

YE ARE NOT YOUR OWN

*Observations on the
Drug-Abuse Problem*

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THE APOSTLE PAUL in writing to the Corinthian Saints repeatedly expressed the importance of keeping their bodies clean and whole. He stated: "What? know ye not that your *body is the temple of the Holy Ghost* which is in you, which ye have of God, and ye *are not your own?*" (1 Cor. 6:19, emphasis added).

The Lord has always counseled man about what he should or should not take into his body. To Adam the Lord directed the proper use of crops of the field. (Gen. 1:29-30). The Lord also instructed Noah. (Gen. 9:3-4). Through Moses, the Lord gave detailed instructions to the children of Israel. (Deut. 14:2-3). And in New Testament times, Paul taught that a bishop be "not given to wine," and he also counseled Timothy. (1 Tim. 3:3; 4:1, 3).

In our time President Spencer W. Kimball has said: "We hope our people will eliminate from their lives all kinds of drugs so far as possible. Too many depend upon drugs as tranquilizers and sleep helps, which is not always necessary. Certainly numerous young people have been damaged or destroyed by the use of marijuana and other deadly drugs. We deplore such." (*Ensign*, Conference Report, Oct. 1974, 6).

President Ezra Taft Benson has said, "The condition of the physical body can affect the spirit." (*Ensign*, Conference Report, Oct. 1974, 91).

Yet with all of this counsel from the prophets, man has used and abused drugs for millennia. Throughout nearly all cultures there has been the desire (conscious or unconscious) to flee from monotony, frustration, and pain and to seek euphoria and a sense of well-being. This quest has been a catalyst in the search for strange substances.

But in our modern setting, the problem has become chronic.

According to the National Institute on Drug Abuse, between 1975 and 1985 the proportion of American high school seniors who tried marijuana within the last year increased from 40 to 66 percent. Among 18 to 25 year olds, the proportion of those who experimented with drugs such as cocaine, heroin, hallucinogens, or inhalants jumped from 9 to 33 percent.

Many substances have the potential to be abused, and therefore, there is no single drug problem. The myriad of abuses vary with the population group. For increasing numbers of older youth, the drug of choice is cocaine, whose use, according to a 1984 Health and Human Services survey of drug abuse, has tripled among 18 to 25 year olds.

The effects of drug abuse are now felt in nearly every community across the United States. Even many Latter-day Saint youth have been seduced by the false allure of these so-called recreational agents.

DEFINITION OF TERMS

Drug Abuse

Drug abuse may be defined as the repeated consumption of any substance, with or without medical authorization, that results in psychological and physiological disturbances. This results in a potential adverse effect on health and ability to fully function.

Addiction

The terms "addiction" (physical dependence) and "habituation" (psychologic dependence) were used in the past to describe some patterns of misuse, but recently it has been recommended that these "inadequate and ambiguous terms" be abandoned even by the expert committees that defined them.

As a result, it has been recommended that the term "drug dependence of the _____ type" be substituted. Drug dependence may refer to either physiological or psychological dependence (or both) and denotes a biological problem. This terminology, however, obscures the fact that a drug may cause dependence in different ways, so it is even less satisfactory than the original terms.

Therefore, it is becoming clear that the term "addiction" cannot be eliminated from abuse terminology. Yet it is still necessary to more clearly define the morbid use of substances.

Euphoria

Euphoria has been expressed as a state of extreme well-being with an absence of pain or distress. In psychiatry it is classified as an abnormal or exaggerated sense of well-being. Theoretically, this distorted state would allow an athlete to continue to perform while in pain or distress. In contact sports, the athlete could hit harder and more viciously and be able to absorb more punishment.

Tolerance

Tolerance is a resistance and/or accommodation that is developed to the effects of a chronically ingested drug. As a result of tolerance, over a prolonged period more of the drug is needed to get the same effect experienced with the first dose.

There are various types of tolerance, but generally this phenomenon can be divided into three categories: (1) dispositional tolerance, which involves metabolic and pharmacokinetic principles; (2) functional tolerance, which involves functions at the cellular level and pharmacodynamic principles; and (3) behavioral tolerance, which involves desire, craving, and secondary reinforcement.

Cross-tolerance

Cross-tolerance is a condition where various

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types of tolerance to one drug build up and are carried over to other drugs. Many drugs exhibit this property within their particular drug family. For example, a heroin-dependent patient that is maintained on methadone simultaneously develops tolerance to all of the opiates (including heroin).

