has the power to define crimes and penalties for them, so existing regulations and penalties may be extended or changed at any time. Also, the specific penalties for violations which are classified in the statutes as felonies or as misdemeanors cannot be determined without examining the case—penalties differ widely depending upon the nature of each violation. In most cases, however, there are penalty provisions with minimum and maximum fines and terms of imprisonment.

It is important to note that you can be charged under *both* state and federal laws; while it is not necessarily so, it it possible that you may be charged under the statute which carries the heaviest penalty.

Conviction on a drug charge also includes forfeiture of any vehicle used in conjunction with the illegal act.

A final point of clarification is that in Michigan, all parts of the *cannabis sativa* plant (marijuana) are legally classified as narcotics. This is in contrast to the pharmaceutical classification.

The following is a descriptive summary of the three Michigan statutes concerning drugs:

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* Information for this section was prepared by the Student Affairs Counseling Office in conjunction with the Washtenaw County Prosecutor's Office and the University Attorney's Office.

Uniform Narcotic Drug Act, Act 343 of 1937
Michigan Statutes Annotated, 18.1071–18.1098
Compiled Laws 1948, 335.51·ff.

This law applies mainly to practitioners and those dealing on a business basis with practitioners. It declares false representation of oneself in an attempt to obtain narcotic drugs constitutes a felony. Imprisonment can range up to 10 years and/or fines can range up to $10,000.

Dangerous Drug Act, Act 204 of 1948
Michigan Statutes Annotated, 10.1101·ff.
Compiled Laws, 335.101·ff.

This law regulates sale and possession of "non-narcotic" drugs, including hallucinogenics.

A distinction is made between two types of drugs covered by this statute. Barbituric acid and its derivatives, chloral hydrate, paraldehyde, or amphetamine and methamphetamine and their derivatives make up the first type; a violation which involves these drugs constitutes a misdemeanor and carries with it a penalty of up to one year imprisonment and/or up to $500 in fines. The hallucinogenics—LSD, peyote, mescaline, dimethyltryptamine, psilocyn, and psilocybin or derivatives of these—make up the second type of drugs. A violation involving these drugs constitutes a felony.

Illegitimate use of Narcotic Drugs, Act 296 of 1952
Michigan Statutes Annotated, 18.1121·ff.
Compiled Laws, 335.151·ff.

One portion of this law regulates the sale, possession, dispensing and procurement by unlicensed persons of drugs legally defined as narcotics. Violation of the provisions of the statute regarding these drugs constitutes a felony. For unlawful possession the penalties range up to 10 years imprisonment and up to $5,000 in fines for the first offense. Any vehicle or other property used in connection with such possession is subject to seizure. Unlawful sale or dispensing carries imprisonment penalties of 20 years to life. This is a "minimum mandatory sentence," meaning that there is no probation, suspension, parole, or reduced sentence for unlawful sale or dispensing of a narcotic in Michigan. Handing a narcotic to another person could be construed by the courts as "dispensing."

This law also deals with addiction and drug use which is not in accordance with a properly issued prescription. Violation of these provisions constitutes a misdemeanor and carries penalties of up to one year imprisonment and/or up to $2,000 in fines. In the case of addiction, compulsory treatment to cure addiction is part of the penalty.

Additional Note on Federal Law

As the revision of this booklet was being prepared (March, 1970), the Congress of the United States was debating several proposals to modify the federal laws which classify and control narcotics and dangerous drugs and which stipulate penalties for illicit possession, sale, and abuse of these drugs. Since it is most likely that at least some modifications will be made, the current laws are not described here. It should be noted, however, that modifications in the federal laws may eventually, but not necessarily, lead to changes in the various state laws.

WHERE TO GO FOR HELP

Resources are available to students desiring assistance or information relating to drugs and their use. These are described in *The Guide to Counseling and Student Services,* which is distributed to all new students. If you are not sure which of these agencies to contact, telephone 764-7415, or come to the Student Affairs Counseling Office, 1011 Student Activities Building. Staff members are available to help you decide which resource can best provide you with assistance. This office also has available booklets, pamphlets, and other literature on drugs.

Consultation on legal matters may be obtained through the Legal Aid Service of Student Government Council, Room 1546, Student Activities Building; telephone 763-3241. There is a $2.00 fee for a 15 minute consultation.

Emergency Services

University Health Service (24-hours)	764-8320
Emergency Room, University Hospital (24-hour)	764-5102
Emergency Room, St. Joseph Mercy Hospital (24-hour)	665-4141
Washtenaw County Community Mental Health Clinic	
Crisis Telephone Service (24-hour)	761-9834
Crisis Walk-in Clinic, 208 N. 4th Ave.	
(9 a.m.–10 p.m. Monday–Friday; 5 p.m.–10 p.m. Saturday)	

GLOSSARY OF DRUG SLANG

This glossary is incomplete and probably out of date. The use of slang or jargon is to enable the "in-group" to communicate without the "uninitiated" being able to understand what is meant. When a street term or slang word becomes clear to the uninitiated and falls into common usage, another term will take its place. For a more complete listing and a more extensive discussion of terms, see the book *Drugs from A to Z: A Dictionary,* by R. R. Lingeman, McGraw-Hill, 1969.

—A—

acid—chemical hallucinogen drug (e.g., LSD)

—B—

bad trip—undesirable physical and psychological reactions to drug use
beans—amphetamine pills, benzedrine
benny, bennies—amphetamine, benzedrine
blue cheer—hallucinogen drug (e.g., LSD)
bluebirds—amobarbital (Amytal), a barbiturate
boo—marijuana
boot—drawing blood out of, then putting it back into, a vein to get the last bit of drug from syringe
booze—alcoholic beverage
bummer—undesirable drug experience; a bad trip
busted—arrested

—C—

cap—capsule or dose of LSD
chipping—injection, but not intravenous
coke—cocaine
copping—obtaining drugs
crank—homemade methamphetamine
crashing—undesirable after-effects of stimulant drug (e.g., headache, dizziness, marked fatigue, decreased ability to concentrate); withdrawal symptoms; profound psychological depression
crystal—a type of methamphetamine

—D—

dex—dexedrine
downer—a barbiturate
drop—oral intake of drugs, usually a chemical hallucinogen

—F—

feno—phenobarbital
flash, flashback—recurrence of drug influence without having taken the drug
freak—one who uses drugs
freaked-out—undesirable drug experience; a bad trip

—G—

girl—cocaine
goofballs—amphetamine tablets
grass—marijuana

—H—

"H"—heroin
hard stuff—a narcotic analgesic (e.g., opium and derivatives)
hash—hashish; loosely, marijuana
head—one who uses drugs
high—under the influence of a drug; intoxicated
holding—having drugs in your possession
horse—heroin

—J—

"J"—marijuana cigarette; a joint
joint—marijuana
jones—heroin
junk—a narcotic analgesic (e.g., opium and derivatives)
junk works—homemade equipment for injecting drugs

—K—

key, kilo—kilogram, or 2.2 pounds, usually in reference to heroin or marijuana

—L—

lid—a little less than an ounce of marijuana
lucy—LSD

—M—

mainliner—one who uses intravenous injections
main-lining—intravenous injection, usually rapid
mary jane—marijuana
mesk—mescaline
munchies—increased appetite, as during marijuana intoxication

—N—

nark—narcotics agent; policeman

— O —

O.D.—overdose of drugs; death from overdose
oding—showing symptoms of an overdose of drugs
ope—opium

— P —

pacifier—homemade equipment for injecting drugs
phero—phenobarbital
pot—marijuana
pot-head—marijuana user
purple owsley—chemical hallucinogen (LSD)
purple-white dome—type of chemical hallucinogen

— R —

rainbows—mixture of amobarbital and secobarbital (tuinal), both are barbiturates
red devils, reds—secobarbital (Seconal), a barbiturate
reefer—marijuana cigarette
roach—butt of a marijuana cigarette
rushing—quick sensation, high or low

— S —

scag—heroin
scag boy—cocaine
shooting up—injecting drugs with a syringe
shotgun—equipment for injections
skinpopping—injection, but not intravenous
slider—barbiturate
smack—heroin
speed—a stimulant drug (e.g., amphetamine)
speedball—mixture of cocaine and heroin
spike—needle for syringe
spoon—about 1/16th of an ounce of heroin
spoonful—a narcotic analgesic (e.g., heroin)
stash—drugs on hand
stoned—intoxicated, as on alcohol, marijuana, or other drugs
strawberry flats—chemical hallucinogen (LSD)
street heroin—heroin cut with quinine and milk sugar, usually 3 to 11 per cent heroin content
stuff—marijuana
strung out—symptoms of stimulant drugs (e.g., excitability, talkativeness, irritability, enlarged pupils, sleeplessness)
sunshine—chemical hallucinogen (LSD)
supercharging—particular method of smoking marijuana

— T —

tea—marijuana
toke—puff of a marijuana cigarette
tracks—skin marks left by injections
trip—drug experience; under the influence of a drug; intoxicated

— U —

uppers—stimulant drugs (e.g., amphetamine)
ups—stimulant drugs (e.g., amphetamines)

— W —

weed—marijuana
white orange—type of chemical hallucinogen
white owsley—type of chemical hallucinogen
wired—daily use of stimulant drugs
works—equipment for injecting drugs

— Y —

yellow flats—type of chemical hallucinogen
yellow jackets—pentobarbital (Nembutal), a barbiturate
yellow wedges—type of chemical hallucinogen

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