Delusions

A delusion has been defined as a belief or a belief system which is not shared by others with the same background. For example, if a person hears voices that tell what to do, and no one else with the same background, belief, or experience hears voices telling him or her what to do, the voices are considered to be delusions.

Synesthesia

Synesthesia is an unpredictable perception of a real object in an altered form by one or more of the five senses. In other words, the person might see a wall or hear a sound, both of which really exist, but it would be perceived as altered, e.g., the flat wall is wavy, and the ugly sound beautiful.

Hallucination

A hallucination can be defined as an unpredictable perception of an unreal object by one or more of the five senses. A true hallucination can be a dangerous toxic-drug reaction. Almost all drugs that possess pharmacologic CNS action may cause delusions, synesthesias, or hallucinations.

PATTERNS OF DRUG ABUSE

In describing and evaluating the hazards of substance misuse, the professional must consider: (1) the variety of patterns of abuse; (2) the potential for progression; (3) social and psychological factors, and; (4) the quantities and the combinations of different drugs that some people take.

David E. Smith, M.D., founder and director of San Francisco's Haight Ashbury Medical Clinic says, "The greater the number of drugs involved, the more difficult it is to detoxify the patient and the tougher recovery is." Also, recidivism is higher for multiple-drug abusers.

Experimental

Substance use and abuse usually begins with experimental or exploratory use. An individual may then reject further use of the agent or may progress to other agents and patterns of abuse. Experimentation can be extremely dangerous to youth who find their idols advertising "socially acceptable" drugs on TV or admitting to using drugs.

It is important, then, that if abatement rather than treatment is the goal, major efforts must be aimed at preventing experimentation.

Social

Many drugs are used in groups. Much of the support for continuation of misuse of these agents is determined by peer pressure and group acceptance. Other than the adverse effects inherent in this environment, the exposure to continuing, and oftentimes destructive, patterns is obvious.

Episodic

Excessive amounts of an agent may be used periodically. During this episodic period of disinhibition, the individual may induce damage to himself, others, or the surrounding environment. This type of abuse, however, is elective rather than compulsive.

The progression from episodic to compulsive is arbitrary, and an individual most often mistakes the condition, assuming it is episodic when it is compulsive.

Compulsive

Compulsive abuse is an act based on emotion rather than volition, recognizably irrational even to the user, but senselessly repeated to avoid anxiety that occurs if use stops.

The probability of developing such a compulsive pattern depends on the sensory or pharmacologic reward that reinforces the behavior. The greater the reward, the greater the potential for compulsion and the greater the difficulty of stopping, even with the best of help.

Ritual

Many drugs are abused because of a preconception or expectation. Oftentimes, an individual anticipates a religious or psychotherapeutic experience. Ritualistic drugs are not used to provide some hedonistic reward, and the individual is not expected to agree with the philosophy for the use of the drug or to adhere to any associated life-style.

DEVELOPMENTAL FACTORS/CONSEQUENCES

Genetic

Embryological and fetal development play a notable role in an individual's biochemical makeup. These genetic factors seem to affect an individual's decision to abuse drugs.

Individual (Psychologic/Emotional)

Many have unsuccessfully tried to establish the existence of a dependent personality. Until compulsive users of hard drugs have participated in the drug world for many years, they do not differ greatly from the nonusing members of the group they came from.

Group (Sociological)

Since individuals form attitudes and react as members of groups, the attitudes and problems of a group will

influence an individual's drug use and reaction toward those who choose to use drugs.

The social factors that interact with the properties of drugs and the individual personality can be simplified into two categories: (1) the attitudes of the dominant group, and (2) the often conflicting attitudes of peers, ideals, and authority figures.

PHARMACOLOGICAL FACTORS

It appears that there are various pharmacologic properties that may predispose a drug for abuse. Some of them include: potential for rapid development of tolerance, short duration of action, rapid onset of action, abrupt release at termination of action, pleasurable euphoria, and a ritualistic administration. *The problem with all psychoactive drugs is that they make you feel more than you really are.*

CNS Depressants

Opiate-type Analgesics

Opiate-type analgesics are used to relieve pain and to relax. Pharmacologically, they possess two major actions. These properties are analgesic and antitussive in nature.

Natural and semisynthetic alkaloids include **morphine** and its derivatives or modifications such as **hydromorphone** (Dilaudid), **oxymorphone** (Numorphan), **diacetylmorphine** (Heroin), and **methyldihydromorphone** (Metopon); codeine and its derivatives or modifications such as **hydrocodone** (Dicodid), and **oxycodone** (Percodan).

The *phenylheptylamines* include agents such as **methadone** (Dolophine) and **propoxyphene** (Darvon).

Phenylpiperidines include agents such as **meperidine** (Demerol), **alphaprodine** (Nisentil), **anileridine** (Leritine), **piminodine** (Alvodine), and **diphenoxylate** (in Lomotil).

Morphinans include **levorphanol** (Levo-Dromoran), **methorphan**, **levallorphan** (Lorfan).

*Benzomorphan*s include **phenazocine** (Prinadol), and **pentazocine** (Talwin).

Designer Drugs

These synthetic agents are derived from chemical modification of various opiates. They are up to 600 times more potent than the naturally occurring alkaloids and are extremely dangerous. Various modifications have resulted in permanent Parkinsonianism, others have resulted in coma, permanent brain damage, and death.

Sedative hypnotics

These agents are sometimes used to counteract nervousness or to promote sleep. By slowing response and reaction time, however, they increase the risk of injury. They may also cause dependency. These agents are generally subdivided into the barbituric acid derivatives and the nonbarbituric acid sedative hypnotics. They are further

subdivided by their duration of action.

Almost all of the agents of abuse, including hypnotic sedatives, have a rapid onset of action and a short duration. Therefore, the short acting barbiturates have more of an incidence of abuse. **Methaqualone** (Quaalude) and **phencyclidine** are the nonbarbituric acid agents with a great potential for abuse.

Phencyclidine (Angel Dust) was first synthesized in 1957 to compete with secobarbital. It was found to be safe in animal administration but had severe adverse effects in humans. It is easy to make in clandestine laboratories, but the "street variety" contains several amine impurities.

Adverse effects include: agitation, disorientation, vivid hallucinatory phenomena, catatonic syndrome, bizarre behavior, convulsions, coma, and death.

CNS Stimulants

Some believe stimulants allow them to perform at higher levels for longer periods by increasing muscle efficiency and decreasing fatigue. Actually, these agents accelerate glucose, glycogen, and fatty acid metabolism, which can result in a decreased ability to perform. A person may experience a rapid deceleration of energy or will "run out of gas" more rapidly than would be expected. These drugs can cause dependency and the person may develop hypertension, tachycardia, insomnia, loss of appetite, and, in rare instances, intracranial hemorrhaging.

The stimulants can be subdivided into three groups: (1) local anesthetics, (2) certain sympathomimetics, and (3) xanthines.

Each of the **local anesthetics**, despite molecular differences, have similar properties and effects. They anesthetize by blocking sodium and potassium flow through nerve membranes—thus interfering with electrical conduction—and, paradoxically, can also increase CNS activity. They produce dependency, have similar adverse effects, and include **cocaine**, **procaine**, **lidocaine**, and other synthetic anesthetics. **Procaine is often sold as "legal cocaine."** (*Medical World News*, Aug. 16, 1982, 46-51).

Cocaine is rapidly growing in popularity. The CNS is generally stimulated and small amounts produce a feeling of elation or euphoria. Larger amounts cause restlessness and excitement. Motor coordination is not seriously affected at first, but as the dose is increased, tremor occurs. Chemically, cocaine is an ester of benzoic acid and has an amino-alcohol base, ecgonine, which is closely related to the base present in atropine. The plasma half-life is about one hour, and it is biotransformed in the liver. The fatal oral dose is reportedly 500mg.

The hydrochloride salt is generally adulterated with one or more of the following: mannitol, sucrose, lactose, caffeine, talc, amphetamines, heroin, phencyclidine, procaine, lidocaine, and strychnine. The powder is snorted intranasally. At times the hydrochloride salt is converted

to the free base with ether. The free base is resistant to destruction by heat and, therefore, may be smoked. Many times it is injected.

Recently a new form of cocaine base has become available in the United States. This new form, called "crack," is a cocaine base formulated in a paste with sodium bicarbonate. It produces dependency much more rapidly than the hydrochloride salt and is much more toxic.

Adverse reactions include atrophic nasal mucosa, mydriasis, headache, hypertension, hyperthermia, tachycardia (PVCs), paranoia, and hallucinations.

The **xanthine group** consists of a number of alkaloids found in many beverages. Caffeine being the most popular.

Caffeine works by multiple mechanisms. The most apparent is CNS arousal. Caffeine sensitivity differs monumentally from individual to individual. Adverse effects include jitters, powerful diuresis, dehydration, irritability, insomnia, and dry mouth. Heart disease, pancreatic cancer, and birth defects have also been reported. (*Int J Sports Med* 6: 178-186, 1984.)

The **sympathomimetic amines** comprise a group of agents that mimic the effects of endogenous catecholamines, e.g., epinephrine, norepinephrine, DOPA, dopamine, and serotonin. Amphetamines are a major group of drugs in this category. The effects are similar to those of the psychomotor stimulants and include: glycogenolysis, the liberation of free fatty acids from adipose tissue, increased cardiac output, and increased aggression.

Methylenedioxymethamphetamine (MDMA) is a potent agent commonly called "Ecstasy." It was first patented in the United States in 1914. The Army tested it for use in chemical warfare and found it to be more potent than LSD. Its exact mechanism of action is unknown, but it has a duration of action of one hour. It is the levo isomer and has severe adverse effects.

Some of the significant adverse effects are: increased blood pressure, sensory and verbal disinhibition, tachycardia, dizziness, hyperactive reflexes, insomnia, increased libido, and paranoid hallucinations.

Mood Modifiers

Psychotomimetics

These agents are called by various names including hallucinogens or psychodysleptics. Many have been abused for millennia. However, new ones are often created through modification of plant constituents or by chemical synthesis. They have no currently accepted medical use and have minimal to moderate dependence. Tolerance may develop.

It should be pointed out that even though these drugs are classified as hallucinogens they do not cause true hallucinations every time they are used. Many times they produce synesthesias, where the person perceives the environment in a distorted form.

Generally, the psychotomimetics can be classified into five agents or groups of agents. These are mescaline, **psilocibin**, **lysergic acid derivatives**, the **tryptamines**, and **cannabis** (marihuana).

Usual short-term effects of the psychotomimetics include visual imagery; increased sensory awareness; anxiety; nausea; and impairment in judgment, time perception, and coordination. Chronic ingestion effects are generally no different from short-term effects; however, long-term use has been shown to produce a more pronounced panic reaction.

Marijuana is a complex group of compounds. More than 37 varieties have been isolated. Some varieties are weak, while some are potent psychototoxic agents. However, there are generally three adverse factors relating to performance that are possessed by all varieties. These factors involve the cardiovascular system, the respiratory system, and the biochemical alterations in the central neurotransmitters and their receptor sites.

SIGNS AND SYMPTOMS OF ABUSE

Signs and symptoms of substance abuse are confusing because they mimic those of numerous pathologic states. Therefore, no listing of signs and symptoms should ever be used in any attempt to diagnose or assess drug problems. It requires extensive clinical expertise in conjunction with an evaluation of signs and symptoms.

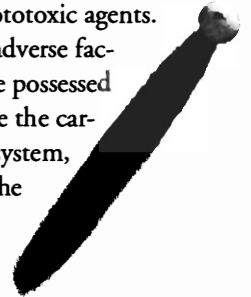
Physical signs of drug abuse may include: (1) loss of appetite or change in eating habits, bloated or puffy look, unexplained weight loss or gain; (2) lethargy, slowed or staggering gait, dizziness, slurred speech; (3) extreme hyperactivity; rapid speech; wild, jerking movements; (4) red/watery eyes, runny nose, drooping eyelids, persistent and hacking cough; (5) tremors or shakes of hands, feet, or head; extreme nervousness or agitation; (6) nausea/vomiting, excessive sweating unexplained by presence of another illness; (7) needle marks; (8) insomnia or excessive sleeping at inappropriate times; (9) noticeable change in personal grooming habits; sloppy, dirty, unkempt appearance.

Emotional signs and symptoms may include: (1) personality changes, unexplained violent or bizarre behavior; (2) changes in friends, new hangouts, sudden avoidance of the old crowd; (3) change in activities or hobbies, loss of interest in previously important activities, discontinuation of favorite hobbies and pastimes; (4) secretiveness, sudden withdrawal from family and friends; (5) unexplained periods of moodiness, irritability, depression, anxiety, or frequent temper tantrums and continuing resentful behavior; (6) sudden oversensitivity; (7) change or drop in performance at work or school; (8) noticeable drop in attention span, nodding off in class; (9) general lack of motivation to do anything, boredom.

CAFFEINE



MARIJUANA



DEPENDENCY SYNDROMES

Many people have tried to theorize why people become dependent. Many times the hypothesis has been solely pharmacological in nature and many times it has been based only on behavioral observations. Neither seems to be a complete delineation. A permanent "cure" of dependency requires a clear understanding of its pathophysiology. However, after decades of research it is evident that dependency syndromes are not understood and cannot be adequately explained.

A few of the hypotheses that have been proposed for dependency etiology and mechanisms are:

Genetic Propensity

Tennent feels that there is an inherited tendency that predisposes a person to a dependency. Thus, without this tendency a person, theoretically, could utilize a substance to a much greater degree than one with this inherited trait.

Enzymatic Aberration

Various investigators have proposed that the observed changes in enzymatic makeup could be a cause of dependency. The question yet to be answered is whether the enzymatic changes cause, or are a result of, chronic ingestion of substances.

Alteration of Biogenic Amine Synthesis

This proposed explanation is really an outgrowth of the enzymatic aberration hypothesis. However, the changes in concentration and configuration of centrally acting catecholamines is discussed as a potentially responsible agent.

Experiential Outgrowth

Peele and Brodsky state that dependency is not a chemical reaction. Dependency within this framework is an experience that grows out of a subjective response to something that has special meaning that is so safe and reassuring that the user cannot be without it. Those with learned dependencies try to avoid pain, compensate for personal inadequacies, and rely on external support systems rather than on self-actualization. These dependencies are not limited to pharmacological agents but include all substances, objects, or relationships that provide a means of escape from reality.

This holistic approach has far reaching implications and investigates the individual's dependence experiences by asking the questions: What are people like? What in their thinking and feeling underlies their behavior? How do they come to be as they are? What pressures from their environment are they currently facing?

Environmental Factors

Zinberg and Robertson suggest that the combined effects of set and setting are predominant factors which

overshadow the pharmacological action of dependency producing agents. Set is the psychological orientation or expectations associated with what the dependency producing agent will do to the individual. Setting is the physical and social environment in which the agent is taken or used. They feel that the more the drug is considered psychoactive the more the set and setting are crucial.

Goode states that drug effects vary as the drug-taking situation varies. He feels that the belief creates the effect, and the effect reinforces the belief, thus challenging the assumption that these agents have inherent properties which cause universal responses.

TREATMENT MODALITIES

Most types (modalities) of treatment are centered around the concept of changing from one dependency to another dependency. They are usually not designed to make the individual self-reliant.

Maximum success with any treatment requires users to understand the patterns of abuse, to accept the pattern into which they most closely fit, and to have an overpowering motivation to cease use or misuse of the drugs.

Detoxification

A temporary treatment approach is to provide the individual psychologic and/or pharmacologic support during the period of abstinence (withdrawal) syndrome. This approach is of short duration, usually from three days to a month. It is based on the assumption that "cold turkey" is a dangerous condition. However, except for specific types of sedative-hypnotic dependency, abstinence syndrome is not the significant factor. Another drawback is the inability to handle "protracted abstinence" with this modality.

Maintenance Therapy

The basic concept of maintenance therapy is based on cross-tolerance. The individual is taken from abuse of a substance and a new agent is substituted for a prolonged period of time. The new agent must have cross-tolerance with the discontinued substance, have a long duration of action (24 hours is ideal), produce dependency, have a controlled distribution, and preferably have an oral administration.

Counseling Services

Counseling services are mandatory in any type of treatment yet cannot stand alone. Group-type approaches to therapy have proven to be more effective than individual support. This may be, at least in part, due to the extreme need for peer acceptance in substance abuse.

Behavior modification techniques have been shown to be successful in the highly motivated individual. However, sensitivity training has failed; maybe in part to the already increased sensitivity the individual experiences under the influence of abused substances.

Therapeutic Communities

The therapeutic community concept developed out of laymen-administered, live-in facilities. In many of the facilities, the layman is an "ex-user." The general concept is to destroy the emotional makeup of the individual and rebuild it to the standards and norms of the "community." A danger is that the individual, even though overcoming the dependency on the drug, in many instances develops a strong dependency on the layman "ex-user" administrator. Many examples attest to the significant misunderstanding of this phenomenon.

CONCLUSION

The drug-abuse problem requires a concentrated effort by every professional. This will be difficult, however,

because of the constant glamorizing of drugs by peers and the media, which promote misconceptions about the effect of many substances.

Elder S. Dilworth Young testified: "I am . . . going to take action to protect my children from the designs of evil men in the last days, as the 89th Section portrays. [See D&C 89:4.] I shall do my best to teach my child that he is a sacred person, that he is an eternal being of two parts, body and spirit, to be fused together in the resurrection, that this eternal joining will best be accomplished if each part has equal development, that the body must be trained and conditioned for eternal progress in its celestial abode as well as the spirit, that because it is of the earth it tends to become earthy as well as earthly, but that it can be made subject to the will of the spirit." (*Ensign*, Conference Report, Apr. 1962, 117, emphasis added).



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